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**BULLETIN**

# **SWEDEN'S INNOVATION POWERHOUSE:**

## **INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)**

**In this bulletin you will find:**

- An overview of the ICT sector in Sweden
- Potential to collaborate
- Deep dive into emerging technology areas in Sweden
  - » Artificial Intelligence (AI)
  - » Fintech
  - » Internet of Things (IoT).

# INTRODUCTION

Sweden is recognized as a global leader in innovation. Sweden's investment in education and its innovative culture are seen as major strengths. Sweden dedicates over 3% of its GDP to research and development (R&D) and consistently ranks high in the Global Innovation Index (2nd place in 2023). Also, Sweden actively supports technology startups and small businesses with significant annual investments exceeding 1.5 billion SEK, they have comparatively good access to capital. Sweden has produced 41 "unicorn" startups. In total, Swedish startups are now worth a combined €239 bn.

It thrives on a unique blend of public-private collaboration, with strong ties between universities, industry giants, and the government. This "triple helix" approach fosters knowledge exchange and resource sharing. Additionally, Sweden prioritizes a highly skilled workforce and boasts a robust digital infrastructure, creating fertile ground for innovation that is considered to be one of the strongest in Europe. This focus on collaboration and infrastructure distinguishes Sweden from other European innovation ecosystems.

This bulletin dives deep into the Information and Communication Technology (ICT) industry in Sweden. It leverages both publicly available information and internal sources, along with insights from interviews with field experts.

First, we'll provide a comprehensive overview of the Swedish ICT industry, highlighting the potential for Lithuanian businesses to collaborate and expand into this market. We'll then shortly explore three emerging technology areas that are particularly strong and important for Sweden within the ICT sector: Artificial Intelligence (AI), Fintech, and the Internet of Things (IoT).

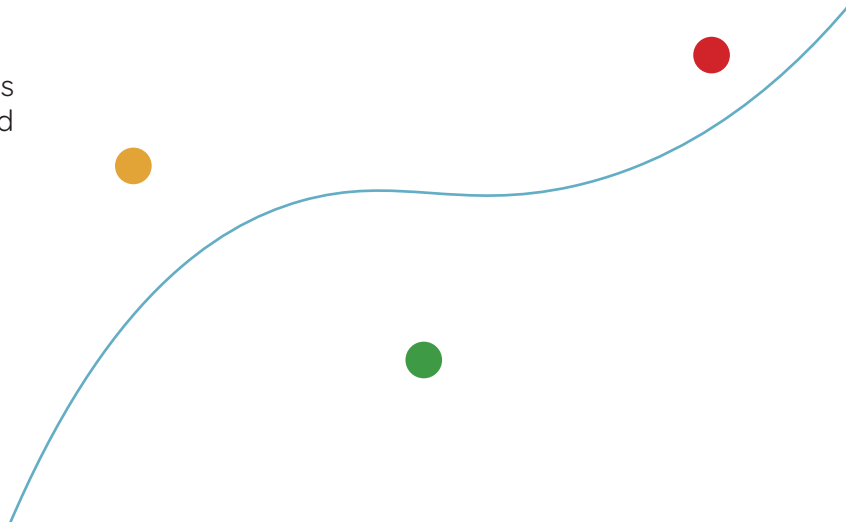
For each area, you'll find concise information on the market, current trends, key actors, challenges, helpful tips, and relevant online resources.

Certainly, there are other interesting and impactful ICT application areas and technologies in Sweden such as gaming, blockchain, smart mobility, or robotics. If there is an interest expressed, we may review them in other bulletins.

We hope this bulletin inspires you and equips you with valuable ideas to develop or expand your business in Sweden.

**In our upcoming bulletins, we'll be turning the spotlight on four innovative industries that are crucial for the Lithuanian innovation system and export landscape:**

- Information and Communication Technology (ICT)
- Life Sciences
- Engineering
- Smart Food.



# INFORMATION AND COMMUNICATIONS TECHNOLOGY - ICT

Sweden is one of the most technologically advanced countries in the world and the birthplace of many well-known global tech brands in various sectors. To name a few that take a leading role in the world: Spotify, Skype, Ericsson, Electrolux, Truecaller, µTorrent, Klarna, Mojang, King, among others.

