

SYNERGIA

# Generative AI and eXtended Reality

## Added value and applications through SYNERGIA

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# What Generative AI adds

Models generate new content in response to instructions and context

| | |
|---|---|
| **Predictive AI** | Estimates a class, value or likely outcome. |
| **Generative AI** | Produces text, images, code, audio or 3D content. |
| **Agentic applications** | Use models and tools to carry out bounded tasks. |

Source: NIST (2024), AI 600-1

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# Added value in everyday work

| | |
|---|---|
| **Knowledge access** | Ask a question and receive a contextual explanation. |
| **Content creation** | Draft instructions and exercises for expert review. |
| **Personalisation** | Adjust language and detail to the learner’s needs. |
| **Scenario variation** | Create alternatives without authoring every version. |

Source: U.S. GAO (2024), GAO-24-106946

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# Evidence of productivity gains

**+15%**

## Issues resolved per hour

5,172 customer-support agents

## AI assistance can help workers apply knowledge during a live task

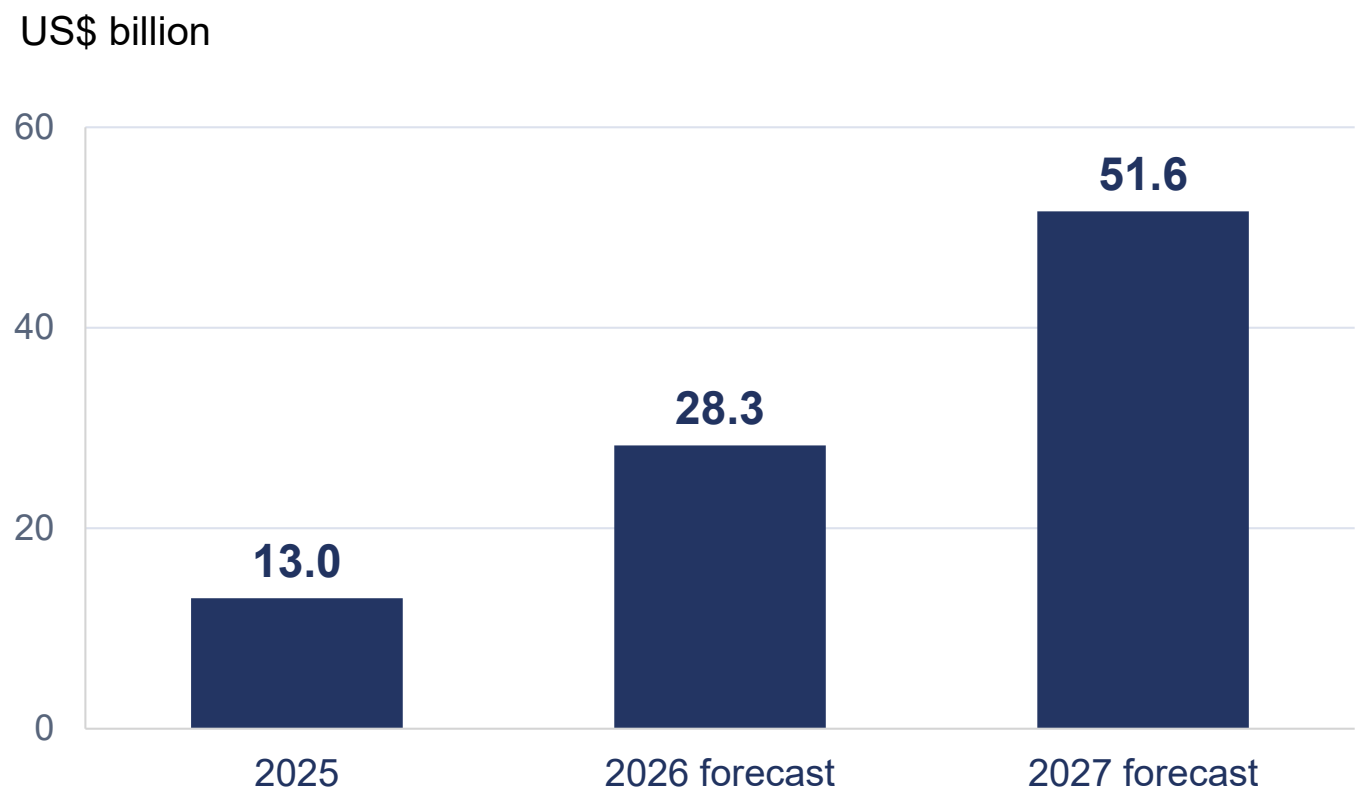
One deployment in customer support.
Benefits varied across workers and tasks.

Source: Brynjolfsson, Li & Raymond (2025), Generative AI at Work, QJE, 140(2), 889–942.

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# Generative AI market potential




## Nearly 4×

2027 spending relative to the 2025 estimate

Model spending only. Excludes the wider AI hardware and services market.

