



**Getting to grips with AI: training
for ethical and effective use in business**

The Cegos Group at a glance

A global partner:

Germany, Spain, France, Italy, Portugal, United Kingdom, Switzerland, China, Asia-Pacific, Brazil, Chile, Mexico and the United States.

Cutting-edge training in the areas of:

Management and leadership | Sales and customer relations | Project management
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50
countries through a network
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1,500
employees and
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+250,000
people trained face-to-face
every year and

1 M
users of our
Group Digital Assets

250 M€
million in turnover

20,000
customer companies

2.5 M
connected learners

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As a European and international leader in professional training, the Cegos Group is both an attentive observer and a committed player in the world of work and business. **Our mission is broader than just business: we train individuals and support organizations to meet their development challenges.**

Faced with the profound changes that are shaking up our societies, the promise we make to our customers is more relevant than ever: **we are committed to turning skills into performance.**

All the solutions we offer (turnkey training, customized solutions, blended and digital learning, training outsourcing, etc.) are designed to provide a unique learning experience and have a real impact on everyday working life.

As a global Learning & Development partner, we have been at the forefront of innovation for almost a century:

- We work to keep pace with changes in society, the economy and employment;
- We innovate to provide learners with a meaningful and effective training experience;
- **We help our customers to adopt innovations and technological breakthroughs while striking a balance between ethics and performance.**

The emergence and widespread use of generative AI is opening up new horizons. The acceleration of these innovations, the speed at which they are adopted, the ethical issues they raise and their impact on businesses and organizations are all complex and fascinating subjects.

One thing is certain: skills development is a powerful lever for supporting this profound transformation.

But how do we go about it? What levers should be used to seize these opportunities while reconciling performance and ethics? What are the key success factors for training in AI? Which teams and professions need to be supported? What types of skills need to be developed?

This white paper from Cegos explores the potential of AI and some of the keys to providing support and training in this area. This publication is of course based on the expertise of our teams, but also on their day-to-day experience of working with organizations that place their trust in us on these issues, in all sectors, all over the world.

I hope that these insights will help you and enable us to continue to work together to support individual, collective and societal transformation through skills development.

Benoit Felix,
Cegos Group CEO

01

1950s - 1960s

The term "artificial intelligence" is coined, and early AI research focuses on symbolic reasoning and problem-solving.

02

1980s - 1990s

Expert systems and rule-based AI become prominent.

03

Late 1990s-early 2000s

Machine learning techniques, like neural networks, experience a resurgence, leading to breakthroughs in AI.

04

2000s

Generative models emerge, allowing machines to generate data.

05

Mid 2010s

Early versions of LLMs like GPT (Generative Pre-trained Transformer) are introduced.

06

Late 2010s-early 2020s

The development of much larger LLMs, including GPT-3, with billions of parameters, revolutionises natural language understanding and generation.

07

2020s

Models like ChatGPT, based on the GPT-3 architecture, become popular for chatbot and conversational AI applications. They leverage the advancements in LLMs to generate human-like text in real-time conversations.

A very brief history and definition of AI... and generative AI

The study of artificial intelligence (AI) began in the **1950s**. Early researchers suggested that every facet of learning or intelligence could, in theory, be meticulously described so that machines could be created to simulate them.

AI thus represented a vast field of study including systems and algorithms designed to imitate human intelligence.

The AI landscape then evolved, with a major milestone in the **2010s being the emergence of generative AI**, which marked rapid progress in large language models (LLMs) such as OpenAI's GPT (Generative Pre-trained Transformer) series, leading to the market release of GPT-3 in June 2020.

The scope of AI today covers a wide range of techniques such as **machine learning** and **knowledge-based approaches**, as well as **various application areas** (computer vision, natural language processing, speech recognition, intelligent robotic systems, etc.).

Over time, as AI grows in sophistication and diversifies, new techniques and applications emerge.

It is therefore becoming increasingly difficult to define AI strictly, particularly when trying to draw the illusory line between AI and non-AI.

After lengthy discussions, the **OECD countries have nonetheless reached a consensus on the definition** not just of "AI", but more precisely of what is known as an "AI system":

An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.

This definition of an AI system emphasizes **its dynamic nature while recognizing the role of human input in its development**, as well as the **system's ability to adapt and evolve** during its deployment, particularly in machine learning-based systems.

The results of AI systems are generally classified into **three levels**, depending on the degree of direct interference by the AI on the environment and the degree of human action: **predictions, recommendations and decisions**.

Spotlight on GenAI or generative AI

What sets generative AI apart is its **ability to understand and mimic human creativity**, to generate realistic images, write stories, compose music or even create compelling deepfake videos. It then uses learned models to generate novel results, rather than replicating information or simply analyzing or categorizing existing data.