The digital technology ecosystem is a prevailing player in Sweden. According to statistics, more than 250 thousands people in Sweden are directly employed by ICT companies, the highest share in Europe. The sector accounts for nearly 6% of Swedish GDP, with forecasts predicting an annual growth rate of nearly 9%. In fact, Sweden is one of the strongest and most competitive ICT services providers in the European Union, with a particular emphasis on open-source technologies. The Swedish ICT outsourcing market is one of the largest in Europe and accounts for more than half of the Swedish ICT revenue.

Sweden's Digital Strategy aims at five priorities: digital literacy, digital security, digital innovation, digital leadership, and digital infrastructure. Currently, the importance of digitization, collaboration and innovation for sustainable development and global competitiveness is strongly emphasized in public arenas such as a recent Almedalen.

Very fresh news – Swedish Innovation Agency Vinnova launches an Impact Innovation initiative - the next generation of strategic innovation programs that will contribute to competitiveness and the transition to a sustainable society. The programmes include various goals, such as that industry should reduce greenhouse gas emissions by 75 % and that the public sector needs to be reformed.



Image by F. Sandbeg, Getty Images

Sweden is characterised by strong focus and tradition on building cross-sectoral partnerships among technology companies, research institutions, and governments, which together with the growing investments are fuelling innovation and driving growth in the ICT industry.

There are strong clusters established to promote ICT innovations and test beds in real environments such as Kista Science Park, among Urban ICT arena, and numerous Science Parks (Ideon, Blue, Luleå, Lindholmen, Linköping, and more), which together employ over 60,000 employees and more than 2,400 companies.

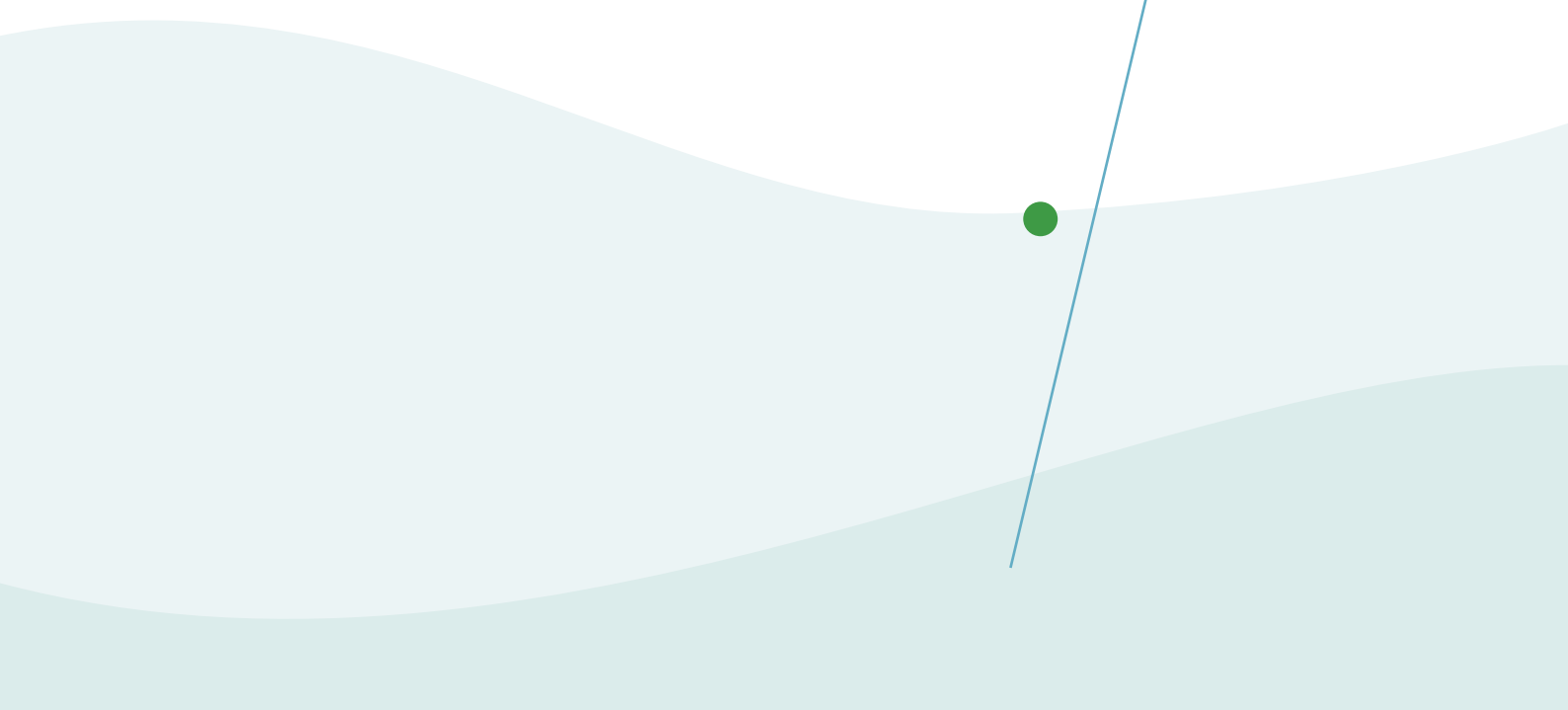
Even though the government has significantly reduced funding for research and innovation that especially affects innovative startups, there is a vibrant ecosystem of various hubs, initiatives and partnerships that support entrepreneurship, startups and innovation, to name a few: Techarenan, Ignite, Sup46, Innovation Pioneers, ALMI, Women in Tech, Startup Sweden, Invest Sweden, and more.