Source: Gartner (16 September 2026), Worldwide AI Spending Forecast, GenAI models category.

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# eXtended Reality

**AR** Information overlaid on the real world.

**MR** Digital objects anchored to physical surroundings.

**VR** An immersive simulated environment.



Source: Microsoft Learn (2023), What is mixed reality?

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# Added value of spatial interaction

| | |
|---|---|
| **Practice without exposure** | Rehearse hazardous or rare situations in simulation. |
| **Information in context** | Place instructions near the relevant part or action. |
| **Repeatable experience** | Practise the same procedure and compare attempts. |
| **Remote participation** | Access training without moving the physical asset. |

Source: SYNERGIA DoA (2026), pilot descriptions; PwC (2020), VR Training Efficacy Study.

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# Evidence from VR training

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**4×**

## Faster course completion

Compared with classroom learning
in PwC's soft-skills study

## Immersion can make focused practice more efficient

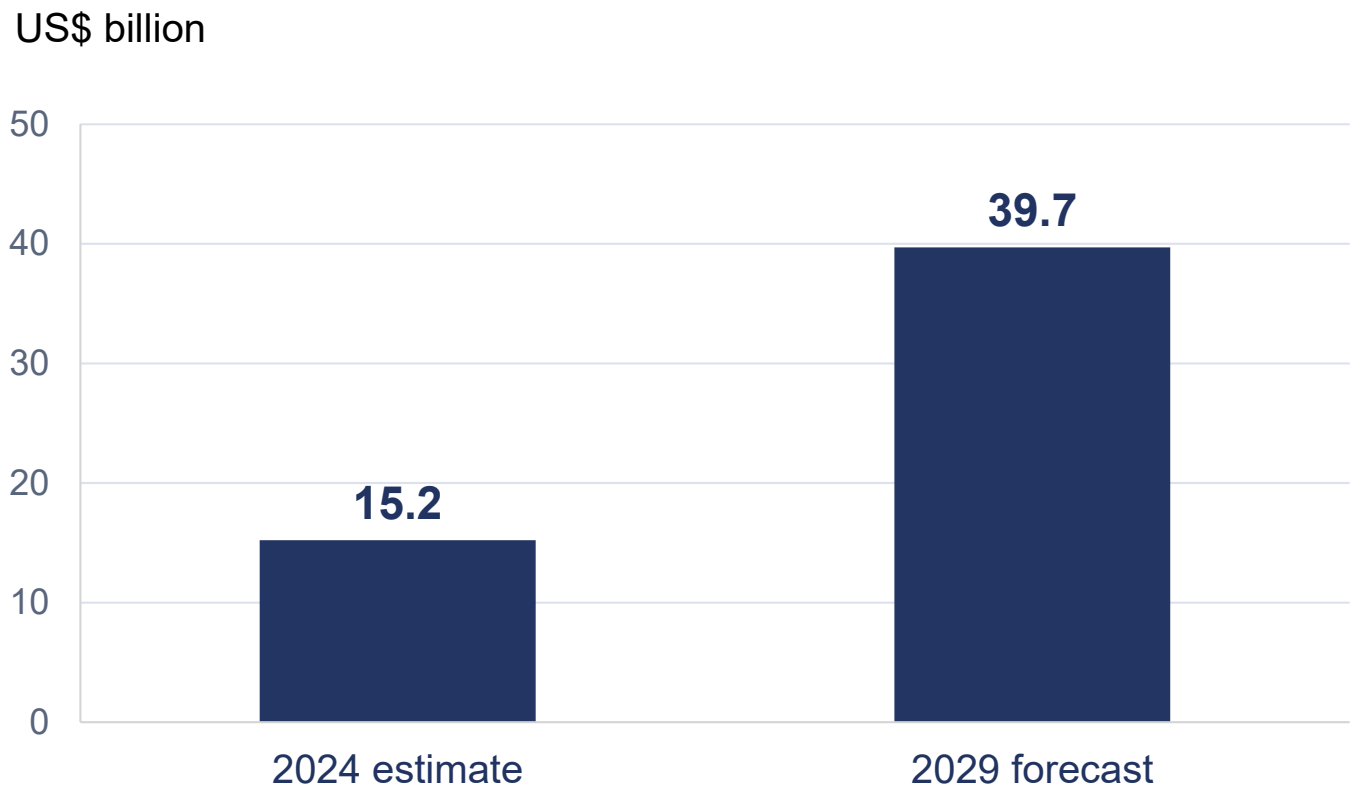
Specific course and participant group.
Course speed does not establish
long-term retention or job performance.

Source: PwC (2020), The Effectiveness of Virtual Reality Soft Skills Training in the Enterprise.

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# XR market potential




**21.1%**

Forecast annual growth from 2024 to 2029

Hardware demand remains uneven. IDC's October 2026 update reports a 22.3% yearly decline in MR headset shipments in Q2 2026.

