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HELLENIC REPUBLIC

Α.Δ.Ι.Π.

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ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ

HELLENIC QUALITY ASSURANCE AGENCY

ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

FOR HIGHER EDUCATION

EXTERNAL EVALUATION REPORT

DEPARTMENT of Telecommunication Systems and Networks

TEI Mesologgiou (Nafpaktos Branch)

Version 1.0

November 2008

External Evaluation Committee

The Committee responsible for the External Evaluation of the Department of Telecommunications Systems and Networks of the T.E.I. Mesologgiou (Nafpaktos Branch) consisted of the following five (5) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005 :

1. Professor Konstantinos (Costas) Plataniotis
(Title) (Name and Surname)

University of Toronto
(Institution of origin)

2. Professor George Karypis
(Title) (Name and Surname)

University of Minnesota
(Institution of origin)

3. Professor Christoforos Chadjicostis
(Title) (Name and Surname)

University of Cyprus
(Institution of origin)

4. Dr. Dimitris Kabilafkas
(Title) (Name and Surname)

O.T.E.
(Institution of origin)

5. Dr. Michail Skoutelis
(Title) (Name and Surname)

ANKO
(Institution of origin)

Introduction

The external evaluation committee (EEC) met from the 26th to 30th of April to complete the external assessment of the Department of Telecommunication Systems and Networks – TEI Mesologgiou (Nafpaktos Branch). More specifically: after being briefed by HQAA in the morning of the 26th, traveled to the town of Nafpaktos and later in the afternoon the EEC panel committee met at the Campus of TEI (Nafpaktos Branch), and had a meeting with the president of the institution, the vice president of the institution (ranking member of the department), the head of the Department, and four members of the Faculty. The EEC had an extensive discussion with the president of the institute, the department head and the rest of the department's representatives regarding institutional support, long term academic planning, and issues related to budget and capital expansion. On the 27th and 28th of April the committee had lengthy discussions with all members of the faculty (tenured and tenure-track faculty), departmental administrative staff and students (a complete list is provided below), visited three labs (while in session), a class meeting while in session ("Wireless Networks", elective course), solicited comments and input from administrative personnel, students and teaching staff. On the morning of Wednesday, April 28th the committee met with student representatives, individual students, the chief administrative officer as well as the chief business officer - TEI Mesologgiou. On the afternoon of 28th of April a first draft of the report was compiled where additional needed documents were identified, collected and evaluated. EEC panelists inspected the student accommodation (dinning) facilities on Tuesday, April 27th and Wednesday April 28th. A preliminary presentation of the findings (exit interview) was made to the department head on Wednesday, April 28th, 2010. Four faculty members and the vice-president of TEI Mesologgiou (Prof. Kougias, ranking member of the department) were in attendance. The final version of the report was written on the 29th and 30th of April.

The visits at TEI Mesologgiou (Nafpaktos Branch) included the following activities:

The Committee visited:

- The departmental facilities
- The library
- Teaching classes
- Labs, where the EEC had the chance to observe three lab sessions
- The student accommodation (dinning) facilities

The committee met with:

- The President, TEI Mesologgiou (Prof. Vangelis Politis-Stergiou)
- The Vice President, TEI Mesologgiou (Prof. Ioannis Kougias)
- Chief Operating Officer and Chief Business Officer, TEI Mesologgiou (Siorikis, Karvelis)
- The head of the Department of Telecommunications Systems and Networks - TEI Mesologgiou, Nafpaktos Branch (Vasileios Triantafillou)
- The tenured/tenure-track members of the faculty (Profs. Kougias, Voros, Louvros, Dagiouklas, Alefragkis)
- Administrative Personnel – Nafpaktos Branch (Kalogeraki, Spyropoulou, Hasani)
- Librarian – Nafpaktos Branch (Adamopoulou)
- Lab instructors / technical support personnel (briefly during the lab visits)
- Students (from different years of study; interactive Q&A session with students during visits to the following labs: Electronics (semester of study: 2), Programming Languages (semester of study: 2), Networks I (semester of study: 4)
- Student representatives (Kolaros, Papadopoulos, Kotsospiros, Zournatzis, Nathanail)
- Graduating Students: (Giannakopoulos, Dounis)

The committee was also given access to:

- The program of Undergraduate studies and its revised version (Greek/English edition 2008)
- Internal Self-Evaluation Report (revised edition, December 2009)
- Revised (draft) program of studies (2011 edition)
- A four page draft MSc program proposal
- Anonymized copies of course evaluation reports (student feedback forms)
- Samples of anonymized exam papers (six copies)
- Samples of diaries/log books from students' practical training (six copies)
- Samples of lab notes, lab exercises and reports (six copies)
- Samples of textbooks used
- Access to e-class facility (the Department's e-learning system)
- Access to class notes (available for distribution, 2010 Winter semester)
- Course syllabus, reviews and specifications
- Detail breakdown of course grades (as part of the internal assessment report)
- Student final year (cap-stone) project theses (six copies)
- Samples of publications / Conference Proceedings and edited volumes (Lecture Notes – Springer: published conference records (Mobimedia 2007 Conference)).
- Curriculum Vitae (Tenure track faculty)

A. Curriculum and Teaching

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

A1. Curriculum

APPROACH

The Department of Telecommunication Systems and Networks – TEI Mesologgiou was established in the municipality of Nafpaktos (2004) as a stand-alone departmental unit (Nafpaktos Branch). The department offers a four year degree program covering a wide spectrum of information and telecommunications technology (ICT) topics with particular emphasis on a) communication networks, b) communication systems technology, and c) informatics, computer system technology. The stated objectives of the curriculum are the creation of high quality graduates that are capable of working in application areas of Telecommunications and Networking. For this reason, the curriculum includes both a semester of a practical experience (required by law) as a trainee in a company that is active in these areas as well as an undergraduate thesis (cap-stone project). Graduates of the department should be able to design, evaluate, operate and maintain wire/wireless telecommunication systems, and develop software and hardware components of telecommunication systems and play a key role in the telecommunication and software industries in Greece. As per standing policy and current legislation, graduates of the department are recognized telecommunication professionals entitled to work in all fields of science and technology covered by their specialty.

The current curriculum appears to have been based on International standards for an undergraduate program in Informatics and Computer Science, with specialization to networking and telecommunications in the two last years of study. While this was more of a necessity due to the academic staff that was available in the early stages of the department, this has to be updated by (1) either deemphasizing some of the components that are clearly related more to a typical computer science curriculum or taking these components and ensuring that the focus is on the aspects and the application of these components with respect to telecommunication systems and networks (examples of such courses include data bases as used in HSS/HLR, algorithms e.g. for routing or planning optimization, and APIs for Open Service Architecture e.g Java servelets); (2) strengthening the components of the curriculum that are related to the physical and data link layer communications systems (systems and signals, digital signal processing, random process and noise modeling). The practical component of the curriculum is well-matched to the society's expectations for the program (in terms of preparing telecommunication practitioners that are ready to get involved in technical positions in the industry). As the number of graduates from the program increases, there is a need for the department to compile and make available to senior students a comprehensive list of positions/companies that are appropriate for practical training, also ensuring that the students get enough exposure to technical issues when they spend time at these companies. It would also be worthwhile to enable companies to come in contact with students early on (e.g., via presentations and meetings), which will allow the students to get a better idea early on of what their career possibilities are and the kind of opportunities they will have in the future professional careers. It should be noted that there is no graduate program though the department is in the midst of creating one. The department has recently proposed a new master's program on "Technologies and Infrastructures for Broadband Applications and Services". Though this is a rather flexible process, the department needs to pay careful attention to make sure that they identify the area (or areas) where they have accumulated (or have the means to accumulate) significant expertise and focus their efforts (in terms of advanced courses, researchers, faculty and student recruiting) in this area (or areas). To the best of our knowledge we have not encountered a similar M.Sc. program by the University of Patras in the area of "Technologies and infrastructures for broadband Applications and Services". Thus with careful planning and targeting the department might be able to compete, or even better complement, by providing expertise in specific areas.

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. Although the currently implemented curriculum is deemed by the committee adequate, further improvements are possible. The limited available resources, in terms of both infrastructure and faculty complement, inhibits 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. Moreover, the committee recognizes that some of the problems are simply growing pains, whereas some of the other problems are structural. The large number of stipend instructors currently hired yearly 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 overall work load of the current curriculum is rather high, especially in the first four semesters. There a number of factors contributing to the issues: First, the number of courses that the students need to take in the first four semesters appears to be rather high, compared to a typical workload of peer institutions. 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, Calculus, Differential Equations) and they do not sufficiently/effectively motivate students. In the committee's view the curriculum should better integrate theory/foundation courses with the subsequent technical courses 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. For example, it was noted during the site visit that more than 30% of the freshman class has a background on "Arts & Letters" (history, literature and arts) with minimum exposure to science and technology (mathematics, physics and chemistry, pre-college engineering practice). 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 committee notes that the faculty has identified the problems and that it is actively working on several initiatives to revitalize their program.

