



# Ericsson Technology Review

February 2024

The importance of ICT in society –  
Ericsson Technology Review and  
100 years of innovation

Charting the future of innovation

# The importance of ICT in society – Ericsson Technology Review and 100 years of innovation

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For the past 100 years, Ericsson Technology Review has pioneered new technological frontiers through world-leading research. Now we turn the page on history to explore how these innovations shape modern society.



Global GDP grew sixfold between 1950 and 1998 [1], largely due to improvements in transport, the emergence of mass production, and significant technological developments across consumer and enterprise markets, including ICT. This unprecedented growth led to an increase in commodity trade that more than tripled the ratio of global exports-to-GDP in the same period [2].

For more than 100 years, ICT has been an important driver of economic and social development, facilitating and enabling progress in countries all around the world. ICT was the first technology to give humankind the ability to transcend physical space and, in doing so, made it possible for us to create a platform that has spurred global economic growth and facilitated the spread of new ideas and technologies. Major innovations within telecommunications and mass telephony in particular over the course of the past century have had a societal and economic impact comparable to other major infrastructural breakthroughs in history, such as roads of the ancient Romans and the railroads of the great industrialists.

## Ericsson Technology Review at 100: innovating a century of socioeconomic progress

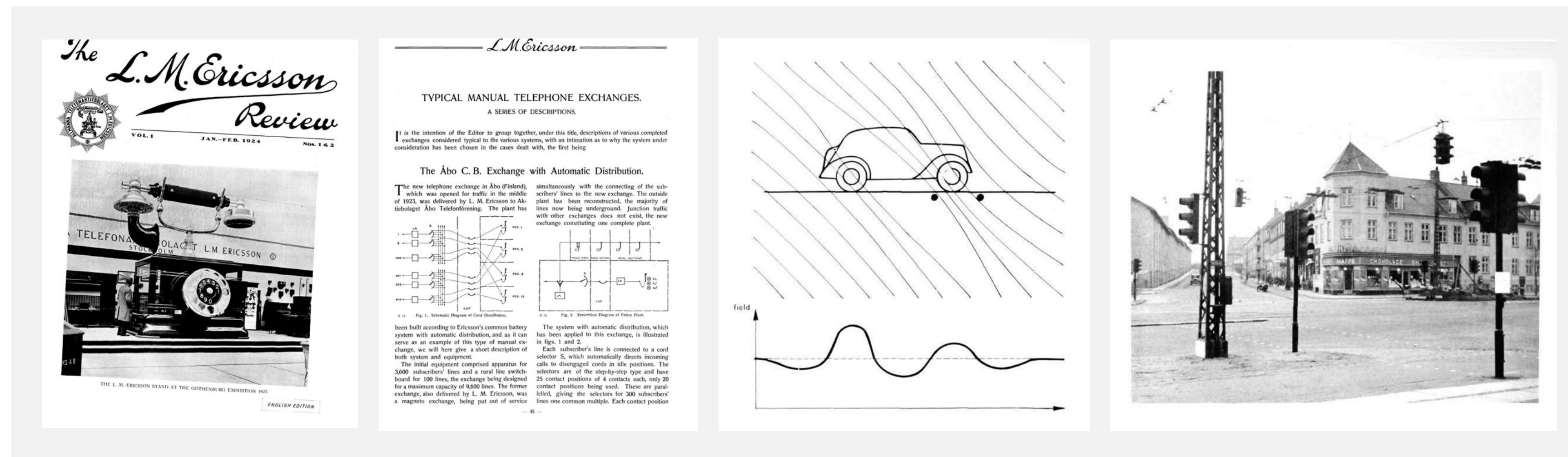
Advances in ICT and its impact on modern society are greatly intertwined. As a general-purpose technology, the impact of ICT has not been limited to the sector in which

it has been produced, but has spread across all sectors of production and consumption, significantly improving the quality and variety of many products and services that have gone to market.

For 100 years, Ericsson Technology Review (ETR) has been at the forefront of many of these advances. Our first edition [3] in 1924 laid the very foundation to demonstrate technology thought leadership, and that remains the same today.

This publication began at the inception of modern industrialized society, in 1924, when much of what we now take for granted had not yet come into existence. In the same decade, we started using electricity on a large scale to light up our homes, sparking a demand for household appliances. The acceleration of the motorcar industry also began to galvanize the world's strongest economies, driving the build-out of national road networks. The world was innovating and Ericsson too in vastly different areas: from railways [4] to time clocks, and betting systems [5] to radio gramophones [6] and traffic light automation systems [7].

