Centre for Innovation and Technology Transfer Management

Research brochure

Warsaw University of Technology

Centre For Innovation and Technology Transfer Management of Warsaw University of Technology as a Research Center

Taking into account the achievements and tradition of the Warsaw University of Technology as well as current conditions and needs, three strategic goals of CZIiTT were formulated in its Development Strategy until 2021. Strategic goals have been defined according to the Center's main areas of activity: science and research, technology transfer, entrepreneurship and education support are the pillar activities of the Centre.

Research Center

Center of Technology Transfer and Entrepreneurship Support

Center of Education Support

CZIiTT (WUT) as a research center is responsible for conducting research and development works for the knowledge-based economy, specializing in initiating and implementing research projects of an interdisciplinary nature, with particular focus on areas of supporting innovative academic entrepreneurship, technology and innovation transfer, science and business networking, creative processes and non-technological innovations, quality management in higher education, evaluation and monitoring of projects.

| networking	research and analysis	business incubation	technology transfer	trainings, workshops, consultancy

CZIiTT PW has a network of research laboratories, including the space for creative work, that allow the implementation of research in appropriate conditions.
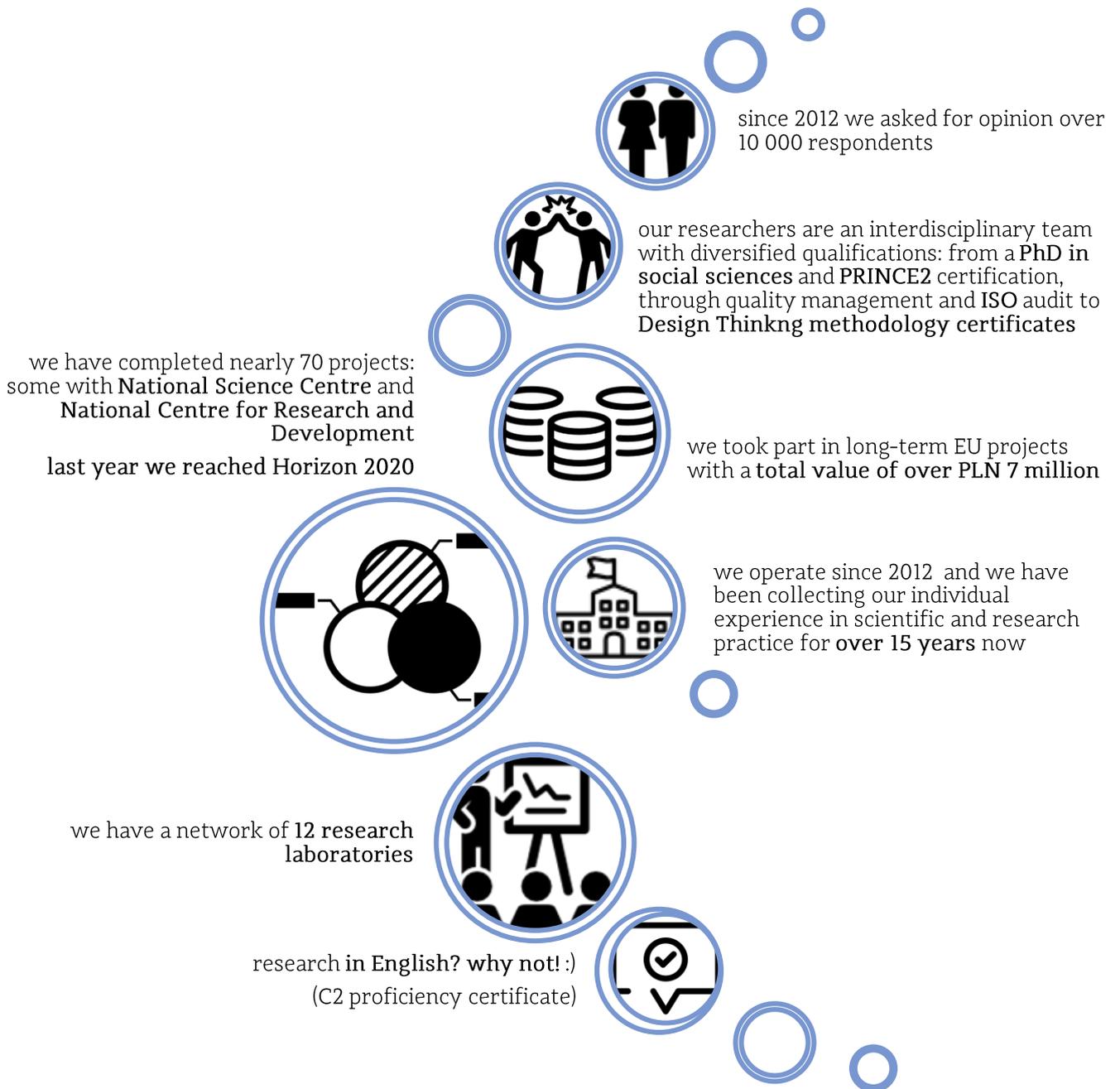
Research and Analysis Department

It is one of seven units of CZIiTT (WUT). Research and Analysis Department is an interdisciplinary team of researchers with vast experience in scientific and commercial research. The research and development staff of CZIiTT (WUT) have knowledge and competences in the fields of sociology, economics, psychology, information technology, social policy and culture sciences.