Despite the fact that Sweden has come a long way, some big challenges still remain. The availability of large amounts of data is growing rapidly and the need for processing and analysing these is becoming increasingly important. The growing challenges are cybersecurity risks and the lack of IT skills. Additionally, high taxes and a small market size are notable obstacles, but the ease of access to capital, strong educational foundations, and a supportive ecosystem foster a thriving tech industry.

*“We need to accelerate sustainability, resilience and security in all parts of society. Innovation is needed in terms of how we produce and consume everything from food to housing. New technology creates fantastic opportunities in all areas, but to succeed also requires new business models and regulations, collaborations and ways of working.”*

*Darja Isaksson, Director General of Vinnova*

Source (2024.06.30):  
<https://lnkd.in/dduKKnTa>



# HIGH PROSPECTS FOR LITHUANIAN FIRMS TO EXPAND TO SWEDEN

- Sweden offers a formidable ICT ecosystem, with resilient, low-carbon digital infrastructure, the highest levels of network and technology readiness in the world, and experienced investors. Additionally, most Swedes are proficient in the English language.
- The entire ecosystem of ICT companies is very competitive, yet also conducive to new entrants via created infrastructure and available VC funding and support by many knowledge hubs.
- Besides, public data is openly shared and accessible to businesses.
- Nearly half of large Swedish companies invest in in-house software development, so there is much room for growth in enterprise software sales.
- The need for Front End developers is great among web agencies, communication agencies and among IT consultants, but also among companies in other sectors.
- Apart from this, there is high demand in skills and support provided by ICT architects, analysts, software engineers, software developers, and system engineers.
- Opportunities open up for IT service providers in the field of sustainability innovation due to ever increasing EU regulation that addresses large companies and their supply chain in particular. Technologies and IT services are in demand to help businesses deliver on sustainability goals.
- Cloud computing in Sweden is considered to be more advanced than in Germany or France. It has been growing rapidly and in combination with new business models of SaaS, PaaS and IaaS, AI, ML. This opens door to serve Sweden's small and medium sized enterprises to increase ICT usage.

- As a whole, the market is highly competitive and focused on testbeds developing AI, cybersecurity, gamification, fintech, cloud computing, mobility/transport tech, robotics and other fields, all of which build a high demand for skilled labour and many unfilled positions for ICT specialists.
- Swedish customers have a very high standard for quality both in terms of IT products as well as services. Larger companies select services providers with certifications from international bodies such as ISO.
- In summary, Lithuanian ICT companies can tap into significant opportunities in Sweden shaped by the early adopter culture, tech-savvy consumers, ready infrastructure, and a familiar business environment.

## TIPS

### **Where to look for partners:**

- *Exhibiting at IT Trade Fairs or attending IT related conferences can be a good way to find contacts.*
- *Some of the major IT events include: CS3STHLM Expo, Devopsdays Stockholm, MicroSoft Tech Days, IP EXPO Nordic, Business Technology Show, WEBBDAGARNA Stockholm, I Gaming Forum, Devsum, 600Minutes Executive IT.*

## EMERGING TECHNOLOGIES

New emerging technologies such as Internet of Things (IoT), Artificial Intelligence (AI), Machine Learning (ML), Blockchain, Fintech, Cloud, Big Data, etc. have seen tremendous growth during recent years.

Below you will find a short review of the new ICT areas that are prioritised in the Lithuanian Innovation Strategy. The highlighted challenges in each area provides thoughts on opportunities for Lithuanian companies to help to close those gaps.



