ICT LANDSCAPE

Executive Summary MoveToJoy Luxembourg 2024



ICT at the Core of Public and Private Economies

Information and Communication Technologies (ICT) are fundamental to both public and private sectors across the globe. ICT is a major driver of economic growth and innovation. By investing in *key technologies* and *fostering* a *skilled* workforce, countries can position themselves for success in the digital age.

Key ICT Sectors:

- Public: (air)space, defense, health, transport, ID services
- Private services: banking, insurance, software companies
- Private industry: design, manufacturing, logistics, e-health

Global ICT Trends:

- AI/ML, IoT/Robotics, Cloud Computing, and Cybersecurity
- Smart Cities and Increased Connectivity

Country-Specific ICT Strategies:

- UK: Focuses on a blend of service and industries, with strengths in (air)space and FinTech. London is a major financial center and a top choice for business scaling.
- **Singapore:** A leader in smart city initiatives and a hub for FinTech and AI. It boasts a highly connected population and is a regional leader in data centers.
- **Germany:** A strong industrial sector with a focus on digital environments, infrastructure, and education.
- Finland: A global leader in digitalization with a highly skilled workforce and a focus on 5G/6G and fiber optic networks.
- France: A large IT sector with strengths in banking, aviation, manufacturing, and healthcare.
- Ireland: A hub for data centers and cloud computing, with a strong ICT talent pool.
- Luxembourg: A growing ICT sector with a focus on FinTech, e-Health, and data security. It offers a favorable

Beyond the Challenges, Luxembourg seeks to establish as a Hub for ICT innovation in the EU

Challenges and Opportunities:

- **Cybersecurity:** A growing concern due to increased connectivity. Countries are investing in cybersecurity solutions and promoting operational resilience.
- Skilled Labor Shortage: A challenge for many countries in Europe
- Data Center Efficiency: Balancing energy demands with sustainability goals has become a priority.
- Investment: Government and private investments from large VCs are needed for ICT development.

The European Union:

- Supports digital transformation through programs like Horizon Europe and Digital Europe Programme.
- Luxembourg is a prominent member with a strong ICT infrastructure and research institutions.

Luxembourg: A Hub for ICT Innovation

Luxembourg is strategically positioned as a leading hub for ICT innovation.

- **Strong ICT Foundation:** The country boasts a highly skilled workforce, a robust digital infrastructure (including the highest density of Tier IV certified data centers worldwide), and a supportive ecosystem for startups and businesses.
- Focus on Key Areas: Luxembourg specializes in FinTech, e-Health, and data security.
- **Government Support:** The government actively promotes ICT development through initiatives such as the Luxembourg National Data Service, which facilitates data-driven research and innovation.
- **Research Excellence:** Research institutions like the SnT (Interdisciplinary Centre for Security, Reliability and Trust) contribute to cutting-edge research in cybersecurity and other critical ICT areas.
- International Collaboration: Luxembourg actively participates in European Union programs like Horizon Europe, fostering collaboration and driving innovation within the region.

ICT strategy - interplay of factors

5/6G Transition strategy & Frequency availability	DIGITAL TRANSFORMATIC Smart cities	TRANSFORMATION Crime prevention, detection, management, restore process prevention, detection & management Smart cities management, restore process management		
	Access to 5/6G technology Digital Connectivity %	Quantum technologies	Operational infrastructure resilience	Geopolitical Situations Remote Working
BROADBAND SPECTRUM & TECH (Mobile /WI-FI)	loT Robotics Customer experience Cost-effective, Innovative Cutting-edge solution	(Banking, insurance) E-pro E-Products (design, manufacturing, logistics) Ce, Defence / Space Healthcare ID services Transport Software / Hardware		protection FIBER OPTIC NETWORKS
	Infra capac	ity for AI processing	Multiple infrastructure strategies (hard / physical-digital / soft)	Datacenter Green
Good / Bad Best practice & Standards	AI / Machine Lear	ems s INF	Cloud computing (I/P/SAAS) RASTRUCTURE DATA CENTRES	Sustainability Components & materials Availability
	()	Private, EU, local govs)		

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