

Guntars Balodis,  
Professor, Dr.sc.ing.,  
Riga Technical University, Faculty of  
Electronics and Telecommunications.



## Information Technology and Telecommunications in Latvia

Information and Communication Technology (ICT) area along with biotechnology, material science, forestry and chemistry are among the most promising areas of development in Latvia. It has its roots in deep engineering, industrial and intellectual tradition dating back to the late nineteenth century when Latvia was a hotspot of electro-technical research and manufacturing. The legendary VEF Minox miniature camera is the best known Latvian invention. Recent developments in ICT have been guided by the national ICT development program accepted in 1998 and renewed in 2006. The main goal of this program has been movement towards information society and knowledge based economy including attaining high levels of computer literacy, ensuring a high level of accessibility to information resources, providing efficient electronic services and establishing ICT as a major enabler of both economic and social welfare of the Latvian society. Planned government investment in ICT for the period between 2007 and 2013 is 367 millions EUR. The program is based on previous achievements (e.g. high level of computer and Internet availability, computerization of schools) and aims at catching-up in lagging areas, for instance, e-commerce still has enormous growth potential with expected two-fold increase of the number of companies involved in electronic transactions by 2013.

An efficient network of organizations supporting innovation in the ICT area has been established. From the government side, it is championed by the Latvian Investment and Development Agency (LIAA). LIAA surveys current trends in the ICT field, consults companies in their search for partners as well as provides funding for innovative ICT projects. There are also several professional associations. The Latvian Information and Communications Technology Association, Latvian Electrical Engineering and Electronics

Industry Association, Latvian Telecommunications Association, Association of Computer Technologies of Latvia, Latvian Internet association and Latvian Open Technology Association are some of the main professional bodies. The Latvian IT Cluster specifically focuses on fostering innovation and increasing competitiveness of Latvian ICT companies.

The Latvian ICT industry is characterized by great diversity and synergetic opportunities both vertically and horizontally. Since 2003 the ICT industry has grown by astonishing 19% annually and has shown remarkable resilience during the downturn. It contributes 6% to Latvian GDP even though its impact goes well beyond the direct contribution. 30 to 40% of ICT products and services are exported. Latvian companies are especially strong in financial applications, telecommunication and signal processing equipment, e-services and business process optimization services. They have strong experience in bringing together Western companies and companies from Eastern Europe and Asia. Latvian companies have developed such products as Mobile ID, multi-media based e-learning solutions, translation tools and microwave link solutions. Integration of software, hardware, communications, knowledge and supporting services is a characteristic feature of these products.

Latvian mobile communications market is highly competitive with three major players LMT, Tele2 and Bite, and multiple niche service providers. 2.5G and 3G mobile communication networks cover the whole country, and wireless internet access points are widely available. An optical fiber infrastructure with 10 Gbps transmission rate and connections to Baltic States, Scandinavia and Russia is developed. The largest telecommunications company Lattelecom provides solutions for optical and wireless broadband over 200 Mbps as the last mile access service. We have offered EMC test solutions for the designed electronics equipment in a



Janis Grabis,  
Professor, Dr.sc.ing.,  
Riga Technical University, Faculty of  
Computer Science and Information  
Technology,

frequency range from 30 MHz till 20 GHz. This year Latvia will be fully covered with terrestrial DVB-T broadcasting. Development of next generation access (NGA) networks as a replacement for existing communications access networks is under way. That will provide unlimited broadband services. The University of Latvia and the Riga Technical University participate in the BalticGrid project, which provides access to more than a hundred processors strong grid computing facilities. The project is a part of the Europe-wide grid.

The Latvian ICT industry is a healthy mix of local companies and large multi-nationals. All major companies including IBM, Microsoft, Siemens, Accenture, Agilent, Rohde&Schwartz, Tektronix and Oracle are present in Latvia. This provides great networking opportunities, and there are several ongoing initiatives on establishing technology and innovation parks. Latvia will bid to become a home country to the Board of European Regulators for Electronic Communications (BEREC).

The ICT industry draws its strength from its collaboration with Latvian educational and research institutions. The Riga Technical University with about 750 ICT graduates annually is the largest school followed by the University of Latvia with about 200 graduates in computer science. A number of regional schools additionally produce around 200 graduates a year. Latvian researchers are well-known internationally with their developments in quantum computing, artificial intelligence, simulation, process modeling and signal processing. Major scientific conferences such as ISD, CAISE, ADBIS, IEEE sponsored events and Baltic DB&IS have taken place in Latvia and others will be organized in the future.

The Latvian ICT industry has established a cost efficient, quality and innovation oriented business model, and it is ready to embrace future challenges in developing end-to-end business optimization solutions. It provides a unique blend of business sense, technical expertise and responsibility, and

costs are well-balanced with productivity and quality. Educational institutions provide constant stream of talented ICT specialists. In the future, the Latvian ICT sector strives to continue its multi-dimensional development path, which is essential for maintaining a relentless speed of expansion and discovering new cross-sectional end-to-end solutions. Our vision for Latvia is it becoming a centre where hi-tech companies from throughout the region can meet, co-operate and develop their businesses. At this time, Riga already presents a convincing case that it is becoming a significant economic centre not only in the Baltic States, but in the whole Baltic Sea region. A significant factor is its ideal geographic location, excellent infrastructure and human networks linking East and West: the European Union, Russia and China.

Guntars Balodis,  
Professor, Dr.sc.ing.,  
Riga Technical University, Faculty of Electronics  
and Telecommunications.

Janis Grabis,  
Professor, Dr.sc.ing.,  
Riga Technical University, Faculty of Computer  
Science and Information Technology,