# ARTIFICIAL INTELLIGENCE – AI

Sweden is investing heavily in AI capabilities. According to Statista, the Swedish AI market size is expected to show an annual growth rate (CAGR 2024-2030) of 28.08%, resulting in a market volume of 5.2 bn EUR by 2030 (1.18 bn EUR currently).

Nordic State of AI report 2024, which compiles answers from the largest companies, note that over 40% of respondents plan to invest between 0.5 and 2 M EUR in AI during 2024, while 20% expect to invest up to 10 M EUR in 2024. For the first time a greater focus is on training existing staff rather than recruiting new talent. However, enterprises have security and deployment doubts.

## TRENDS

One of the current trends in the artificial intelligence industry is the increasing use of AI in healthcare, particularly in areas such as disease diagnosis, drug development, and personalized medicine. Another trend is the use of AI to improve customer service and support, such as through chatbots and virtual assistants. The development of AI chips and edge computing is also a growing trend, enabling more efficient and powerful processing of AI applications. Finally, the integration of AI with other technologies, such as blockchain and the Internet of Things, is expected to continue to drive innovation and growth in the AI industry.

## ACTORS

There is a growing number of AI hubs and centers that provide various levels of support.

**RISE**, Sweden's national research institute, hosts the Center for Applied AI, which includes 50 researchers and a network of over 70 AI ambassadors, focusing on key AI areas. Coordinating the AI Agenda for Sweden, RISE engages civil society, academia, government, and industry leaders to make Sweden a leader in responsible, inclusive, and sustainable AI. The aim is to foster an ecosystem that promotes innovation, upholds ethical standards, and prepares for future possibilities, ensuring Sweden's leadership in sustainable and secure AI advancements.

**The Wallenberg AI, Autonomous Systems and Software Program (WASP)** is Sweden's largest individual research initiative, funded with 546 M EUR, of which 430 M EUR is donated by the Knut and Alice Wallenberg Foundation. WASP focuses on strategically motivated basic research, education, and faculty recruitment, specifically targeting artificial intelligence and autonomous systems that interact with humans, adapt to their environment through sensors and information, and form intelligent systems-of-systems.

**AI Sweden, the national center for applied AI**, connects over 130 partners from the private and public sectors and has attracted over 17.6 M EUR in investment, primarily from Vinnova. With around 70 employees, AI Sweden aims to accelerate AI adoption through projects and courses, utilizing its Data Factory to provide partners access to data, computing power, and storage. AI Sweden's AI Strategy offers a framework to guide decision-makers across sectors. The center supports AI development and practical operationalization through international and cross-sectoral partnerships, emphasizing the need for governmental support for larger-scale collaborations and for meeting societal needs.

***"In 3 years AI Sweden aims to make impact:***

- *AI is utilised for solving societal challenges;*
- *AI is applied in more sectors and categories ;*
- *Secure AI leadership of Sweden."*