The curriculum has a number of limitations and room for considerable improvement. The curriculum has a large number of courses devoted to traditional computer science (informatics) topics such as data structures, analysis of algorithms, distributed programming, databases, and operating systems. These courses are only partially related to the primary fields of study of the program, and as such the amount of time that is devoted to them is not necessary and the curriculum can significantly benefit from a restructuring that will replace them with courses that are more closely related with Telecommunications and Networks. The rest of the courses can also potentially benefit for such an application- and use-focused restructuring, as the current curriculum appears to have created a number of courses that are topic/concept focused, as opposed to pulling together these topics/concepts as they are used within the technical areas. One suggestion for a curriculum re-organization is to identify the specific concepts and knowledge that the students need to acquire as they relate to Telecommunications and Networks, and then either create a small number of consolidated courses that will contain those concepts (e.g., combine concepts of data structures and algorithms together along with a programming language course such as Java, combine operating systems with distributed systems, etc) or introduce the concepts as needed in the appropriate Telecommunication and Networking courses (e.g., incorporate algorithms, data structures, or operating systems as needed in the various network or signal processing courses). In the committee's view such an approach is in line with the current practices in peer institutions in North America and Europe. Moreover, an added benefit of such an approach is that by better connecting some of the more theory oriented, computer science concepts with their actual application within Telecommunications and Networking, makes it easier for the students to understand why they need to study them and how they are applied.

The course material are structurally coordinated, in the sense that the subsequent courses build on

previously taught concepts, there are pre-requisites among them. There is limited overlap amongst courses .

There is a number of infrastructure and personnel requirements to effectively implement the curriculum. At present the department has six full time faculty members (two professors and four assistant professors). Six more full time faculty members are scheduled to join the department within the next two academic years. However, even if the planned hires are taken into account, the number of permanent faculty members is insufficient. As a result, more than 75% of the programs' credit hours are offered by temporal instructors.. This number is expected to drop to about 50% after the faculty members that have been hired and/or will be hired join the department. 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. All of these are essential in order to create the proper environment in which education can flourish and create a sense of pride and ownership from the students. 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, (2) decrease the number of courses that are being offered during each term, or (3) or combine the two solutions. It is the committee's recommendation that the hybrid approach is pursued. Due to the nature of the admission process the department is required to offer the entire set of courses on both the fall and spring semesters. Such a requirement, severely limits the ability of the department to offer special topic courses that are specifically designed to address requirements of small but important technology segments. The committee notes that none of the peer institutes in North America or Europe follows a similar practice. The committee understands that the current practice of offering all the courses during each term, is dictated by the policy of the Ministry of Education. However, the committee strongly believes that the department should take advantage of the expected changes in the admission policy in order to reduce the number of courses that are offered in each term. The physical infrastructure of the department is also limited both in terms of space and in terms of equipment for the number of students that are enrolled (total number of students: 1030). These limitations are both in terms of the number of rooms/equipments and also the number and types of existing laboratories and associated equipment. This introduces unnecessary burdens to the students and also degrades the quality of the education that they receive, as often they resort to simulation-driven experiments.

RESULTS

The department is relatively new (it has operated since 2004) and has not yet graduated many students. The latest numbers (at the time of the evaluation) included 28 graduates; even though it is difficult to assess the number of students that were attending courses in these years (as opposed to simply being registered), the number of graduates is relatively low (about 10% of the eligible number of students). This reflects the difficulties that students have in following through the curriculum. Part of the problem is the quality of some students and 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. Another part of the problem is that the curriculum is front-loaded, which makes it hard for students with insufficient background 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 vocational schools) but has not yet taken any steps in addressing it. One possibility is for the department to consider offering optional preparatory courses in basic mathematics, physics, and programming to students that have insufficient background. This will of course require some resources but can significantly aid in the implementation of the curriculum.

The department recognizes that there are problems with the curriculum and its implementation. There is definitely a problem with space (and this is recognized uniformly by faculty, staff, and students), which creates problems in terms of room and laboratory availability. This will be addressed hopefully in a year from now when the new premises will be made available. The department also recognizes that the high number of temporary instructors create a continuity problem with the curriculum. At the same time, they are content that they have access to high quality temporary faculty from the close-by University of Patras. The department should take steps to increase the number of permanent staff, and continue to hire (a smaller number of) visiting instructors; at the same time, however, it should better engage these visiting instructors into the department (e.g., by engaging in activities with the visiting researchers, having some office space for the visiting faculty, accounting for some time to offer office hours by the visiting faculty, etc.). The department needs to also understand the realities that are at place in regards to the quality and diversity of the student population. They need to think about ways to address the insufficient background that some students have in mathematics, physics, and computer skills (e.g., by offering preparatory courses and by allowing good students to opt out by taking the final exam). Another problem with the curriculum is the fact that it is heavily oriented towards informatics (as evidenced by the courses such databases, algorithms, Java, etc.), though recently the department has taken steps into strengthening the physical layer component (e.g., by introducing courses in digital signal processing). 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. This was probably one of the reasons that the curriculum has a disproportional focus on typical computer science (informatics) courses. More importantly, by not making the curriculum in the department have its own identity and focus (in Telecommunication Systems and Networks), the department puts itself in an unfortunate position where it has to compete against other informatics departments in Greece and misses the opportunity to create its own identity and attract students that are interested in the Telecommunications and Networking areas.

