

## **I UTP Project Management Competence Centre**

V0.3/21 December 2016

### **II Name of the Group's Leader with a Short BIO (CV)**

Professor UTP Bogdan Lent was awarded with doctor habilitated in economical sciences, discipline management from the Faculty of Management, Technical University in Czestochowa (Poland) and doctor-engineer title in ICT (industrial computer architecture) from the University in Hagen, Germany. He absolved the doctoral studies at the Swiss Federal Institute of Technology ETHZ in Zurich.

He authored and co-authored 180 publications in English, German and in Polish languages, comprising 11 books. His two books from 2013 on cybernetic approach to project management win German (ICT-specific) and in English (general) scored 70'000 of downloaded copies from the publisher (Springer).

Prof. Lent contributed significantly to the development of the official Swiss Government project Management method HERMES and applies it successfully in a number of strategic Swiss Government projects.

He is an official advisor to the Polish Minister of the ICT in charge of the project risks. He is consultant and holds the courses on project management in the Ministry of Digital Economy (former ICT) and the Ministry of Transport of the Kingdom of Thailand.

He shares his knowledge and support the young researchers' development as a professor at the Bern University of Applied Sciences in Bern, Switzerland and as a visiting professor at Kasetsart University in Bangkok, Thailand.

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### **III Name of the Group's Members and their Research Areas/Interests**

#### **1. Prof. dr. habil. eng. Waldemar Bojar**

Waldemar Bojar is the head of the Engineering Management Department at the Faculty of Management of the UTP and supervises research teams dealing with different domestic and international projects concerning economic models, data bases, domain knowledge bases and tools useful to solve management and production engineering problems. His area of interest includes Decision Support Systems. In this area he carried out several international projects as a leader, supervisor and performer. Among them one can mention MACSUR and MACSUR 2 worked out to integrate bio-physical and economical models and deliver output useful for forecasting solutions. This survey concerns a creation of regional case studies focusing on extreme whether events and corresponding undesirable farming effects to find climate change mitigation and adaptation solutions ensuring food safety. He was also a leader and/or supervisor of some other international projects like TOWARDS focusing on the development of SME cooperation within Food Supply Chains, TEMPUS or SCORATES-ERASMUS project concerning the improvement of education processes in the area of economy and management.

#### **2. Dr. eng. Małgorzata Zajdel**

Małgorzata Zajdel lead the chair of the Regional Development at the Faculty of Management of the UTP. She is an expert in evaluation and monitoring methodologies, serving the local authorities in numerous endeavours.

In particular she led the EU survey projects: COM (2009)103 in the area of assessment of the ICT access, available in the rural areas, and project KINGNET about the international competitiveness of the polish enterprises. As an expert she participated in development and deployment of the

evaluation and monitoring systems for community development realised within the EU V Frame Programme Human Capital. The University Authorities, in recognition of her competence in the above areas, entrusted her with a responsibility for the educational quality of the University on behalf of the rector of the university.

Dr. Zajdel authored and co-authored about 160 publications and expert's opinions.

### **3. Postgraduate PhD Candidate 1 (Beginning 2017/2018)**

Research area in cognitive and neuronal conditioning of the project management knowledge storage and human decision systems

### **4. Postgraduate PhD Candidate 1 (Beginning 2017/2018)**

Research area in applied project management in the agro-industry

## **IV Leading Research Topic of the Group**

The research focus on **innovation in project management**. Project today are managed along the methods conceived in the 1950-1960. Increased controlling, number crunching did not contributed to any significant improvement in project performance over the last 60 years. Einstein said: we will not solve the problem with the same thinking patterns, which led to their emergence. So a new thinking is a promising alternative.

The innovation is pursued in two directions:

1. **Inwards:** thinking patters, mental models, impact of the hemispherical laterization on decision process, human brain involvement in project management decisions.
2. **Outwards:** pro-active methods of effective and efficient project management, cybernetic approach in private endeavours and public administration projects.

The "Inwards" research shall reflect the recognitions and impact of the practical experiences in the outer world. The mental models are to be validated and enhanced.

In turn the "Outwards" research shall identify the key success factors, generalized and application area specific. Professor Lent advocates for the last 15 years the relevance of the human factor in project management (refer to his publications). So his research aligns perfectly with the most recent WEF<sup>1</sup> report on the top 10 skills needed in 2020:

- Complex Problem Solving
- Critical Thinking
- Creativity
- People Management
- Coordinating with Others
- Emotional Intelligence
- Judgment and decision Making
- Service Orientation
- Negotiation
- Cognitive Flexibility.

With this approach the research contributes to the applied science development and serves the educational and scientific development of the skills most needed in the next generation.

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<sup>1</sup> WEF Global Challenge Insight Report, The Future of Jobs, Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution, WEF Cologne/Geneva 2016

## V Best realization of the Main Research Topic

**Cybernetic Approach to Project Management:** Development of the I, II and III order cybernetics in project management. Taxonomy of the processes and inclusion of the human decision process into the project management method.