*/Susanne Fuglsang, Ecosystem & Partner manager - AI Sweden*

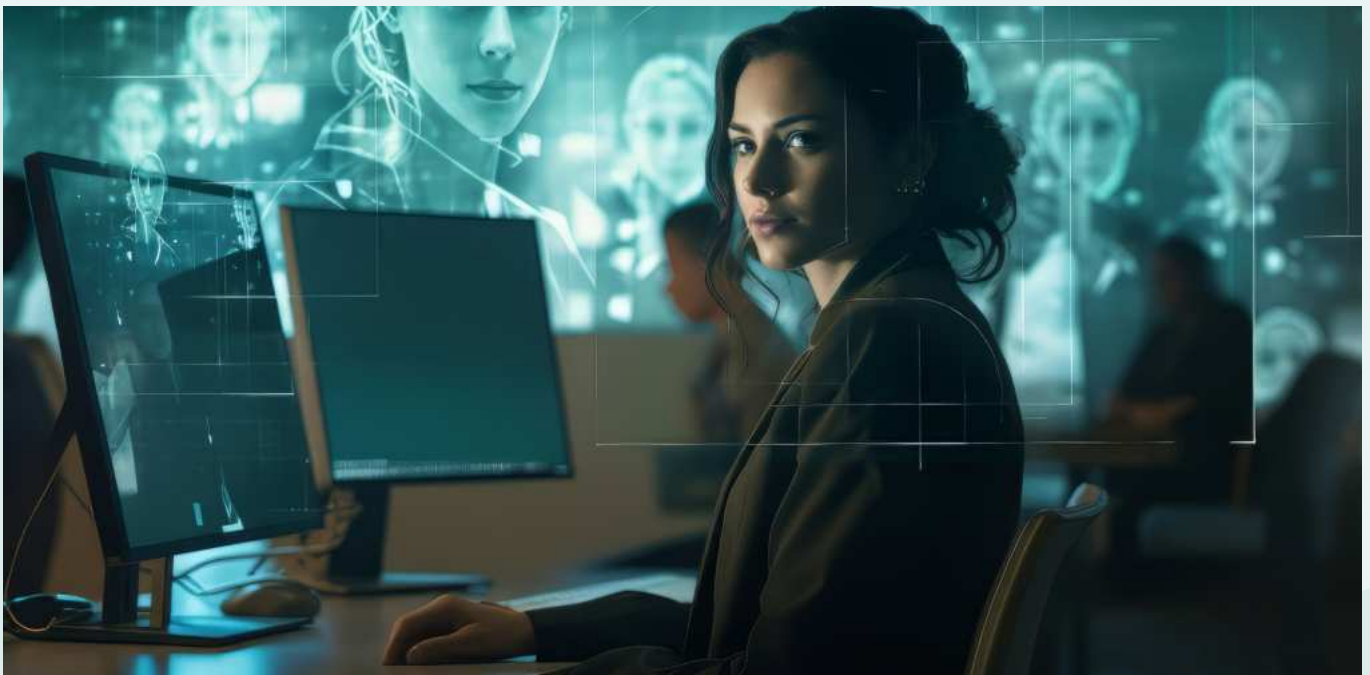
**Swedish AI Startup Landscape** is a collaborative effort by AI Sweden, Ignite Sweden, and RISE Research Institutes showcases promising Swedish AI startups. It currently connects 200 startups utilizing AI technology. The Swedish AI Startup Landscape is part of the broader European AI Startup Landscape, which aims to enhance the visibility of AI startups across the continent.

*“The biggest needs of Swedish companies is to focus on the leadership to have a 360 degree perspective for AI integration, educate and upskill workforce, build new organisational processes at all levels, cross sector collaboration and involve everyone in change and transformation.”*

*/Susanne Fuglsang, Ecosystem & Partner manager - AI Sweden.*

### Challenges:

- Massively upskilling employees in using AI and other digital technologies.
- Insufficient governmental funding for AI research and innovation, and in general – for deep tech and innovation.
- Lack of unified governmental AI vision, strategy and roadmap for AI development and utilisation for sustainable growth in ethical and efficient way.
- Need for certification capabilities of AI systems.
- Cybersecurity solutions and protection of digital consumers against fraud.
- Lack of AI (and deep tech) specialists and talents.
- Integration of AI into large companies' processes to attain value.



## TIPS

*Lithuanian companies and their associations should lobby the Lithuanian government and relevant agencies to initiate a dialogue with Swedish actors. This dialogue should aim to open doors for joint large-scale projects and collaboration in the field of AI. A successful model to consider is the Canadian government's approach, which provided value to Swedish hospitals by sending delegation and services upfront to ensure continued market access.*

## RESOURCES

<https://my.ai.se>

<https://www.ri.se/en/ai-center>

<https://wasp-sweden.org/>

<https://aistartuplandscape.se/>

<https://www.chalmers.se/en/centres/chair/>





# FINANCIAL TECHNOLOGIES - FINTECH

The Swedish fintech market is highly competitive and somewhat saturated, with many players vying for market share in a relatively small domestic market. Sweden represents one of the most innovative and supportive start-up ecosystems for FinTechs in Europe.

By definition, fintech companies are companies whose business model focuses on innovations and fast scaling. According to market study “The Swedish Market Financial Technology” commissioned by Open Trade Gate Sweden (2022.12), in Sweden there are 502 fintechs companies (2022.07). The total fintech enterprise value in 2021 was 56.8 bn EUR with the 48% share of payments area, where Klarna takes a lion share.

The industry is thriving with significant developments in digital banking, payment solutions, and open banking. While fintech investments are decreasing now in Sweden, the industry as a whole is experiencing stabilisation.

## TRENDS

Sweden’s nearly cashless society has been boosted by several major fintech success stories. Companies like Klarna are leading the way in the buy now, pay later (BNPL) space, while mobile payment solutions like Swish, used by 83% of the population, are driving the country towards a cashless society. Open banking, propelled by the EU’s PSD2 directive, opens collaboration possibility between traditional banks and fintech startups and is expected to expand further with the implementation of the Financial Data Access and Payments Package. Additionally, blockchain technology is being explored for secure transactions and identity verification, with a strong emphasis on sustainable finance.