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 vocational schools) but has not yet taken any steps in addressing it. One possibility is for the department to consider offering optional preparatory courses in basic mathematics, physics and computing to students that have insufficient background. This will of course require some resources but can significantly aid in the implementation of the curriculum.

IMPROVEMENT

The department proposes a new master's program "Technologies and Infrastructures for Broadband Applications and Services" and a new revised curriculum to be applied. The committee is delighted to note that the proposed (draft) curriculum, December 2009 edition, takes steps to address many issues discussed in section A of this report. The department aggressively pursues the hiring of 4-5 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 networks and telecommunication systems. The departmental long term strategic planning ("four year strategic planning document") includes provisions, where possible, so that part time faculty and external collaborators are reduced by substituting them with fulltime permanent staff.

The committee recognizes the departmental efforts to acquire more (physical) space and notes the recent efforts to enhance the quality of the program with the introduction of three new laboratories. In the view of the committee the newly established wireless communications and antennae laboratories will be instrumental in improving the overall quality of the program. The committee feels that institutional changes are called for in order to support an already improving situation in this department. In particular the committee is in full support of the lobby efforts currently under way to reduce the teaching load for all academic ranks, especially assistant professors, and make it equal for

all academic ranks. The teaching load reduction will allow for additional research initiatives and will further increase the already impressive number of successful research projects. The new space and equipment space are critical for the success of the proposed Master program and the uplifting of research initiatives.

A2. Teaching

APPROACH:

The department's theory courses are primarily taught using the blackboard/whiteboard with or without the use of visual aids (power point slides). Also, a small percentage of the courses are taught using student-focused discussion groups. A large number of courses have exercise and laboratories sections as well. These courses are taught by first providing an overview of the associated theory followed by the respective laboratory exercises/experiments. The e-class course-management tool is used extensively by both academics and students.

The nominal instructor to student ratio is very high, compared to average ratio reported by peer institutions. The actual ratio, as reported in the updated internal self-assessment report, is more in-line with the numbers reported by other institutional units (TEI Mesologgiou) mostly due to inactive/part-time students. However, it should be noted that the current infrastructure, both in terms of physical space and equipment, cannot support the number of students currently enrolled in the program. This appears to be the case for most, if not all, foundation courses offered during the first two semesters of study. For example, it should be noted that the current installment of Physics I was attended by 191 students. Similarly 147 students were registered in Calculus I. During the 2009-10 academic year 175 students reserved spots in the various Introduction to Programming lab sessions with 115 students registered to attend the corresponding lecturing session. The committee is concerned that even elective courses such as Wireless Networks and Network Security are over subscribed with more than 74 and 60 registered students respectively. The current facilities are *not* meant for 120 new students per course, per semester. A target number of 60 students per lecturing session and 20 students per lab session appear to be a much more sensible choice. The projected increase from six to 11 full time faculty members within the next two academic years should be considered a step towards the right direction.

The committee is pleased to report that the level of cooperation between faculty members and the student population appears to be very good. Students' acceptance and assistance to the evaluation procedure for courses indicates a level of cooperation not seen in similar units within the institute or other peer units within the Greek post-secondary educational system.

Infrastructure is not in par with the infrastructure in peer institutes but well used. The department should be afforded the opportunity to make their own decisions with respect to procurement, especially when it comes to lab equipment, computing facilities and networking infrastructure. It should be noted that due to the nature of the department, its remote location, and the need for specialized equipment, centralized procured 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 (e-class) for distribution of course related information (syllabus, class-notes, announcements, and course related commentary). The students use the system extensively. Members of the faculty along with students are planning the introduction of departmental wide wiki-style collaborative tool.

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 projects that the students need to perform at certain time-points during the course. The final grade is determined as a weighted sum of the scores achieved by the students at the various performance assessment mechanisms employed by the course. During the discussions with the students, it became clear that they wait until the week of the finals to study. It is the committee's opinion that such an approach is far from being optimal and the department is encouraged to institute compulsory mid-term exams.