Content generation systems have grown in popularity and are now recognized as a separate category of results. Indeed, although text generation can be seen as a series of decisions or predictions, its importance justifies it being a separate category in AI systems.

How far have you got with generative AI?

Generative artificial intelligence (GenAI) is redefining economic paradigms and productivity. As a result, many companies are struggling to assess their positioning and draw up a clear roadmap for effectively integrating these technologies. According to a study by the Boston Consulting Group¹ in January 2024, 90% of managers are adopting a wait-and-see stance or are only experimenting with AI on a small scale, reflecting widespread hesitation about adopting GenAI. This uncertainty underlines the importance of training teams, as mastering GenAI relies as much on human skills as on the technological advances themselves.

To support companies in this process, Cegos has designed and proposes an AI maturity model for organizations.

Based on criteria and examples or use cases, this model defines four profiles corresponding to four levels of maturity.

Once an organization's profile has been identified, this "AI Profiler" serves as a **compass for navigating the gradual integration of GenAI, relying on skills development to optimize its added value.**

Imagine a curious company ("explorer"), where a few employees are experimenting with ChatGPT to write marketing content. This organization is groping its way along and does not yet have a clear strategy or even a collective dynamic, but it sees the possibilities of GenAI.

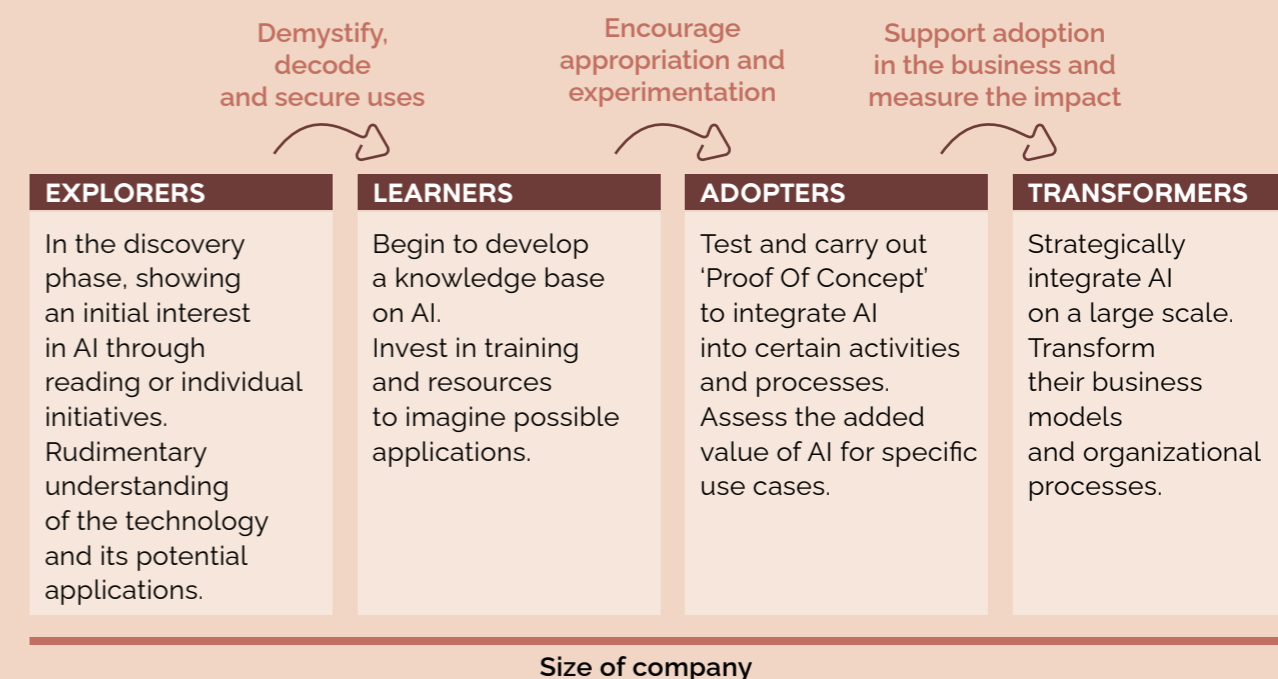
At the other end of the spectrum, a multinational has integrated GenAI into its corporate identity ("transformer"), automating its processes from end to end, while reinventing its business model through continuous innovation.

Where does your company stand between these two extremes? And above all, how can you move on to the next stage? What skills need to be harnessed and what actions need to be taken to make progress, individually and collectively?

