

SUMMARY

The habilitation thesis carried out 12 years later after the PhD thesis presents, in a documented way, my professional achievements and my scientific contributions during this period of time.

A brief description of my achievements can be summarized in two areas: **academic/educational** and **scientific/research**. These are described in the **first section** (chapter B) of the habilitation thesis.

In the **academic/educational** area I supported as holder and coordinator the next disciplines/subject matters: Engineering of Production Systems, Machine Tools and Advanced Operations Management Techniques (course, laborator and project), for bachelor and master studies. I was coordinator for diploma projects (over 80 projects), dissertations (over 60) and also member in 14 doctoral committees for PhD thesis in Engineering and Management or Industrial Engineering fields.

I was coordinator in the implementation of the masters programs developed in the Bologna ECTS framework at the Faculty of Managerial and Technological Engineering from University of Oradea. I set up and I am coordinator of a postgraduate course in the field of Engineering and Management (The management and the risk assessment in the work security field and health). Also in the Engineering and Management field I have guided students to national professional competitions carried out under CIER (Consortium of Economic Engineering in Romania). At an international level I provide the management for the University of Oradea in a CEEPUS network in the industrial engineering field.

In the **scientific/research** area I obtained results based on scientific publications and implementation of grants/research projects on three directions with interdisciplinary topics, such as:

- a. Lean techniques applied in the operational management of the production;
- b. The integration of components within MUCN (CNC Machine Tools) and FMS (flexible manufacturing systems);
- c. Research with applications in university educational management.

The Lean technique used in operational management involves the use of specific tools for each application. Thus, after a perfect knowledge of the process in terms of technical and economical characteristics, there are established one or more "targets" that lead to the increase of economic efficiency. The indicators which define the economic efficiency are specific to each process or application, and in many cases are based on identifying and reducing losses (MUDA).

Thus, based on LEAN fundamental theory, I approached applied research that used different Lean tools: VSM, 5S, A3 Analysis, TPM, SMED, Kaizen, fructified through scientific publications in journals or sustained within the professional conferences.

The integration of the components and the growth of MUCN and FMS productivity, are concerns materialized in the retrofitting activity and development of rotary-tilting tables for machining in 5 CNC axis. To support this research I have received EU funding within the FP7 Programme, coordinating the research for the design, development and manufacture of rotary-tilting tables for machining on MUCN in 5 axis (MANUNET Project, RTT-5). The studies are focused on structure, kinematics and precision of these tables.

The performance in education and university management are newer concerns and are aiming analyzes, studies and approaches that implemented in the academic activity leading—to superior quality indicators. Thereby I approached the quality management in higher education, the development of skills in the field of sustainability for master studies, the development of ethics in research, the development of counselling activity, the promotion of internships.

I should mention that the approach of the three research directions above mention was based on the promotion and integration of the concept of sustainable development, actions also promoted through scientific publications in this field.

Besides scientific research in this area I have been involved in the POS-DRU projects that address the matter of efficiency in training students from a technical profile and also the support of scientific development at a doctoral and postdoctoral level (CV).

The acknowledgement and the impact of my scientific activity are embodied by the association with and the participation in the editorial staff or scientific committees of journals (4) and scientific manifestations (8) most important at national level (according to the A.3 sheet - habilitation conditions). The quality of founder member of AMIER (Romanian Managers and Economical Engineers Association) and holding the position of general secretary within the CIER (Consortium of Economic Engineering in Romania), (since 2008), gives me the opportunity of contributing to the consolidation of the Engineering and Management field.

Also the expertise gained in my teaching career allowed the cooptation and my involvement in national assessments of research projects (CNCSIS, ANCS, AMCSIT).

The direct involvement in university management activities (head of department, dean, rector) gives me the opportunity to promote the scientific activity in this area through studies and published research papers but also to support and coordinate at an institutional level of many educational and research projects.

All the research were carried in collaboration with researchers from the same fields or connected fields (project management, quality management, fuzzy logic, marketing, robotics, artificial intelligence, etc.), colleagues mentioned as coauthors in scientific papers specified in references.

In the **second section** (chapter C) of the habilitation thesis I present the evolution and research plan of my professional, scientific and academic career.

So regarding my professional career I intend to obtain the scientific coordinator of PhD thesis in and I will involve myself and participate in the accreditation and consolidation processes of the PhD field at the University of Oradea. I will also have in the forefront to the national development of the Engineering and Management field by boosting and strengthening of the CIER and AMIER as well as by involvement for the creation of a international network of this field.

The research directions developed until now, will be continued, deepened and exploited, and the new directions (Six Sigma, Intelligence Human-machine interface, Advanced Manufacturing and Processing) will be linked to current ones. Targeting the “smart research” is a priority generated also by the „Horizon 2020” program. It will be mandatory to direct the applied research towards socio-economic beneficiaries from the region and nationally.

The **third section** of habilitation thesis presents the references associated with the first two sections.