IMPLEMENTATION

Overall, the students have been satisfied with the teaching procedures. However, there were some issues that were raised as they relate to the instructional ability of some of the temporary instructional staff

The available teaching material and resources are of high-quality and recent. However, they are not sufficient for the number of courses that are being taught and the laboratories. This includes both lecture rooms equipped with overhead projectors and laboratories with a sufficient number of equipment.

The course material consists of a set of textbooks, lecture notes / handouts and suggested/required readings. The material is, in general, updated regularly, and they are uploaded in the web-based course management system.

The department is organizing one-day workshops and invites external speakers on various relevant and timely research areas and topics. In addition, the department (or its faculty) is hosting/organizing multi-day events during the summer (e.g., conferences, workshops, summer schools). The department is encouraged to better publicize such events in order to increase the student participation.

A large percentage of the academic staff, both permanent and temporary, does not live in Nafpaktos but are commuting primarily from the city of Patra. The commuting permanent faculty spent nearly their entire day on campus. However, the temporary instructors are there only for the hours that they are teaching. This substantially reduces the ability of the students to contact these instructors in order to answer them any questions related to the course material that they teach. One way of addressing this problem is to require that for each course, each instructor holds at least one office hour in order to be able to answer any questions that the students may have. Also, for the commuting students, the recording and online-availability of the lectures, can potentially be of great help.

The department utilizes a standard evaluation form for each of the courses that it teaches. The evaluations provided by the students are used to identify potential problems with the curriculum and to evaluate the quality of the temporary instructors.

RESULTS

The students are in general positive about the efficacy of the teaching, especially from the permanent faculty members. However, some students raised some issues relating to the instructional ability of some of the temporary instructors and also their depth of knowledge of the course material. Also issues were raised about the pace at which the material is being covered and 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.

There is a high failure rate at the first/second year core courses. The failure rate at subsequent years is lower. However, in absolute terms, it still remains quite high (less than 50% for a considerable number of courses). It appears that the primary reasons for these high failure rates are three-fold. First, weak science and informatics background for some of the students that enter the program. This is because either they did not take advanced math/physics courses in high-school or because their high-school grades were low. Second, the strong theory-emphasis of the curriculum during the first year, dampens the student's enthusiasm to study on an on-going emphasis. Third, the life-style changes and freedom associated with the students' transition from the shelter of their homes to being at a different city and independent, also comes with the responsibility of focusing on their studies.

The department so far has graduated 20 students with an average grade of 6.7. The mean number of years for completion of the degree program (for those that have graduated) is six years (in a four year program). Given that the incoming classes of 2004—2006 years had 369 students, this number is quite low. The slow graduation rate and hence the associated difference in the (expected) completion time can also be directly attributed to the same set of factors that lead to differences in failure rates among the students. The committee did not closely review discrepancies in success/failure rates amongst

semester courses. It is noted that that grades gravitate towards an average of 6.5/10. The percentage of students scoring about 8.5/10 (“excellent”) is extremely low. The average number of years from admission to graduation (5.5 years) years is not justified and the usual excuse of ‘working students’ was not well documented.

The department has made a considerable effort in gathering course performance and graduation statistics in order to identify the discrepancies that exist between the differences in course failure and graduation rates. The department’s conclusions are to a large extent in agreement with those of the committee. This speaks highly of their strong desire to improve their program and their focus towards the success of their students.

IMPROVEMENTS

It will be also beneficial if the department invest in either electronic whiteboards or electronic writing pads coupled with projectors, in order to be able to record the lectures and make them available on the course’s website. This will be extremely beneficial to the students that have to commute and also to students that had to miss some of the lectures.

B. Research

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

APPROACH

Despite the fact that research is not directly supported by the institution, either in terms of research funding, research infrastructure, or teaching relief, the permanent faculty of the department are involved in a number of research activities in their respective areas of expertise. The objective of this research is to enhance the education and training of the students by integrating research and education and to advance the state-of-the-art in the areas of telecommunication and network systems. However, the specific research directions are rather broad and not well-focused in the areas of telecommunications and networking. The department has limited resources to directly promote research. Anecdotal evidence suggests that the department provides some travel funds to its members in order to attend conferences and research workshops. In addition, the department promotes research by organizing/hosting workshops and conferences to bring together researchers from other institutions (both local and abroad) with the department's faculty. However, it is the committee's recommendation that additional resources should be provided to the department from the institution in order to further promote research. In summary, although research within the department happens primarily at the faculty level, the collective impact contributes to the strength of the department as a whole.