Looking ahead, AI is set to revolutionize fintech in Sweden, enhancing fraud detection, risk management, and customer service. The integration of fintech with the IoT will bring new possibilities in insurtech and seamless payment experiences. Decentralized finance (DeFi) is expected to offer financial services without traditional intermediaries, while advanced cybersecurity measures will become critical to protect against evolving threats. Furthermore, embedded finance will integrate financial services into non-financial platforms, providing more convenient and accessible financial solutions.

## ACTORS

**SweFinTech** – founded in 2017, it is a membership (93) based association and a network created to run events where the industry can share knowledge, do advocacy with authorities aiming to improve the conditions for fintech to grow in Sweden. They also issue yearly Fintech Reports.

**The top five fintech market players in Sweden are:**

- Klarna offers a range of payment solutions including buy now, pay later (BNPL), direct payments, and instalment plans.
- iZettle (acquired by PayPal) provides mobile payment solutions and point-of-sale (POS) systems for small businesses.
- Trustly offers online banking payment solutions that enable customers to make payments directly from their bank accounts.
- Tink is an open banking platform that provides APIs for account aggregation, payment initiation, and personal finance management.
- Lendify is a peer-to-peer lending platform that connects borrowers directly with investors.

The Swedish fintech ecosystem has gained tremendously from the knowledge and international recognition attracted by these

market giants, contributing to a trickle-down effect of know-how. Its fintech community is very active and every year is gathered by the Stockholm Fintech Week that kicks off a packed week of presentations and side-events from industry leaders.

### Challenges:

- Lack of the Swedish authorities' help to fintech companies related to licensing, regulatory compliance and internationalization.
- Fintechs in Sweden face challenges due to the vast influence of the local banks, their legacy payments infrastructure and existing IT systems that struggles to transition.
- Balancing the need for innovation with ensuring compliance with financial regulations.
- The recent economic downturn has led to a significant reduction in available governmental and VC funding.
- As fintech solutions handle sensitive financial data, robust cybersecurity measures are crucial.
- Insufficient pool of skilled workers due to competition with banks and large tech, especially for legacy computer languages such as COBOL and Assembly.

*“Many fintech companies face difficulties in establishing and maintaining relationships with traditional banks due to “de-risking” practices. Banks often hesitate to service fintech firms due to perceived risks, such as compliance concerns or their innovative business models. SweFinTech is working with FSA on resolving this question.”*

*/Lana Brandorne, VC Goose Valley*



*“With Lithuania’s development of a sophisticated regulatory framework and cultivation of a skilled talent pool in areas like cybersecurity, digital banking, and blockchain, there are significant advantages for Swedish firms considering collaboration, outsourcing, or tapping into Lithuanian expertise. This partnership could help Swedish fintechs navigate regulatory complexities, fill talent shortages, and gain cost efficiencies.”*

*/Lana Brandorne, VC Goose Valley*

## **TIPS**

- *Finanspektionen (FI) is a government authority tasked with monitoring the financial market. FI Innovation Center informs about the regulations, processes and principles and facilitates a dialogue about innovative activities. The Center also arranges discussions between Swedish and foreign authorities regarding innovation.*
- *Lithuanian ICT companies should also optimize their visibility and accessibility online and to make use of the well-developed fintech community and network in Sweden, mainly by taking part in industry networking events.*
- *Read more on Outsourcing of fintech in the market study “The Swedish Market Financial Technology” page 22, and Find a business partner on page 27 (see the link in Resources).*

## **RESOURCES**

<https://en.swefintech.se/>  
<https://stockholmfintechweek.com/>  
<https://www.tillvaxtanalys.se/in-english/>  
<https://www.tillvaxtanalys.se/in-english/publications/pm/pm/2021-01-28-swedish-fintech.html>  
<https://www.fi.se/en/fis-innovation-center/>  
<https://www.kommerskollegium.se/publikationer/>  
<https://www.goosevalley.vc/>

# INTERNET OF THINGS - IOT

The projected revenue for the Internet of Things market (IoT) market in Sweden is estimated to reach 6.2 bn EUR in 2024 and exceed 9.9 bn EUR by 2029 (Statista), i.e. market size is expected to show an annual growth rate (CAGR 2024-2030) of 16.08%.

