

Chapter 3.6

Digital Society

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*Strategic Research and
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Aeneas

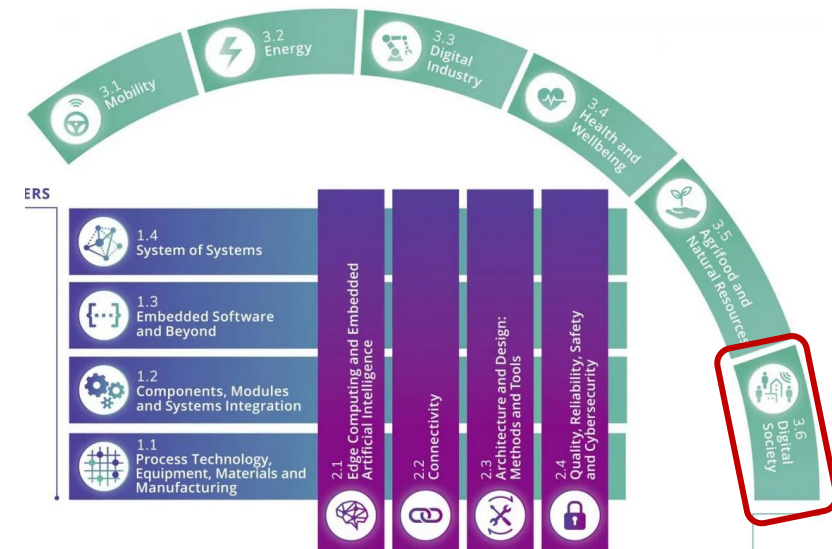


Scope

Icon depicting the collective aspect (multiple persons), in combination with the urban environment under a ubiquitous wireless network

The scope of the Digital Society chapter:

- the **digital transformation** in Europe, including the integration of AI, robotics, VR, and other relevant technologies to foster an inclusive, sustainable, and resilient society
- the chapter outlines **major challenges** and **key focus areas** to achieve these goals



