The Program has a very direct benefit in the economy of Portugal

The fourth meeting of the External Review Committee (ERC) for the collaborative programme between universities in Portugal and Carnegie Mellon University in the USA – the Carnegie Mellon Portugal Program in Information and Communication Technologies – took place, at Faculdade de Engenharia da Universidade do Porto, over the period from 14th to 16th October 2010. The Committee commented as follows:

“This visionary initiative is having a very positive impact, advancing yet further the standing and standard of research and postgraduate education in Information and Communication Technology in Portugal. The programme has now been in operation for four years; the progress and achievements are very impressive indeed. During this our fourth evaluation visit we met, as previously, with a wide range of people involved: the Secretary of State for Science, Technology and Higher Education; the President of FCT and the Executive Director for International Partnerships at FCT; the two program directors (from Carnegie Mellon University and the National Director, Portugal); participants in the programme (faculty both from Portuguese universities and from Carnegie Mellon; industrial sponsors and collaborators; a number of students, post-doctoral researchers and alumni) and the Board of the programme. We are again highly appreciative of the way in which all involved engaged with us during our review visit. We especially commend the way in which the Directors, with the support and encouragement of the Board and the government, have responded to the recommendations we have made in our various reports following earlier visits.

“The programme has progressed well and we have high confidence that the benefits are becoming deeply embedded in the university system in Portugal.”

- Extract of the External Review Committee Report, October 2010.
dual degree PhD programs and collaborative research projects, which link academics and researchers in Portugal with those at Carnegie Mellon University and with industry in Portugal. The international involvement and commitment is especially commendable. The programme has progressed well and we have high confidence that the benefits are becoming deeply embedded in the university system in Portugal. This is undoubtedly greatly assisted by the way in which the academic and industrial research community in ICT in Portugal has become yet further involved in the continued shaping and refinement of the programme. This pattern of strong engagement is a very positive feature that in our view should be maintained in a follow-on phase of the activity, which we consider to be required to ensure that the benefits to Portugal of the investment made to date are fully realised.

“We continue to be impressed by the high calibre of the students recruited to the dual degree programmes and by their commitment and enthusiasm. They clearly recognise the nature and value of the distinctive international experience afforded by the programme – with study and research in both Portugal and at Carnegie Mellon University in the USA. In this respect the programme is making an important contribution to the development of potential future leading researchers for the Information and Communications Technology sector in Portugal – in industry, academia and as contributors also to public policy areas. There is no doubt that participating students benefit greatly from undertaking a substantial period of study at Carnegie Mellon, while faculty movements in both directions have played an essential part in helping ensure real coherence of educational experience as well as equivalence of standard. We had the opportunity earlier during this fourth year to play a part in the evaluation of proposals for collaborative research projects. This gave us close sight at an early stage of emerging research projects. The project proposals were of a very high technical standard and particularly impressive for the high degree of industrial participation. We observed last year the growing number of companies becoming involved with the programme and it is good to see that this has continued. There are also now examples of very direct benefit flowing to the economy of Portugal through technology take-up in industry as well as some new start-up companies being formed. It is clear that, as hoped, the direct and intimate industrial engagement in the collaborative research and with the individual student Ph.D. and MS projects is providing a most valuable channel to enable the ready flow of the fruits of research towards economic and societal impact. We were pleased to see that the new Institute in Madeira relating to Human Computer Interaction (HCI), proposed last year, has now been established. This we consider an imaginative and important development of considerable potential benefit, catalyzed by the Carnegie Mellon Portugal programme. "We congratulate all involved on the excellent way in which the activities in the programme have been progressed. In our view the Carnegie Mellon Portugal Program is making a real contribution to the development of Portugal and the programme is making a valuable contribution to the development of the field of computer science in Portugal. We believe that this programme will continue to be a valuable asset to the country and we look forward to seeing it continue to grow and prosper." - Extract of the External Review Committee Report, October 2010.