However, when the first ETR was published, under the name LM Ericsson Review, our focus had firmly changed to the build-out of global mass telephony and later ICT in general. Subsequently, one highlight was a feature on the automatic switchboard (with 500 switches), considered a major achievement in bringing telephony to the masses.



**Figure 1:** Since its very first issue, the L.M. Ericsson Review (today known as the Ericsson Technology Review) has sought to make technology accessible to a broader public, from in-depth descriptions of telephone exchanges (L.M. Ericsson Review #1 1924) to an early automated traffic signaling system (L.M. Ericsson Review #3 1946).

Similar to yesteryear's science fictive narratives of voice control, mobile devices, and AI, future networks will certainly enable new services and applications that today seem like science fiction.

This includes experiencing the internet with all five of our senses, witnessing connected intelligent machines talking to each other, and making the world much more efficient and sustainable for the progress of humanity. In the coming years, we also envision a blurring of the boundaries between physical and digital worlds, creating a cyber-physical continuum that can transcend time and even predict the future.

In the next 100 years, as we continue our journey through new technological frontiers, ETR will remain an eminent source of world-leading research and thought leadership that pushes the boundaries for innovation and drives critical advances across society. We are ready to take on the challenge and make what seems impossible today, the reality of tomorrow.

## Driving impact with the digital economy

ETR was also at the forefront when Ericsson helped cut the cord on fixed telephony in the 1980s with 1G, through to the global mobile internet with 3G, and enabling the mass market app economy with 4G.

The smartphone and the enablement of wider societal digitalization have evoked fundamental, structural changes in daily life and business: in 2022, digitally delivered products accounted for a record 54 percent share of global services trade, with a growth rate that has outpaced all trade goods combined over the past two decades, including vehicles, fuels, pharmaceuticals, and more. [8]

Furthermore, the impact on billions of lives has been immeasurable. Mobile devices and app-based models have facilitated the re-invention of services, products and processes. This has made the smartphone our remote control to life, managing everything from email, shopping, music consumption and mobile banking, both in rural and urban areas. [9]

Today, with 5G, communication networks no longer just relay information between people as they did 100 years ago – but between things and machines, allowing entire factories, fleet systems and critical national infrastructure to become digitalized, smarter and more resilient.

As in the very first issue of ETR in 1924, automation remains a hot topic – but now we see a future in which automation and artificial intelligence can autonomously manage the world's networks – predicting and repairing faults, and dynamically distributing network resources in the most optimal way.

## The next 100 years of Ericsson Technology Review

In 1924, we set our sights on a world of mass telephony to bring people ever closer together. Today, our engineers are envisioning smart programmable 6G networks [10], delivering limitless, global connectivity.



## The authors



**Pernilla Jonsson** is the head of Consumer & Industry Lab at Ericsson Research. Pernilla has worked with innovation, market strategy and business development for multinational companies for over 20 years and is a keynote speaker in large global events. She has been part of the core team driving the Ericsson XR strategy towards 2030 and is driving research in XR and the metaverse in a variety of studies, design concepts and demos. Since joining Ericsson in 2015 she has been a key global spokesperson for the company and regularly frequents international media as an expert on the future of connected technology and what it means for people, business and a sustainable society. Pernilla is a board member of RISE – Research Institutes of Sweden, as well as WASP-HS - the Wallenberg AI, Autonomous Systems and Software Program - Humanities and Society research program and is also part of Digital Future's Societal Committee at KTH Royal Institute of Technology in Stockholm, Sweden.



**Hans Bergström** has close to 35 years of experience in communication services, with extensive global experience in different capacities from customer engagements to architectural and systems design. His background spans several segments including business communications, networks, data centers and wireless communication through 3G, 4G, 5G and 6G. In his current role of Director Architecture Evolution, he drives a special area of High-Performance Networks.



**Peter von Butovitsch** joined Ericsson in 1994 and has held various roles at Ericsson Research and in RAN system design during his time with the company. From 1999 to 2014, he worked for Ericsson in Japan and China. He is currently a technology manager at Systems & Technology. Butovitsch holds both an M.Sc. in engineering physics and a Ph.D. in signal processing from KTH Royal Institute of Technology. In 2016, he completed an MBA from the University of Leicester in the UK.



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## Further reading

- Ericsson's commitment to digital inclusion ↗
- Ericsson's commitment to access to education ↗
- Ericsson blog, The impact of technology on education, inclusion and work ↗

## Acknowledgements

We would like to acknowledge the contributions made by generations of skilled, innovative and insightful Ericsson colleagues within all domains required to facilitate this monumental paradigm shift.