Source: IDC (May 2025), Worldwide AR/VR Spending Guide; IDC Headset Tracker (October 2026).

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# Combined value of GenAI and XR

| Training element | Fixed XR experience | XR with Generative AI |
|---|---|---|
| Guidance | Prewritten instructions | Contextual explanations |
| Scenarios | Authored branches | Generated variations |
| Interaction | Menus and fixed commands | Conversation in the scene |
| Adaptation | Preset difficulty levels | Guidance adjusted to user context |

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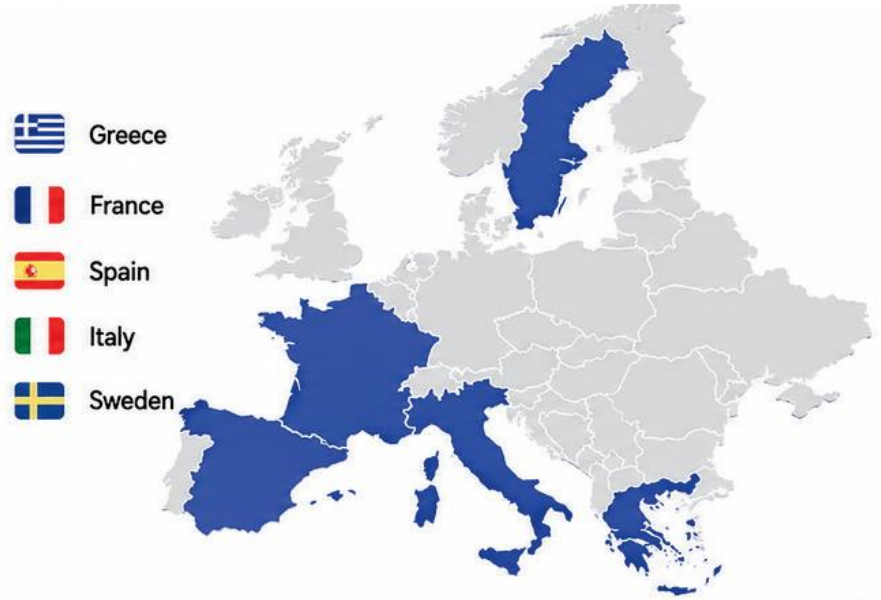
# SYNERGIA at a glance

## Adaptive XR training and support that responds to the individual

Horizon Europe project
June 2026 to May 2029

Personalised training, inclusive learning and rehabilitation

**12 partners across 5 European countries**




LMS Laboratory for Manufacturing Systems & Automation
cea
IMMERSION IMAGINATION, INTERACTION ...
vicomtech MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE
we+
Ludus
HÖGSKOLAN I SKÖVDE
GUREAK
Prima Power
Teaching Factory
AIRBUS
Fondation HOPALE

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# SYNERGIA technology pillars

| | |
|---|---|
| **Multimodal sensing** | Estimates user state through a Human Digital Twin. |
| **Generative 3D assistant** | Adapts explanations and multilingual guidance. |
| **Immersive world creator** | Creates or modifies scenes and training scenarios. |
| **Governance and exchange** | Supports user control, explainability and reuse. |

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# Industrial training and collaboration



## Machine assembly and maintenance

**PRIMA POWER, ITALY**

Immersive practice and digital tutors for assembly, configuration and maintenance.



## Drilling training in aerospace

**AIRBUS ATLANTIC, FRANCE**

XR tutorials combine official procedures with operator expertise.



## Human–robot collaboration

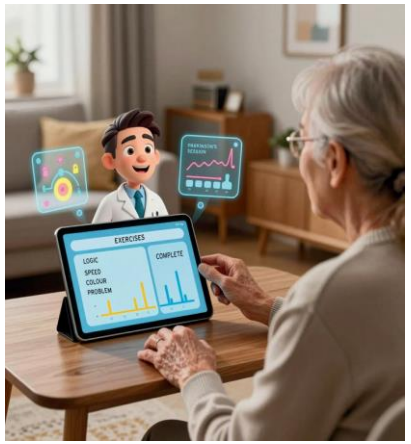
**UNIVERSITY OF SKÖVDE, SWEDEN**

Virtual training and human-state sensing support collaboration with robots.

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# Rehabilitation and inclusive learning




## Personalised speech therapy for Parkinson's

**FONDATION HOPALE, FRANCE**

Adaptive speech exercises and a virtual assistant complement the work of speech-language therapists.



## VR safety training for cognitive inclusion

**GUREAK & LUDUS, SPAIN**

Accessible, adapted VR scenarios help workers with cognitive disabilities practise road safety.

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# SYNERGIA's expected added value

**>30%**

**Less training time**

**>40%**

**Higher user satisfaction**

**≥15%**

**Cost savings**

Validation must compare learning outcomes, errors and accessibility with the existing training approach

**GenAI adapts the guidance. XR makes it experiential.**

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# Thank you!

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