

## **Report: CMU | Portugal Faculty Exchange Program**

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Period of Visit: July 7 – August 31, 2012

Host: Erica Fuchs, Engineering and Public Policy Department

Upon conclusion of my faculty exchange visit at the Carnegie Mellon University I feel very optimistic and enthusiastic about the future nurture of the seed collaboration initiated within this program. The preparation of my faculty exchange visit started on January 5<sup>th</sup>, 2012 and, since I participated in several activities remotely before arriving to CMU, this report relates to the activities developed during the period between January and August 2012. The report is organized in three main sections: projects, classes, and reading groups.

### **Projects:**

#### *Supply Chain Strategy in High-Tech Start-ups*

The research collaboration initiated with Erica Fuchs was fostered by a common interest in learning how high-tech start-ups choose their manufacturing location. The discussions about this topic led ultimately to the submission of a research project proposal to the Portuguese Foundation for Science and Technology in March 2012, entitled *Supply Chain Strategy in High-Tech Start-ups*. This visit served as a kick-off action for this new research area at the intersection of supply chain management and entrepreneurship. During the period at CMU, I worked closely with Erica's student Carl Glazer, who is learning about the manufacturing location decisions of the Carnegie Mellon technology manufacturing start-ups. The alignment of the research design between the teams at INESC TEC and CMU was of highly importance to assure the execution of a coherent comparative international study in the future.

#### *Industrialization and socioeconomic resilience*

During my visit at CMU, I also had the opportunity to discuss with Erica Fuchs ideas for future research regarding strategies to create and retain manufacturing onshore. Erica Fuchs participates actively in the Advanced Manufacturing Partnership, an US initiative that *"brings together industry, universities, and the federal government to chart a course for investing and furthering the development of the emerging technologies that will create high quality manufacturing jobs and enhance U.S. global competitiveness"*.<sup>1</sup> INESC TEC participates in the research platform initiated by IN+ Center for Innovation, Technology and Policy Research, called *Observatory of Paths of Industrialization, Scientific Development and Technological Change*, which aims at understanding of the main variables underlying industrialization and deindustrialization.

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<sup>1</sup> <http://manufacturing.gov/amp/amp.html>

**Classes:***Global Entrepreneurship and the Future of Advanced Manufacturing*

During this course the students have the opportunity to apply the topics learned in class to a semester-long project on a real-world emerging technology being developed by a start-up company. Production cost and sourcing strategy analysis are carried out in order to recommend a manufacturing location for a new product. I had the privilege of assisting to the student presentations throughout the semester through videoconferencing (three intermediate presentations and the final project presentation) and to read the final reports of classes 2011 and 2012. I could observe some outstanding practices in Erica's teaching: (a) students work and learning process was used to solve a real-world problem, increasing the motivation and the learning of concepts through the hands-on approach, (b) students had to reach out to a considerable number of organizations throughout the semester in order to collect the information needed for their analysis, giving them the opportunity to learn from practitioners as well, (c) feedback from faculty was given not only regarding the content of presentations and reports but also regarding their form and format (communications skills, excel graphics, presentations design, etc.), (d) students learned how to formulate a research question and the basics of conducting interviews, transcribing and coding, so that at the end of the course they understood what conducting qualitative research means. By being observant in this class, I learned how to implement a hands-on approach of teaching and this experience will certainly enrich my future teaching.

**Reading Groups:**

From June till August, I participated in two reading groups. The first reading group had the participation of Erica's incoming PhD students and had as main objective to create a common understanding on the fundamental principles surrounding global competitiveness and technological change. It was based on the readings of Erica's class "*Global Competitiveness: Firms, Nations, and Technological Change*". The main topics discussed were globalization, the theory of the firm (division of labor, hierarchies and markets, and bureaucracy), economic institutions, and networks. To help guide the readings, Erica distributed questions, which answers were discussed during the group meeting.

The second reading group was target to students in Erica's research group initiating qualitative research. Through weekly meetings the group covered theory building, case studies, methods triangulation, grounded theory, interviewing, oral histories, and expert elicitation. For each reading group session participants read two to three papers or book chapters. For each reading, one person was assigned to lead its discussion.

I believe that carrying out such reading groups is a very healthy way to foster common understanding, learning, and collaboration among a research team and will therefore encourage the creation of such initiatives in my home institution.