

RESEARCH PROFILE
Dr Don Petkov
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My research has been predominantly in the area of applications of multicriteria decision analysis (MCDA) and systems thinking to Information Systems (IS) management and complex managerial problems. However it has also branched in several other areas like systems analysis and design, work system method, software development productivity, telecommunications planning, web software development and testing, information systems education, some artificial intelligence methods like case based reasoning, genetic algorithms and neural networks. I have worked since 1995 predominantly on application of systems thinking and MCDA to Information Systems, Software Engineering, environmental and societal developmental problems, IS management and IS education.

My most important paper in my research output prior to 2000 is on a decision model with AHP for prioritizing the factors affecting software development productivity published in the Journal of Systems and Software, whose main ideas were suggested by me though my co-authors contributed with their knowledge of productivity issues in IS.

I have been interested for many years in IS education, academic computing and academic management. I see that line of my research as an important element of efforts needed to improve the quality of teaching. I have been involved also in several smaller projects related to managerial problems in academia including management of research output and assessment.

I have attempted to address also certain important theoretical issues in the theory of IS like systems thinking and IS/Software Engineering, Systems Analysis and Design and Design Science, the Work System Method by Alter, validation of information systems, overcoming paradigm incommensurability in multimethod research, development of executive information systems and the role of the technology acceptance model. These are closely related to the evolution of my overall research agenda over the years from the more narrow area of MCDA to the new and evolving areas of Problem Structuring Methods or Soft Systems Thinking applied to Information Technology management, rural telecommunications development, Systems Analysis and Design Science and applications of the Work System Method. My research in the IT area was helping me in staying current and relevant in my IS teaching. My work in environmental and developmental decision making informed my teaching of systems thinking at the School of Environment and Development and the Leadership Center of the University of Natal and in the masters program in organizational management ECSU. An important line of my work reflects my efforts on bringing together Community Informatics and Community Operations Research both in theory and in practice. I have been trying to contribute in a humble way in the past decade towards the development of several multimethodology frameworks for mixing methods in solving complex problems in the Information and Communications Technologies sector.

The relevance of my work for the field of systems thinking, software development, decision making and IS education has been reflected also in the special issues that I have edited on applying Soft Systems Thinking to technical problems and to Information Systems and in my editorial work as a Deputy Editor for Systems Research and Behavioral Science and as an editorial board member for several related journals. More details are provided in my full CV.