The IoT industry in Sweden is one of the fastest growing in Europe due to advanced technological infrastructure and key strong industry players such as telecommunications companies as well as various platforms and tech companies.

## TRENDS

Many industrial companies in Sweden are increasingly investing in IoT technologies for environmental purposes to improve energy efficiency, reduce waste, and mitigate climate change as well as to improve productivity, reduce costs, and enhance competitiveness.

IoT technologies including AI, machine learning (ML), 5G and other connectivity services, are expected to converge in terms of maturity in 2024 creating a more hospitable climate for businesses to deploy and grow IoT strategies, especially in verticals such as energy & utilities, remote monitoring, smart cities, automotive, consumer, and transportation.

Investment has flooded into the satellite market, particularly for start-ups launching low earth-orbit (LEO) satellites. Recently though, Edge AI has gained more traction as a way to address low-latency requirements, reduce cost, and mitigate security and privacy concerns.

## ACTORS

**IoT Sverige** is a strategic innovation program funded by three governmental agencies that provides a comprehensive picture of the Swedish IoT landscape. IoT Sweden is hosted by Uppsala University and its office has 7 staff members. They offer news, events, and information on key players, applications, and manage 100 collaborative IoT projects in public sector with value of 200 million SEK.

**IoT World** is hosted by Linköping Science Park and is a cluster of 90 members and an open

***“The three biggest needs for IoT area – a perspective of the regional IoT cluster:***

- *Standardisation at EU level for system connectivity;*
- *Need for new business models for connected systems to find how to monetise them;*
- *Tighter collaboration with municipalities to know their challenges and educate them on IoT user cases.”*

*/Ulrika Johansson, IoT World*

knowledge platform with processes and test environments where members share experiences and co-create innovations. Its network focuses on collaboration with businesses and knowledge sharing within the Swedish IoT ecosystem.

Large telecommunication companies such as **Ericsson, Tele2, Telia, Telenor** possess IoT labs, runs national conferences and provide quality advanced IoT solutions that enable many industrial applications and supports growth of this area.



## Current challenges:

- A lack of universal standards for communication protocols and data formats across different IoT devices and platforms.
- Costly integrating IoT solutions with existing IT infrastructure and legacy and ensuring network security.
- Effectively managing and analysing the large datasets generated by IoT devices requires robust infrastructure and skilled personnel.
- Costly investments in IoT infrastructure and ongoing maintenance.
- Sweden's IoT sector might be heavily focused on research and development, with a need for stronger initiatives to promote wider adoption across various industries and public services.