We specialize in initiating and implementing research projects of an interdisciplinary nature, with particular focus on thematic areas such as:
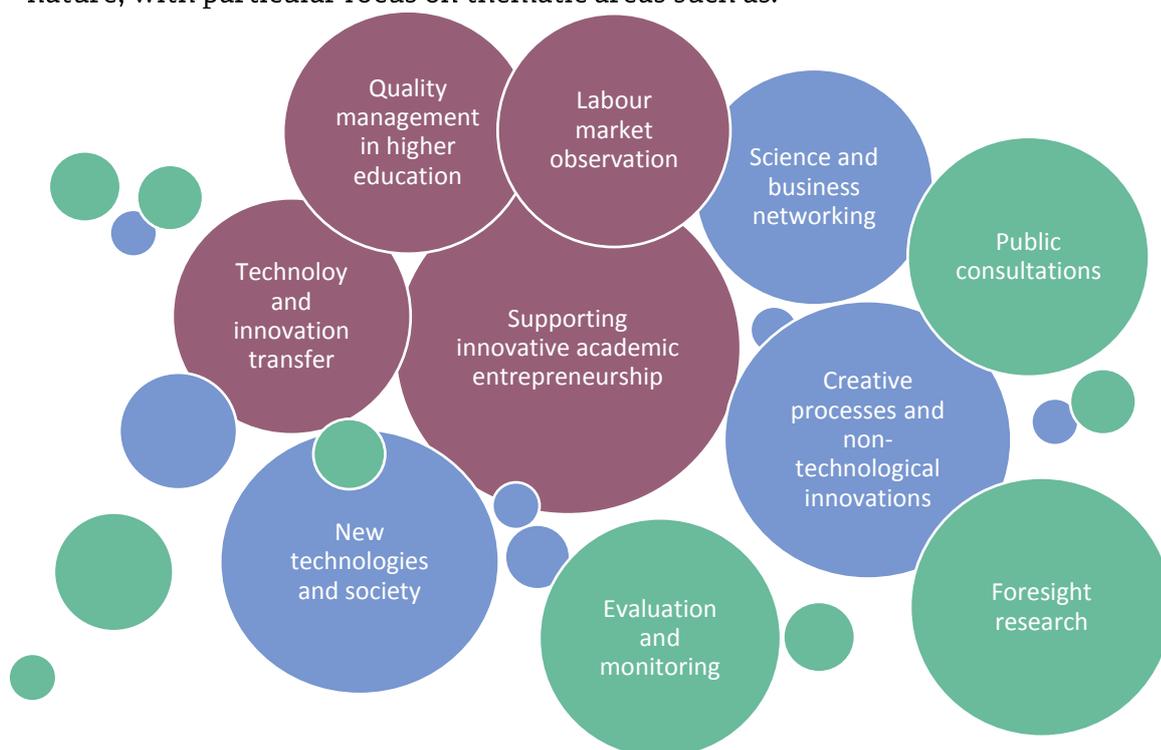
- **supporting innovative academic entrepreneurship**: diagnosing ways of understanding entrepreneurial features and competences, demand for services and products, including defining customer groups, research on the competition market, and also testing products and services;

- **technology and innovation transfer**: research concerning social challenges and technological solutions, focusing on the needs and expectations of science and business, as well as creating innovations, creative problem solving (Design Thinking) and research assisting new products and services development (Service Design);

- **science and business networking**: Business Intelligence, User Experience (UX), market research;

- **creative processes and non-technological innovations**: implementation of social and economic research with the use of creative workshops, games and Design Thinking;

- **quality management in higher education**: research on the quality of education focused on HEI's stakeholders and the needs of stakeholders employing university graduates;

- **labour market observation, foresight research, public consultations, evaluations and monitoring.**

Research and Analysis Department in a nutshell

since 2012 we asked for opinion over 10 000 respondents

our researchers are an interdisciplinary team with diversified qualifications: from a **PhD in social sciences** and **PRINCE2** certification, through quality management and **ISO** audit to **Design Thinkng methodology certificates**

we have completed nearly 70 projects: some with **National Science Centre** and **National Centre for Research and Development**
last year we reached Horizon 2020

we took part in long-term EU projects with a **total value of over PLN 7 million**

we operate since 2012 and we have been collecting our individual experience in scientific and research practice for **over 15 years** now

we have a network of **12 research laboratories**

research **in English? why not! :)**
(C2 proficiency certificate)

Scientific methods and research tools

The Research and Analysis Department is a team of experts in the field of social, qualitative and quantitative research as well as economic research.

| Quantitative social research | Qualitative social research | Design Thinking in social research | Economic research | Statistical analysis |

Quantitative social research

- Traditional paper survey (PAPI – Paper and Pencil Interview), telephone survey (CATI – Computer Assisted Telephone Interview), online survey (CAWI – Computer Assisted Web Interview), survey with the use of tablets (CAPI – Computer Assisted Personal Interview)
- Quantitative analysis of existing data (Desk Research)

Analytical quantitative methods used by DBA: exploratory data analysis, statistical methods, data mining.

