

IT Faculty Collaboration with Business and Industry: Ventspils Experience

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Abstract:

There are several reasons why the role of IT faculties of universities in modern business and industry will be the subject of intensive investigation for at least several next years. First, this question is important for universities and faculties, for their development strategy, for possibility to attract necessary additional financial and human resources for development. Second, this question is important for business and industry because of possibility to receive access to university intellectual potential and new ideas, which can be implemented in new products and services. Third, this question is important for the state and society because of the new challenges, related with necessity to ensure development of knowledge-based economy, support innovative business, ensure the international state competition ability, globalization. At present time discussions about cooperation between IT faculties and industry are concentrated around the questions, related with possible models of organizational structure of such cooperation, forms of ownership, financial relations between participants, common projects management, personnel, main areas of activities, marketing. A lot of questions are not common for universities as academic institutions, and this is the main reason, why the exchange of experience between IT faculties is necessary for success in collaboration with business and industry. This question was considered at ECSS 2006 and here we would like to add the previous consideration with the description of experience of Ventspils University College.

To ensure effective collaboration with business and industry IT faculty of Ventspils University College created special research unit - Engineering Research Centre (ERC). The Centre is registered as scientific institute in the Latvian Scientific Institutions State Registry. The main aim of the Engineering Research Centre is to provide high level services in applied sciences to the companies and to promote ICT sector scientific technological potential development in the region.

The operations of Engineering Research Centre are close related with educational and scientific work of Ventspils University College. The tasks of the Centre are:

- to develop new products for Latvian and foreign companies involved in ICT and electronics;
- to promote new or existing products, and to bring them into production;
- to perform applied research in ICT, mathematic modelling, electronics and related areas;
- to perform research in applied information technologies and prepare masters and doctors degree specialists;
- to participate in the realisation of bachelors, masters and doctors degree studying programmes in IT, physics, mathematics and IT fields.

There are four applied research departments in the Centre.

Department of Telecommunication products development. The main task of the department is to collaborate with universities from Latvia and EU in elaboration of new education programmes and courses, as well as to collaborate with production companies from the Baltic States and EU in the development of new services and products in voice and data transfer, and development and verification of new, sophisticated systems. The main collaboration opportunities and services of the Telecommunication products development department are:

- development and implementation of telecommunication, data transfer network and computer system hardware and software projects (installation, configuration, adaptation, testing and programming), diagnostics of problems, elimination of problems and technical support;
- measurements and measuring equipment services (measurements of voice and data transfer network interface, protocol analysers);
- software development for call centres.

Department of Applied Electronics and Bluetooth. The department carries out the development of Bluetooth products and testing of electronic and electrical engineering products by using its Bluetooth and applied electronics equipment and software. The department provides the following services:

- provision of wireless communication networks and development of communication services;
- M2M (machine to machine) data exchange;
- non-standardized remote control solutions;
- interface for data access from mobile devices.

Department of Mathematical modelling. The department of Mathematical modelling deals with modelling of industrial set-ups, economic and business processes. The department provides the following services:

- economic and business process modelling ;
- industrial process modelling ;
- numerical modelling and problem solving of industrial set-ups;
- estimation of construction and building safety and accident prevention;
- estimation of load and impact on non-standardized marine constructions (wave-breakers, moles);
- financial risk mathematic modelling, financial risk assessment.

Department of CAD/CAM. The aim of the department is to develop innovations in entrepreneurship, based on state of art information Technologies. The department of CAD/CAM designing provides innovative services with high added value in:

- designing of 3D components and composed matters;
- analysis of prototype and component geometry;
- designing of electronic schemes;
- 3D analysis of pressed motherboards in the context with its constructive and mechanical elements.

One of the main ERC advantages is the close collaboration with partners - Technology Transfer Centre of Kurzeme (TTCK), Ventspils High Technology Park (VHTP), Business Incubator (BI).

TTCK was created in 2005 with financial support of Ministry of Economy and it offers the following services:

- Assistance to high-technology enterprises in the technology transfer on international markets.
- Executing the complete set of technology export actions.
- Informative support to the enterprises and organizations.
- Patent protection of intellectual property (searching for analogs and prototypes, executing the patent applications, etc.)

VHTP was established in Ventspils to create favourable environment for high technology companies specialising in ICT, electronics, machine engineering, industrial automation. VHTP has an excellent location in a designated area of special economic zone offering the tenants an opportunity to use notable investment incentives. Companies like "Ventspils elektronikas fabrika", "Siemens" and "Inspecta Latvia" have chosen VHTP for their operations. Modern laboratories in electronics, computer aided design and rapid prototyping are provided by ERC. VHTP offers a full range of services to hi-tech companies starting or developing their business in Ventspils:

- Designing and building of state-of-art industrial and office buildings, as well as necessary engineering communications and access roads. Necessary investments provided by VHTP.
- Business management support services including assistance with initial team building and headhunting. Training programmes for engineers and technicians in close co-operation with local training institutions.
- Business incubation - Ventspils Business Incubator supports young and developing companies providing fully equipped office space and business support services on subsidised conditions.

The experience of IT faculty of Ventspils University College in collaboration with business and industry is based on the attempt to create EPC as research unit and integrate it into ITC cluster with strong collaboration between universities, industry, municipality and state.