New Paper Reveals the Importance of Vehicles as Obstacles in Vehicular Networks

Rui Meireles and Mate Boban, dual degree Ph.D. students in Computer Science (CS) and Electrical and Computer Engineering (ECE), respectively, will present their paper “Experimental Study on the Impact of Obstructions in Vehicular Ad Hoc Networks” at the 2010 IEEE Vehicular Networking Conference.

This international conference, which will be held in December 13-15, 2010, in Jersey City, New Jersey, seeks to bring together researchers, professionals, and practitioners to present and discuss recent developments and challenges in vehicular networking technologies, and their applications.

Meireles explains that "channel models for vehicular networks typically disregard the effect of vehicles as physical obstructions for the wireless signal". For this reason, in this paper, the authors aim to clarify the validity of this simplification by quantifying the impact of obstructions through a series of wireless experiments.

In the abstract of the paper, the authors explain: "Using two cars equipped with Dedicated Short Range Communications (DSRC) hardware designed for vehicular use, we perform experimental measurements in order to collect received signal power and packet delivery ratio information in a multitude of relevant scenarios: parking lot, open space, highway, suburban and urban canyon. Upon separating the data into line of sight (LOS) and non-line of sight (NLOS) categories, our results show that obstructing vehicles cause significant impact on the channel quality. A single obstacle can cause a drop of over 20 dB in received signal strength when two cars communicate at a distance of 10 m. At longer distances, NLOS conditions affect the usable range of communication, effectively halving the distance at which communication can be achieved with 90% chance of success. The presented results motivate the inclusion of vehicles in the radio propagation models used for VANET simulation in order to increase the level of realism and meaningfulness."

The paper was co-written by Meireles; Boban; Peter Steenkiste, faculty at CMU in Computer Science and Electrical Computer Engineering Departments; Oxan Tonguz, faculty at CMU in Electrical Computer Engineering Department; and João Barros, faculty at FEUP/ICT.
EPP Student looks into Telecom Policy for Developing Countries

Moinul Zaber is a Bangladeshi Ph.D. student in the Engineering and Public Policy (EPP) dual-degree program, taught by Instituto Superior Técnico from Universidade Técnica de Lisboa (IST/UTL) and Carnegie Mellon University. His prior degrees were in Engineering, but he "always had a passion for Policy related challenges."

Zaber joined the program in 2009. After one year and a half in the program, Zaber says that this program is very "multicultural, motivating, and unique."

Currently, he is looking at telecommunications policies in developing countries. His main focus is to build a model which would help regulators to understand what factors aid countries to embrace new technology like 4G Wireless Network. Therefore, Zaber's thesis title is "Spectrum Policy for Efficient Development of 4G Technology."

"A Ph.D. in EPP seemed the best way to equip me in works related to Engineering Policy."
- Moinul Zaber, EPP Student.

This Ph.D. student in EPP is also a researcher of a new project entitled "The Role of 'User Innovators' in the Development of Telecom Products and Services", funded by the Carnegie Mellon Portugal Program. This project, which is carried out by Pedro Oliveira (Faculdade de Ciências Empresariais e Económicas da Universidade Católica) and Francisco Veloso (CMU), aims to investigate the role of "users" as sources of innovative ideas for new Telecom/IT products and services.

To develop his Ph.D., Zaber works closely with his two advisors: Pedro Ferreira, from IST, and Marvin Sirbu, from Carnegie Mellon University. They usually have regular meetings in person or by skype.

In terms of studies, Zaber says "I would not say that it went smooth, but nevertheless I have always enjoyed meetings with the kindhearted and highly motivated professors and peers." After finishing his Ph.D., he expects to work on telecom regulation.

The Program in the News and Media

October, Diário de Notícias da Madeira
Madeira ITI was Highly Commended by the Carnegie Mellon Portugal Program External Review Committee 2010

October, Portuguese News Agency Lusa

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