**Project manager motivational factors:** Jointly with the researchers of the Swiss Military Academy at the renowned ETHZ in Zurich a broad population of 1300 professionals in Switzerland has been surveyed. 61 motivational factors has been identified and classified along their impact on the motivation. A taxonomy has been developed and published in high IF JCR journal. The use by various researchers in 10 countries worldwide is reported.

**Human factors in project management:** Worldwide unique elaboration of the detailed project manager activities and the identification of the capabilities needed for their efficient performance, in particular in the area of the human factors, which brought frequently quoted publications. Successfully advised PhD Thesis in this area at Kasetsart University in Bangkok, Thailand.

**ProCur:** The Analysis of the Requirements and Skills needed in Project Management of the Swiss Ministry of Finances. In this research the requirements and skills had been identified and a mandatory curriculum of four development stages for all project managers of the Ministry (about 200) has been formulated.

**INA:** An Analysis of the major ICT System of the Swiss National Roads Authority deployed in the Express Ways Management and Maintenance with Lessons Learned for the following and ongoing Swiss Government Projects. An application investment of about 30 millions Swiss Francs has been analysed from the point of view of project realisation. Key success factors has been identified and the taxonomy of the results has been elaborated.

**MACSUR** – The FACCE JPI Knowledge Hub on “A detailed climate change risk assessment for European agriculture and food security, in collaboration with international projects” KNOWLEDGE HUB FULL PROPOSAL Modelling European Agriculture with Climate Change for Food Security (73 organizations from 17th countries for studying the effects of climate change on food security using models. Waldemar Bojar – WP1 Leader od subtheme called “TradeM” responsible for inventory, develop, test and compare of economic and trade models of TradeM partners let compare the results and identify knowledge gaps based on findings of existing models.

## VI General Expression of Interest

Development of the methods of the improved efficiency and effectivity of project management.

## VII. Specific Interests and Additional Topics of Extended Interest

The enclosed list is exemplary and not comprehensive. Room is left for individual development of research interests of participating group members.

- Models of Cybernetic Approach to Project Management
- Endeavours modelling under criterion of their management
- Mental models and their development
- Cognition and its impact on decision processes
- Differentiation in decisions process of the brain hemispheres
- III Order cybernetics in neurological systems
- Efficiency of the objects oriented (right hemisphere) education versus algorithmic (left) one

- Models of andragogical education in project management capabilities
- Cultural impact on demanded capabilities
- Cultural impact on motivational factors
- Project complexity and complexity treatments methods
- Differentiating factors in project management between specific application areas, the congregation factors and their impact on efficiency and effectivity of project management
- Efficiency and effectivity factors in public administration project management

### **VIII. Other Important Characteristics of the Group**

The key characteristics without claim for its comprehensiveness are outlined below.

- Strong focus on a common goal, oriented towards the contribution to the local economy, national and international impact and development of the unique selling proposition for all those seeking the knowledge in project management
- Development of the Competence Centre of Project Management with strong international competitiveness
- Strong commitment to deliver the concrete results for practical deployment
- Inclusion of national and international industries in collaboration and joint research
- Deployment of the interdisciplinary research from the local scientific community (UTP, UMK, UKW) and broader international partners (Switzerland, Thailand, potential in Malaysia, Laos, Germany and Austria).
- Proved track of research in the area of participating group members
- Proven successful deployment of knowledge in practice
- Good linguistic capabilities for international cooperation

### **IX. Main Group's Achievements**

The group is newly composed. The group members acquired competences and knowledge certified by earlier achievements, which together form a sound basement for the efficient and fast progress in the attempted area of the Project Management Competence Centre.

Initiated are several incentives targeting the development of the sound applications in Horizon 2020 programs within the forthcoming months.

Elaborated are new study programs in project management in Polish and in English and pursued is a master thesis in the area.

Actively are announced calls for PhD researchers nationally and internationally.

### **X. 5 Best Selected Publications (Criterion: most quoted)**

- Lent B (2013) IT Projektmanagement als kybernetisches System, Springer, Wiesbaden
- Lent B (2013) Cybernetic Approach to Project Management, Springer, Berlin New York
- Seiler, S., Lent, B., Pinkowska, M., Pinazza, M (2012) An integrated model of factors influencing project managers' motivation — Findings from a Swiss Survey, Intl. Journal of Project Management 30(1)/2012, Elsevier, London, p.60-72
- Pinkowska, M., Lent, B (2010) Soft Skills Needed in the ICT Project Management – Classification and maturity level assessment, Intl. Journal of Applied Systemic Studies, vol.4, Issue 3, 2012, p.168-185
- Lent, B (2015) Project Leadership in Praxis and Its Theoretical Background, in AbedAlasadi, HA, SE Advances in Social and Behavioral Sciences CT SSR International Conference on Social Sciences and Information (SSR-SSI 2015), Pt 1, Singapore, p.9-17