Structure and Major Challenges

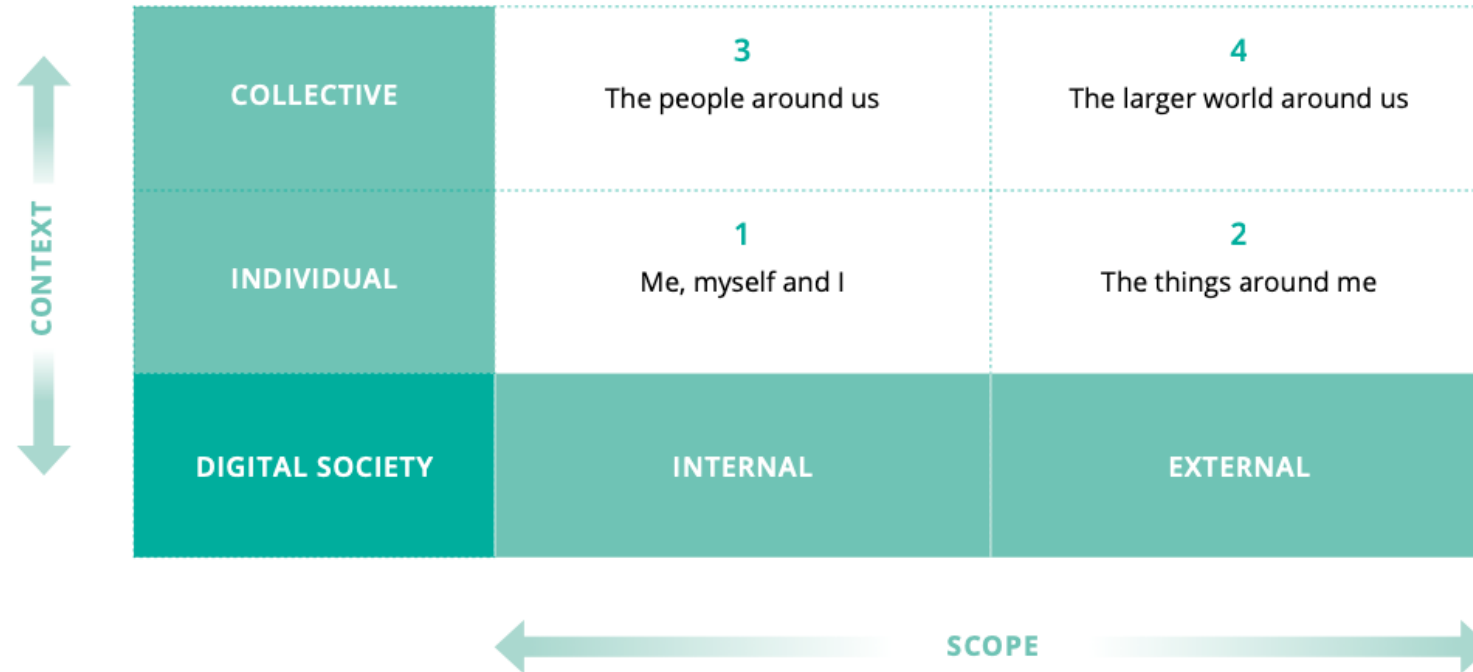


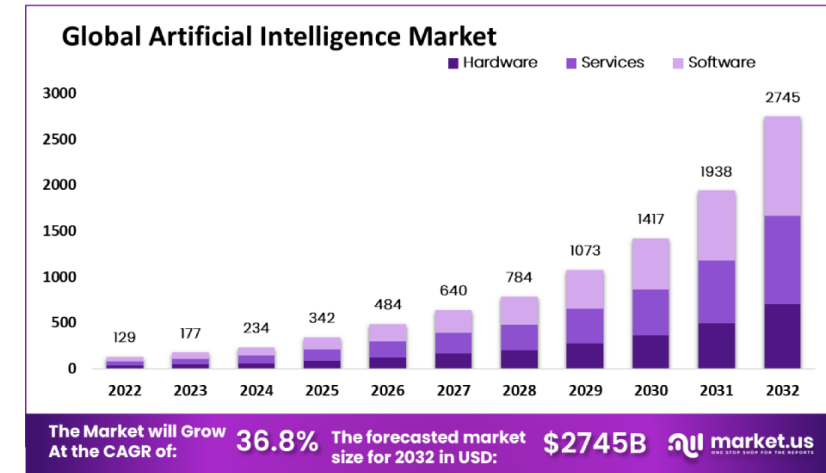
Figure 6.3.3 - Structuring the Major Challenges in scope and context

- **Major Challenge 1:** Facilitate individual self-fulfilment
- **Major Challenge 2:** Facilitate empowerment and resilience
- **Major Challenge 3:** Facilitate inclusion and collective safety
- **Major Challenge 4:** Facilitate supportive infrastructures and sustainable environments

Key trends

New

- The key trend is **digitization** (esp. with AI)
- In the 2025 edition of the ECS SRIA, only minor adaptations have been made to the chapter on Digital Society.
- All major challenges are still equally valid in a further digitizing society.
- However, more attention is paid to:
 - the use of AI-based tools (such as ChatGPT, ...)
 - measures against fake video and audio
 - increasing importance of cybersecurity
- Further, diagrams have been updated with more recent versions (and post-Covid aspects have been made less prevailing)



R&I focus areas

Ch#	Challenge	Key focus area
1	Facilitate individual self-fulfillment	Digital inclusion: tools, infrastructure, training, connectivity
		Online education & examination: VR/AR training and support
		Improved human-machine interaction solutions
		Support devices (wearables, robots, cobots, chatbots, ...)
		Nudging and serious gaming for personal development and healthier lifestyle
2	Facilitate supportive infrastructure and a sustainable environment	Reliable and ubiquitous digital infrastructures
		Access control / intrusion detection / surveillance
		Provide protective environment and tools against virus infections
		Off-grid living and emergency survival
3	Facilitate empowerment and resilience	Digital inclusion: tools, infrastructure, training, connectivity
		Collective safety: secure access control, surveillance, prevention of misinformation
		Safe environment for living, working and transport
		Emergency / Crisis response solutions and services
		Dynamics of society: systemic change
4	Facilitate inclusion and collective safety	Physical Infrastructure management / physical resilience
		Intelligent Infrastructure management (intelligent buildings, ...)
		Digital Infrastructure management / digital resilience
		Smart Cities: E-government / Citizen support

Ch#	Challenge	Necessary R&D developments
1	Facilitate individual self-fulfillment	Reliable, dependable and secure SW and HW
		Mature human systems interaction methods
		Trustable AI/Machine Learning algorithms
		Energy-efficient HW and SW solutions (e.g. for IoT devices, wearables)
		Seamlessly operating SW (e.g. for IoT devices, wearables)
		Ubiquitous, reliable, and energy-efficient connectivity
2	Facilitate supportive infrastructure and a sustainable environment	Reliable, dependable and secure SW and HW
		Trustable AI/Machine Learning algorithms
		Advanced cyber-security and privacy methods and tools
		Ensuring of safety and resilience based on ECS technologies
		Energy-efficient and dependable HW and SW solutions (e.g. for IoT devices, wearables)
		Seamlessly operating SW (e.g. for IoT devices, wearables)
		Ubiquitous, reliable, and energy-efficient connectivity and localization
		Secure broadband connectivity based on 5G systems and beyond
Distributed (production) systems		
3	Facilitate empowerment and resilience	ECS technologies for AR/VR and high-quality video/videoconferencing
		Tools, methods, SW and HW technologies for extensive and ubiquitous use of AI/ML
		Advanced cyber-security and privacy methods and tools
		Intelligent connected IoT devices using new sensors for safety and resilience
		Ubiquitous, reliable, and energy-efficient connectivity and localization
		Secure broadband connectivity based on 5G systems and beyond
4	Facilitate inclusion and collective safety	Open systems/platforms for managing complex physical infrastructure and processes
		Energy-efficiency oriented HW technologies and embedded SW
		Advanced cyber-security and privacy methods and tools
		Intelligent connected IoT devices using new sensors for safety and resilience of societies
		Ubiquitous, reliable, and energy-efficient connectivity and localization
		Secure broadband low latency connectivity based on 5G systems and beyond
Distributed (production) systems		

Specific R&D developments necessary

Chapter 3.6 Digital Society

- Major challenges are equally valid
- Summary of changes in chapter Digital Society:

New

- General updates have made it more up-to-date
- More-up-to-date w.r.t. advent of AI-based tools
- Addition of measures against fake content
- Extra mention of safety and cybersecurity
- Diagrams updated with more recent versions