The department's research infrastructure is to a large extent non-existent. It consists of some space and a very limited number of equipment. Despite that, the department's research outcome in the course of the last few years has been remarkable and speaks strongly about the dedication and capabilities of its faculty. The institution needs to provide significant resources in order to improve the department's research infrastructure. Moreover, since major research equipment (e.g., large routers and switches) are rather expensive, funds for them cannot be obtained from the individual research projects, and thus need to be provided by the institution.

IMPLEMENTATION

The department's output in terms of refereed research publications in journals and conferences is good. In the last five years members of the department have (co-)authored 45 journal papers, 89 conference/workshop papers, and 24 books/monographs. A large percentage of the journal and conference publications are in high-quality and competitive venues.

The department has and is currently participating in seven research projects in the areas of telecommunication systems, networking, and informatics. These projects are funded by national or international institutions. The department has a number of research proposals currently under review.

Members of the faculty have well established research collaborations with faculty from other institutions in Greece, such as U of Patras, Pantio U, Hellenic Open University, and peer institution abroad (Germany, France, Norway, Portugal). It is the committee's opinion that the department should also try to establish research collaborations with researchers from the telecommunication and networking companies within Greece, in order to also focus its research activities into areas that may have near-term practical applications. It appears that research activities are, for the most part, restricted to full time academic staff with minimal student involvement. EEC noted that the organized by the department for "Summer School" (July 2010) is not open, or even known, to the students.

RESULTS

The department has done a reasonable job in pursuing its research objectives, especially in advancing the state-of-the-art in its technical fields. This is evident by the number of publications and the fact that their research is well-recognized over 200 external citations.

It has created four research groups that represent some of the currently active and emerging areas of research. The department's effort on integrating research with education and training is also solid but is limited to the students that are involved directly in the research projects. However, it is the committee's opinion that the department needs to take additional steps to strengthen and enhance this integration. The department's "Summer School" program represents a good opportunity to expose the students to the various research topics and issues.

IMPROVEMENT

The committee believes that the research results are very satisfactory, considering the department's mission and the available infrastructure. Faculty participates in numerous research projects, both at the national and EU level, and publishes extensively. The publications are in respectable venues. The department has an excellent track record in conference organization (e.g. Mobimedia 2007) and faculty members appear to be keen to publish in reputable ACM/IEEE conferences with reasonable acceptance rates. The committee recommends that faculty should invest in submitting and publishing in archival journals. Several theses were completed in collaboration with the Instituto Politecnico de Leiria (Portugal). It is expected that the general improvement of the department's resources (space, labs etc) will expand the research possibilities. It was noted elsewhere that a new M.Sc. is under development. It needs to be better refined in terms of scope, target and context. Finally it should be noted that the affiliation/connection or even web-based monitoring of the collaborative activities of international telecom bodies and fora (e.g. ETSI, HGI, ADSLForum, IMSForum) would contribute to the sharpness of the research activities and their connection to industry-relevant R&D areas.

C. All Other Services

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

APPROACH

The Department currently offers a variety of services to its members, including the following: (i) Wireless Internet access to students and staff, (ii) Web pages and course material online (via e-class) for all courses, (iii) administrative support for student registration, (iv) free lunch and dinner to all students; (iv) partial access to sports facilities via an arrangement with a nearby facility.

The department in the near future is planning to offer access to its library but only for two days a week. The library is equipped with a multiple copies of very good textbooks but has been inaccessible to students thus far. There is no space for students to use a reading room in the library. The Department is also starting to create a list of companies with positions that will make available to the students pick and choose among the options they have when it comes to practical experience.

IMPLEMENTATION

The Department currently has two permanent members of administrative staff and one temporary member, that work in the Department's main administrative unit. There is also a librarian (recently hired) that has recently started to staff the library part-time (two days a week). There is currently no laboratory technician and no IT technician, but only a person that assists with the computer network on a per-contract basis.

Housing information is provided to the students by the local Municipality of Nafpaktos and it is unclear how well is performed. The Department has some vague plans for offering these services potentially through the Student Union. There does not seem to be a mechanism in place for students to become involved in the local cultural life.

The Department appears to be completely isolated from the main campus: there is no student bus service, there is no interdepartmental mail service, no exchange of personnel on a need (daily) basis, no substituting of personnel in case of an illness or absence due to other reasons.

RESULTS

The kind of support described above is not adequate for a department of this size, particularly if one takes into account that the fact that this Department is at a geographic location that is distant from the main campus (so that it does not have the luxury of utilizing services offered by personnel employed at the main University campus).