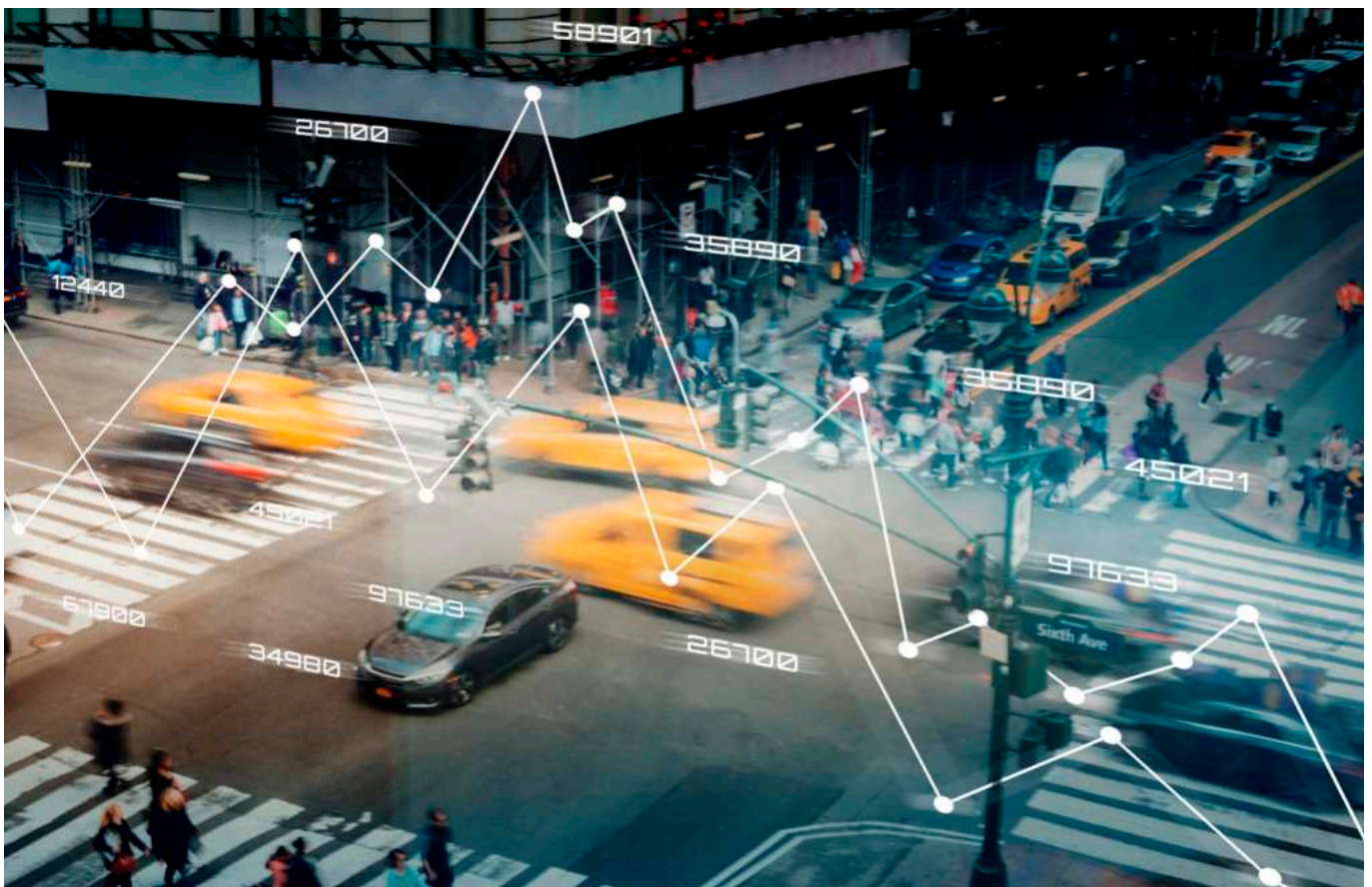
## RESOURCES

<https://h22.se/en/about22/>

<https://iotopen.io/en>

<https://linkopingsciencepark.se/iot-internet-of-things/>  
<https://urbanictarena.se/internet-of-things/>

<https://www.iotone.com/supplier/searchlist?-filterName=HQCcountry&HQCcountry=SE>



## IN CONCLUSION

Sweden's thriving innovation ecosystem, its advancements and challenges, present an opportunity for Lithuanian firms looking to expand their businesses and collaborations. By leveraging Sweden's comprehensive support networks, infrastructure, expertise and capital, Lithuanian companies can tap into cutting-edge tech through collaboration.

The partnerships can address Swedish challenges while strengthening Lithuania's own innovation ecosystem. Use the resources in this bulletin to connect with Swedish partners and take your business to the next level!



Neda Nordin

## THANK YOU!

We thank **Neda Nordin**, LPS Board Member, for producing this bulletin.

Neda is an innovation management and sustainable development professional with solid experience in leading international and corporate programs and projects.

Her passion lies in helping organisations merge sustainability with ITC emerging technologies and drive transformative change.

## TO BE CONTINUED

This is the fifth informational bulletin that Lithuanian Professionals in Stockholm Club has issued. The series of bulletins aim to provide local knowledge on various topics that are important for Lithuanian businesses aiming to expand or start in Sweden.

In preparing bulletins we utilize our network and professional contacts that own specific knowledge so that bulletins are comprehensive, competent, and useful for Lithuanian businesses.

## LITHUANIAN PROFESSIONALS IN STOCKHOLM CLUB - LPS CLUB

We are a non-profit organisation which unites Lithuanian professionals in Sweden to support each other's professional growth, promote Lithuania, and enjoy joint activities.

Our Strategic Directions are:

- Lithuanian business enablement in Sweden
- Better visibility and image of Lithuania in Sweden
- Networking, fun, high professionalism and knowledge of our members.

<https://lpsclub.se/>  
[info@lpsclub.se](mailto:info@lpsclub.se)



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<https://swelitfund.org/>



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Designed by Gita Juchnevič  
"Coliukės dizainas"

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<https://inovacijugentura.lt/>

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<https://www.cci.lt/>

**Kaunas Chamber of Commerce, Industry and Crafts**  
<https://chamber.lt/>

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<https://se.mfa.lt/>