

Lahti Software City: Evidence of Regional Development in IT & Software Industry

Damian Kedziora¹, Roosa Pipatti¹ and Sonja Hyrynsalmi¹

¹ LUT University, Mikkulankatu 19, 15210 Lahti, Finland

Abstract

The IT & Software industry in Finnish region of Päijät-Häme has experienced significant recent growth, driven by the modernization of traditional sectors through the adoption of top modern technology. Our research, based on surveys, interviews, and public data analysis, discusses the current state of the industry in the district of Lahti. With a rising number of software engineering graduates, the region has the potential of becoming a major hub for new IT professionals. Educational institutions offer diverse expertise paths, aligning with industry needs and regional tech advancement. Challenges include technical expertise, skills training, business understanding, resource availability, team dynamics, and leadership. Support is crucial for operating model enhancement, technology networking, value chain creation, and collaborative research funding. Priorities include promoting gender equality and encouraging more women in IT careers. Cooperative projects, key player involvement, marketing the region's IT strategy, and fostering digitalization are essential for sustainable growth.

Keywords

Lahti, Päijät-Häme, Region, Industry, Growth, Education, IT, Software

1. Introduction

The region of Päijät-Häme is emerging as a significant educational hub for software engineers in Finland. The information technology (IT) sector here is experiencing rapid growth and innovation, employing over 1,000 professionals [4]. According to Gartner [1], IT can be defined as *"the entire spectrum of technologies for information processing, including software, hardware, communications technologies, and related services. In general, IT does not include embedded technologies that do not generate data for enterprise use"*. The Lahti region already hosts key market players and has the potential to become a pivotal IT services hub in Finland. Local educational institutions offer degree programmes in Computer Science and Software Engineering that have received over 1,000 applications from prospective students, proving the high demand for IT education. Many companies are investing in IT trainings to adapt to modern technologies. However, the positioning of IT experts and companies in the region is still fragmented. Information about the actors is incomplete, and there are limited networking opportunities for experts in the field. Additionally, as digitization and servitization expand, companies outside IT sector also require experts in the field. The Lahti region's IT industry still faces challenges, which we aimed to identify in our research. Hence, our study aimed to explore the current state of IT and Software Industry in Päijät-Häme region, its prospects, challenges, and future opportunities.

Our study was part of the Lahti Software project funded by Päijät-Hämeen Liitto (A78785). Our primary data were obtained by conducting anonymous surveys among IT companies, as well as qualitative interviews. The first survey was sent to a selection of the biggest IT companies in Finland (225 companies contacted, of which 20 responded), regarding their activities and personnel in the Päijät-Häme region. The second survey was sent to companies from the region classified as IT-related (141 companies contacted, 36 responded). The survey scenario was developed in line with the aims of the project and gaps in current understanding of the IT industry

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✉ damian.kedziora@lut.fi (A. 1); roosa.pipatti@student.lut.fi (A. 2); sonja.hyrynsalmi@lut.fi (A. 3)

ORCID 0000-0003-2021-6661 (A. 1); 0009-0001-6049-7229 (A. 2); 0000-0002-1715-6250 (A. 3)



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of Lahti region, getting solicited from the Finnish Trade Register based on classification codes. We chose and quoted the latest available data on each category. In addition, we conducted a few qualitative interviews with leaders from the companies in the region who wished to participate in our research discussions. The data got interpreted by the project group with consensus. Our secondary data analysed included compounded sources from the Finnish Statistics Office, Education Statistics Finland, Company Trade Register, Finnish Tax Office. Regarding the approach to data analysis, both quantitative and qualitative methods were applied.

2. IT & Software Community in Lahti

The IT community in Lahti region is diverse, including small start-ups focused on IT services to mid-sized companies specializing in IT and tech solutions. Additionally, there are IT experts employed in companies with different core business areas, where IT constitutes just one element of their operations. In terms of company size, most participants in the study were associated with small and medium-sized companies. Larger companies with more than 50 employees were less represented. The study revealed that most of respondents worked in organizations where IT was the primary focus, indicating a significant emphasis on IT-related activities. However, some participants were part of companies with different core business orientations. The region contains a workforce of over 1,000 IT professionals and more than 500 IT technicians [4]. However, there is a gender imbalance, with most IT professionals and technicians being males. As found in our survey, experts in the region possess a wide range of competencies and work with a diverse set of tools and technologies. Notable technologies include MS Azure, .Net, JavaScript, React, WordPress, Python, C#, Linux, and PHP. These are widely adopted and have a strong reputation for quality, efficiency, and security of solutions. IT community in Lahti region is gaining recognition for its capabilities, challenging the stereotype that expertise is concentrated in the capital area of Helsinki. They compete based on cost, quality, and agility in their implementations, benefiting from lower overhead and office expenses. Hence, the region's IT professionals and organizations are well-equipped to deliver high-quality IT solutions.

3. Growing IT Region of Lahti

The Finnish IT market is experiencing rapid growth [3], and Lahti region is strategically positioned with advantages over neighbouring regions. It offers rich industry and business traditions, closeness to the capital area, a substantial labour market with many IT professionals, and a favourable income-to-cost ratio. In terms of key macroeconomic indicators, Päijät-Häme has a workforce of over 80,000 employees [4], with the potential to become a significant export value. While its GDP remains behind neighbouring regions, strategic focus directions can boost economic growth, especially in the evolving IT sector. Lahti region is strong in terms of taxable income, reflecting favourable conditions for residents' finances.

