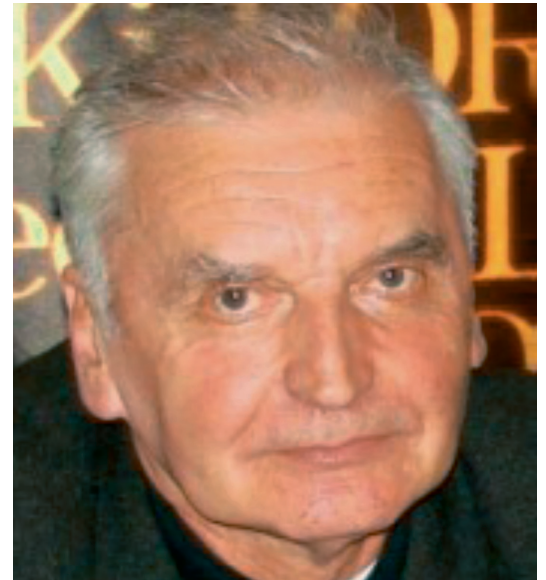Jānis Grundspeņķis,
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Information Technology and Telecommunications in Latvia

The 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 is rooted in the 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 the 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. The planned government investment in ICT for the period between 2007 and 2013 is 367 millions EUR. The program builds on previous achievements (e.g., high level of computer and Internet availability, computerization of schools) and aims 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.

The 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. In 2010, Latvian ICT companies established a company "IT Competence Center", which is aimed at promoting long-term collaboration between industry and research institutions. Research and knowledge transfer projects will be selected on the competitive basis and will be jointly funded by private entities and government. The current main research directions are natural language processing and business process management tools. The Latvian ICT industry is characterized by great diversity and synergetical 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. Latvia is well-suited for nearsourcing due to availability of ICT professionals, shared cultural background with its neighbors and convenient location as most of Central, Eastern and

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Northern Europe lies within two hours flying time. Latvian companies have developed such products as business process and software modeling tools, 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. The Latvian companies also provide data storage and cloud computing services.

The Latvian ICT industry is a healthy mix of local companies and large multi-nationals. All major companies including IBM, Microsoft, Siemens, Accenture, Tieto, and Oracle are present in Latvia. That 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 (RTU) with about 250 ICT graduates annually is the largest school followed by the University of Latvia (LU) with about 200 graduates in the computer science. A number of regional schools additionally produce around 200 graduates a year. Young professionals are trained to have a broad range of skills, and they have ability to quickly adapt to changing technologies and industry needs. Universities are expanding collaboration with industry including participation in the SAP University Alliance (RTU) and in the Microsoft Academic Alliance (several Latvian universities) and establishing the joint Applied Research and Education Center with IBM (RTU). 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, BIR, IEEE sponsored events and Baltic DB&IS have taken place in Latvia and others will be organized in the future. In order to modernize research infrastructure and to promote further research activities, Latvian Research Center in Information, Communication and Signal Processing Technologies has been established in 2011. The center is established by leading Latvian ICT research institutions and universities, and it is partially funded by the European Union. It will serve as the basis for ICT research in Latvia.

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. The educational institutions provide the constant stream of talented ICT specialists. In the future, the Latvian ICT sector strives to continue its multi-dimensional development path what is essential for maintaining the relentless speed of expansion and discovering new cross-sectional end-to-end solutions. Our vision for Latvia is 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.

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