The administrative personnel (three persons at the main secretariat of the department) do the best they can and appear satisfied with the services that their unit provides to the department. However, though no complaints were expressed by the faculty, it was evident that the support they offer to teaching and other activities of the faculty is minimal. Moreover, the student body expressed serious complaints about the service they provide since they are open to the student body only four hours per week (only two hours on two particular days of the week). It is also worth mentioning that since this is a department located away from the main campus, the administrative personnel spends a significant amount of time on tasks that are usually performed by other University units (e.g., registration, grade administration, check of requirements for graduation, etc.).

The Department is aware of the absence of IT and Laboratory support, and they recognize that they need to take immediate steps in hiring support people even on a partial basis (this should not be difficult due to the relative proximity of Patras). Laboratories and computing systems seem to be functioning correctly although there appears to be intermittent service with the outside Internet due to documented problems with the local Internet provider. The faculty and other teaching personnel

should be praised for the efforts in ensuring the smooth operation of the laboratories and the information systems.

IMPROVEMENTS

The Department has been taking important steps in improving the various services offered at the Department. They understand that they need to hire administrative personnel permanently based in the Department. They also need to immediately hire one IT person and one Laboratory technician at least in a partial-time basis. Better coordination and communication with the main campus is also desirable.

Though not explicitly considered by the Department, there is a need to more carefully consider services for the students. This is particularly important because of the fact that the Department is located away from the main campus so that the normal services and social activities that are available at University students (by various units, student organization, etc.) are completely absent. Students come in to a small town and find themselves overwhelmed by the realities of the new environment. The heavy course load they are faced with during the first couple of semesters also adds to these difficulties. The Department can consider offering a housing service, orientation days, additional hours for counselling and teaching of basic math and physics courses, and other activities that would help the students socialize and get to know each other.

Something should also be done to increase the morale of students who come in typically disappointed that they could not make it to a more highly ranked department. For example, in coordination with various Telecommunications and Network companies, there can be presentations by companies about potential roles and jobs that students of this department can assume once they graduate.

D. Strategic planning, perspectives for improvement and potential inhibiting factors

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

The EEC panel noted that the department has developed a four year strategic planning framework and it embarked on a yearly self-assessment and review exercise. The department's plan calls for numerous ad-hoc reviews. Their plan of action (p. 46 of the internal evaluation report) is realistic and reasonable. The revised internal self-assessment study is a step towards the right direction. The department needs to capitalize on the current momentum and develop a capital and resource expansion plan for the period 2010-2020. The current capital expansion plan focuses mostly on short term problems, such as rental space. However, given the projected undergraduate enrolment and the planned M.Sc. studies emphasis should be placed on major capital expansion. The committee recognizes that the current framework may inhibit future departmental growth, never the less it considers that the strategic goals of the department are within reach.

The committee noted with satisfaction the institution's strong support and commitment to help the department. During the committee's meeting with the institution's top administrators it was evident that the institution is immensely proud of the department. The institution considers its Nafpaktos branch a successful department in terms of students, faculty, national and international recognition and student education. TEI's central administrators were committed to provide additional resources on a competitive basis and provide access to earmarked national funding to assist the department to become a recognized "center of excellence" in telecommunication systems and networks.

E. Conclusions:

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

The overall impression of the committee is very positive. The committee was impressed with the (permanent) faculties' work ethic, their willingness to go the extra mile and their genuine interest to promote the department's interests. The committee found the faculties' research record to be well above the norm, compared to that of peer institutions (TEI departments), and that despite the fact that the current TEI operating framework for research is inadequate and counter-productive. The EEC panellists found the internal self-assessment report useful. It provided a succinct and accurate "environmental scan" of the department's aspirations, strengths, problems and limitations. The committee notes with satisfaction that students seem to respond well to the faculty. Overall student satisfaction is average. The committee is concerned with the rather small number of students graduating on time, the above average number of "drop-outs"/ inactive students. It is the committee's recommendation that the department should aggressively pursue linkages with industry and government departments which can offer placement & training spots for its students. Enhancing services offered in support of students' practical training and in-program training experience is of paramount importance. The level of technical services is below average, although existing infrastructure is utilized well. Administrative and other services are in urgent need for improvement. It is unacceptable, in the committee's view, that access to the library and to administrative support is severely limited to only a handful of hours per week.