As discovered at our research, the top tech trends in the region include focus on education, digitization, AI, and the growth of the gaming industry. Networking, collaboration, education, sustainability, and remote work opportunities are considered pivotal for the region's development. Improvement areas include leveraging local companies' international competitiveness, enhancing networking and visibility, and fostering talent attraction. Empowering businesses, promoting digitization, and facilitating access to decision-makers are identified by our research as crucial steps for supporting the IT business in Lahti district. In summary, Päijät-Häme's IT community is thriving, offering a competitive edge over neighbouring regions, and there is a collective drive to enhance the region's IT industry further.

4. Lahti Software Education

In Lahti region, a variety of IT education options are available through institutions like LUT University, LAB University of Applied Sciences, and Salpaus Further Education. These

opportunities provide training to equip students with skills necessary to tackle real-world challenges in their specific domains. The educational offerings presented below offer an enticing prospect for both young individuals entering the job market, as well as experienced professionals seeking to retrain and transition into IT-related careers.

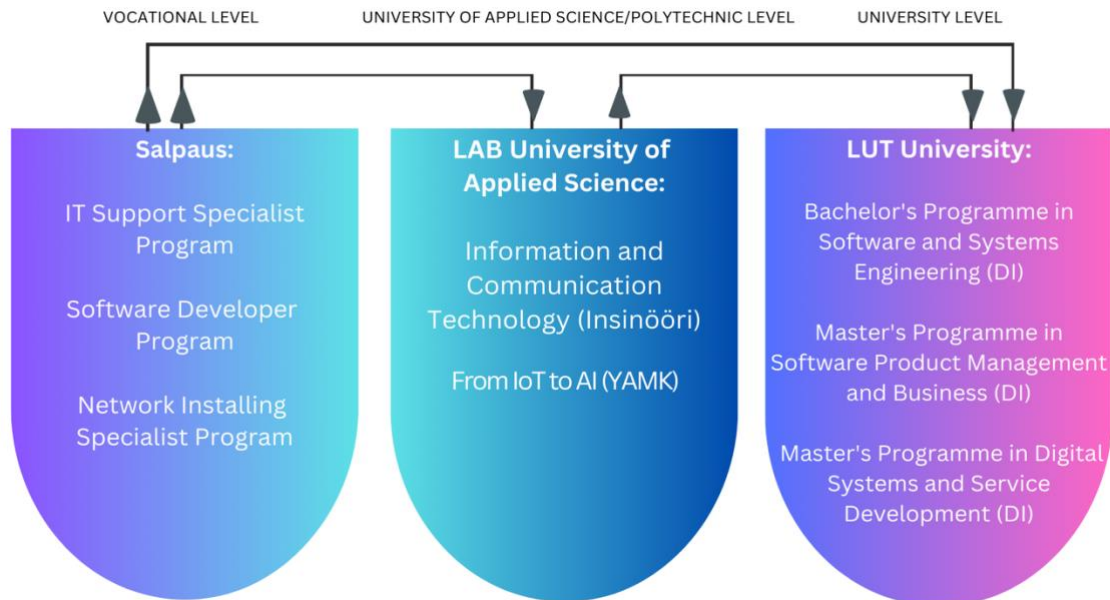


Figure 1: Local educational institutions and IT education paths.

5. Lahti Software Companies

The IT companies in Lahti region prioritize business expansion, workforce development, and internationalization. They expressed strong ambition for organic business development and revenue growth. Organizations have diverse workforce, with a focus on international communities, and most employees are interns or juniors, reflecting the industry's growth. Companies operate in a hybrid work model with a shift toward flexibility and remote work. They prefer to recruit rather than establish new offices in the region. Challenges include talent acquisition, cybersecurity, market competition, business expansion, and cost management. Players need support for business model improvement, research collaboration, workforce development, and guidance for skills and internships. As mentioned by one responder: *"We need stronger building of IT hub, together with institutions like LUT and Ladec that would make it possible for companies to connect and build the IT future together. We need to constantly challenge ourselves and try to find our new strategic focus, so that we can have in the future some famous technological innovation or service that would be the label or specialty of Lahti, and all the companies can build an ecosystem around it"*[2]. These findings provide insights into the region's IT community, highlighting challenges and areas companies require support for future success.

6. Conclusions

As summarized at the below Illustration, our research shed a light at Päijät-Häme region, with Lahti city being on the path to becoming an IT & Software hub of the future, driven by a growing number of locally educated IT professionals. It presented strategic opportunities for development, with potential to uplift the local economy and society. Competitive purchasing power, expanding IT programs, and a diverse local IT industry make the region promising. Challenges faced by IT companies include attracting talent due to regional attractiveness and salary levels, limited client reach, and infrastructure constraints. Geographical location,

reputation, and resource availability also pose obstacles to growth. Gender equality in the IT community needs attention, and there are recruitment challenges concerning specialized skills and business acumen. While our study provides practical insights, it has limitations. The findings are based on a specific subset of companies and may not fully represent the entire industry. A larger sample and periodic studies could offer a more comprehensive view. Despite these limitations, the identified support needs among companies emphasize the importance of technological advancements, collaboration, research, customer insights, talent acquisition, and development efforts. Community avenues, including startup assistance, educational collaborations, global marketing, and tailored training programs, are vital for fostering growth in the IT sector. By addressing challenges and embracing opportunities, Lahti's IT industry can contribute to regional growth, economic progress, and overall prosperity.



Figure 2: Overview of Software & IT Industry in Päijät-Häme region in 2023.

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