Qualitative social research:

- Case study
- Individual interview (IDI)
- Focus group interview (FGI)
- Expert panel
- Delphi method
- Observation
- Qualitative documents analysis

Analytical qualitative methods used by DBA: iterative inductive approach, content analysis, semantic analysis, discourse analysis, conceptual maps, comparative analysis, conversational analysis.

Design Thinking in social research:

Design Thinking – generating solutions in response to set design problems, defining problems, analysing of functional needs of people depending on contexts.

Creative workshops in the area of prototyping and testing of developed models of processes, services or products.

Economic research:

- cost analysis (break-even point, economic leverage, financial liquidity, profitability, indebtedness, operational efficiency, dynamic investment assessment)
- forecasting methods: mathematical-statistical (deterministic, econometric), non-mathematical (questionnaire, expert opinions, analogies, Delphi, etc.)
- risk assessment methods (techniques: break-even, statistical)
- methods of competitive advantage of companies (business plan, key success factors, benchmarking)
- methods of strategic analysis

| strategic balance	SWOT analysis	ADL matrix	BCG matrix	structural analysis of a sector

Statistical analysis:

Basic analysis: calculation of correlation (to what extent are variables dependent?), tables of cardinality and distribution (distribution of features in the sample), descriptive statistics (quartiles, average, standard deviation, giving the first insight into data characteristics), adjusting distributions (estimating parameters allowing the study of variable distributions), linear regression (selection and diagnostics of the model) - study of linear dependence, comparison of two tests (t test, Wilcoxon test), test power analysis.
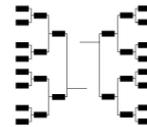
The most commonly used advanced methods:

- comparing multiple samples (ANOVA / ANCOVA, Friedman test)
- generalized linear models (logistic regression, Poissonian regression)
- Multiple Regression (Ridge, Stepwise regression)
- Regression and classification trees (C&ART, CHAID)
- Random Forest
- Clustering/Cluster analysis (agglomerative, k-means) PCA and Multidimensional scaling (MDS)
- Neural Networks

In pursue of high quality of research relevancy (adequacy and precision of empirical indicators) and reliability (repeatability of the research process) are key factors in the design of each research process.

Selected examples of completed services and research projects

2017

- Statistical analyzes for the project "The influence of characteristic ventilator parameters on human thermal sensations in individual ventilation systems"
- Statistical analysis of data collected as part of a scholarship program awarded by the Capital City of Warsaw named after John Paul II in the years 2008-2017
- Determining the reasons for selecting the bootcamp as a form of acquiring new skills
- Social research for the Faculty of Mathematics and Information Science for the needs of national accreditation
- Needs and expectations of young Polish scientists related to professional research career development
- Confidentiality - analysis of the legal issue for the needs of the Warsaw University of Technology

2016

- Research on social awareness of sustainable architecture and the needs and possibilities of sustainable design. Research within the project: Architecture for Society of Knowledge ASK – English-speaking doctoral course at the Faculty of Architecture, Warsaw University of Technology
- R&D market in Poland
- Methods supporting the development of innovation, entrepreneurship and creativity of students in education in the field of industrial design
- Monitoring of careers of WUT graduates: year 2014/2015 (examination up to one year after graduation)
- Research on the training needs of WUT employees - 2016 edition
- Benefits of the Warsaw University of Technology from cooperating with clusters
- Identifying ways of creating programs supporting innovation and entrepreneurship at the Warsaw University of Technology
- Public consultations of the Innovation Incubator of CZIiTT
- Evaluation of the conference "Science, business and the environment. GEO-6 report for the Pan-European region"
- Research exploration "Level of interest in Virtual Reality and Augmented Reality"
- Study of the experiences of users of the website (commercial research)
- Survey of customer and user opinions on products (commercial research)
- Diagnosis of factors relevant to the implementation of the research agenda in a project submitted under the Regional Operational Program of the Mazowieckie Voivodeship

2015

· Analysis of global trends in education in the field of creativity, entrepreneurship and innovation
· Research on the needs and expectations of enterprises in the field of technology transfer as part of cooperation with the Warsaw University of Technology
· Business environment institutions in the Warsaw agglomeration
· Exploratory search for main social study in the project Architecture for Society of Knowledge ASK – English-speaking doctoral course at the Faculty of Architecture, Warsaw University of Technology
· Analysis of self-assessment of units within the Quality Assurance Scheme of the Warsaw University of Technology - 2014
· Infrastructure of the New Technologies Campus - research exploration
· Design Thinking as an innovation in creating links between the university and the economy

Contact us!

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