The key findings of the committee are summarized in the table below:

<i>Curriculum</i>	<i>Teaching</i>	<i>Research</i>	<i>Services</i>	<i>Strategy</i>
<p><i>Program – Approach</i></p> <p>On the right track. Need for application/use focused restructuring.</p>	<p><i>Teaching – Approach</i></p> <p>Very good. Need for additional resources (lab facilities, instructional equipment), reduction of temporary teaching staff.</p>	<p><i>Research- Approach</i></p> <p>Excellent given the size of the faculty and the academic mission of the department.</p>	<p><i>Services- Approach</i></p> <p>Room for improvement. Student support is not up to par.</p>	<p><i>Strategy- Approach</i></p> <p>Very good. Four year planning exercise, yearly based internal self-assessment study.</p>
<p><i>Program– Implementation</i></p> <p>Good. Need for additional resources (office space, lecture rooms, lab space, reading hall), need for additional faculty hiring.</p>	<p><i>Teaching– Implementation</i></p> <p>Very good and includes asynchronous e-learning tools.</p>	<p><i>Research- Implementation</i></p> <p>Very good in spite of institutional difficulties.</p>	<p><i>Services- Implementation</i></p> <p>Adequate, room for improvement. Departmental services run mostly on personal initiatives and the volunteerism of its faculty.</p>	<p><i>Strategy- Implementation</i></p> <p>Excellent. Constant effort to improve and re-calibrate.</p>

<p><i>Program – Results</i></p> <p>Good and up to date. Need to improve dropout rate; reduce number of courses in which students may ‘register’; take measures to shorten the actual and nominal length of study.</p>	<p><i>Teaching-Results</i></p> <p>Good. High graduate employability and satisfaction (based on anecdotal evidence due to the small number of graduates).</p>	<p><i>Research-Results</i></p> <p>Impressive in terms of number of publications, quality of publications, number of citations and the academic mission of the unit.</p>	<p><i>Services-Results</i></p> <p>Below par in terms of support of the students. Need to improve the quality of student life.</p>	<p><i>Strategy-Results</i></p> <p>Very good. Department on track to meet several of its targets.</p>
<p><i>Program – Improvement</i></p> <p>Need to reduce teaching load, need to make it less front-loaded, need to identify telecommunications and networking concepts and knowledge.</p>	<p><i>Teaching-Improvement</i></p> <p>Need to reduce teaching load; expand asynchronous, education deliverance methods (invest on electronic whiteboards, record lecture sessions).</p>	<p><i>Research-Improvement</i></p> <p>Identify key research areas, target quality publication venues, link research effort to (planned) graduate program expansion.</p>	<p><i>Services-Improvement</i></p> <p>Room for improvement, extend services, obtain professional assistance.</p>	<p><i>Strategy-Improvement</i></p> <p>Need for autonomy; given the status of the department (“Nafpaktos Branch”).</p>

RECOMMENDATIONS

Resources-Space: The department is in need of additional space. New lab space, office space (especially for new hires and stipend instructors for office hours), library and reading hall space, space for two additional “open labs”, conference room, communal space (“student union hall”) and office space for administrative personnel. The department should draft a 10 year capital expansion plan.

Research: Access to state of the art shared research/lab equipment is needed. Procurement decisions should rest with the department and purchased via institutional funds.

Teaching & Research: The department should heavily invest on lecture deliverance infrastructure and acquire the infrastructure needed to deliver quality services to an increasing number of students (e.g., expand e-class infrastructure, procure archiving and streaming servers). The department should reduce the number of distinct courses/labs that it offers in each term. The department should reduce the number of temporary instructional personnel. Temporary instructors should take formal courses on modern teaching and course management techniques. In the committee’s view teaching overload and excessive administrative overhead (for both tenured and tenure-track faculty) are key issues that should be urgently addressed. An across the board reduction of teaching load should be implemented effective immediately and junior members of the faculty should be afforded opportunities for research related activities. The current collaboration with peer institutions should be strengthened and encouraged. The planned graduate program is a step towards the right direction.

Administrative infrastructure: The department requires additional administrative support. The current size and pool of talent cannot support the need of the department. Student administrative support is adequate (to say the least) and needs to improve. Professional training on project management is recommended for both administrative personnel and academic staff with administrative responsibilities. The department needs to introduce, with institutional collaboration, a quality control framework.

Funding & Faculty complement expansion: The committee recommends that four-to-five faculty

positions (at the assistant professor level) should be hired in addition to those already appointed or elected. Substantial support is needed both in terms of capital expansion and direct funding for research. The EEC panel recommends that institutional support is provided to (junior) faculty members for professional development (e.g. participation in conferences). Travel funds should be provided for international cooperation meetings.

The Members of the Committee

Name and Surname	Signature
1. Konstantinos (Costas) Plataniotis	
2. George Karypis	
3. Christoforos Chadjicostis	
4. Dimitris Kabilafkas	
5. Michail Skoutelis	