Identifying your level of maturity in terms of generative AI will enable you to determine your starting point, establish a clear vision of GenAI objectives and list the skills to be leveraged and the concrete actions to be taken to get there gradually.



4 COMPANY PROFILES BASED ON THEIR AI MATURITY



1. January 2024 - "BCG AI Radar: From Potential to Profit with GenAI" survey of 1,406 executives in 50 countries (including France).



How to invest wisely in AI skills?

Skills development is a fundamental lever for supporting each stage of an organization's AI maturity. Technology can only produce its benefits through informed adoption by trained and committed employees.

Here are a few recommendations for structuring your AI training efforts:

- 1. Implement introductory workshops** to quickly demystify generative AI at scale and to encourage employees to experiment with it responsibly.
- 2. Identify or select employees in each department** who are the driving force behind AI initiatives that are useful to their business or the organization.
- 3. Set up training courses specific to each business line**, sharing communities and project-based learning to develop technical skills and support integration into the company's processes.
- 4. Create an internal academy** to ensure continuous and targeted skills upgrading for technicians and non-technicians, according to AI integration priorities (core business).
- 5. Invest in innovation training**, staying ahead through an openness to the new technology in the outside world.

The adoption of generative AI is not just a matter of technological integration. It calls for a transformation of skills, processes and sometimes even organizational culture. Identifying your organization's level of maturity is the first step towards successful adoption.

Would you like to assess your organization's level of AI maturity?

Try out
the CEGOS
AI profiler



Learn more: CEGOS AI PROFILER

This table presents the four levels of maturity in generative AI, in summary form, integrating:

- the criteria for identifying your organization's AI maturity
- examples of uses,
- the skills required,
- priority actions to make progress.

Level	Description	Criteria for assessment	Examples of uses	Skills to be developed	Actions to make progress
Explorer	A company beginning to explore generative AI through one-off, unstructured uses.	<ul style="list-style-type: none"> - Opportunistic use of AI tools (individual initiatives) - Limited knowledge of AI concepts. - No known concrete use cases 	<ul style="list-style-type: none"> - Drafting of marketing content. - Basic automated responses. - Creative brainstorming. 	<p>Specific: Introduction to AI tools, AI onboarding, understanding the risks (bias, false perceptions, intellectual property, confidentiality).</p> <p>Cross-cutting: Curiosity, open-mindedness.</p>	<ul style="list-style-type: none"> - Raise team awareness with introductory workshops. - Identify business needs. - Set out an AI code of conduct. - Centralize experiments to distill lessons learned.
Learner	An organization beginning to structure its AI initiatives, with a focus on developing employees' skills.	<ul style="list-style-type: none"> - Launch of pilot projects in various departments. - Deployment of AI training for teams. - No AI strategy or governance. 	<ul style="list-style-type: none"> - Analysis of customer data (opinions, feedback). - HR automation (CV sorting). - Preparation of automated reports. 	<p>Specific: AI knowledge applied to business processes, development of critical thinking skills.</p> <p>Cross-cutting: critical thinking, collaboration.</p>	<ul style="list-style-type: none"> - Train "AI champions" to steer initiatives. - Strengthen the AI culture through training applied to the business and certification. - Structure a roadmap for integrating AI into.
Adopter	A company that has integrated AI into several business processes with clear governance and an appropriate technical infrastructure.	<ul style="list-style-type: none"> - Structured deployment in several functions. - Existence of an AI Academy. - Investment in AI technologies (cloud, data). 	<ul style="list-style-type: none"> - Advanced marketing personalization. - Logistics optimization. - Automation of complex administrative tasks. 	<p>Specific: AI project management, infrastructure and analysis, in-depth AI ethics.</p> <p>Cross-cutting: Change management, agility.</p>	<ul style="list-style-type: none"> - Prioritize strategic AI investments. - Create AI governance (ethics, compliance). - Standardize AI tools and practices across the company.
Transformer	An organization that has placed AI at the heart of its strategy, reinventing its processes and business model through continuous innovation.	<ul style="list-style-type: none"> - AI is ubiquitous across all departments. - Change of business model enabled by AI. - Strong culture of innovation and continuous learning. 	<ul style="list-style-type: none"> - Creation of their own large language models (LLMs). - Hyper-personalization of customer experiences. - End-to-end automation of the value chain. 	<p>Specific: Advanced AI techniques, AI leadership, strategic innovation, continuous intelligence and Knowledge Management.</p> <p>Cross-cutting: Strategic vision, mentoring.</p>	<ul style="list-style-type: none"> - Encourage open innovation through partnerships. - Provide ongoing training for all teams. - Share innovation within the ecosystem (conferences, publications).

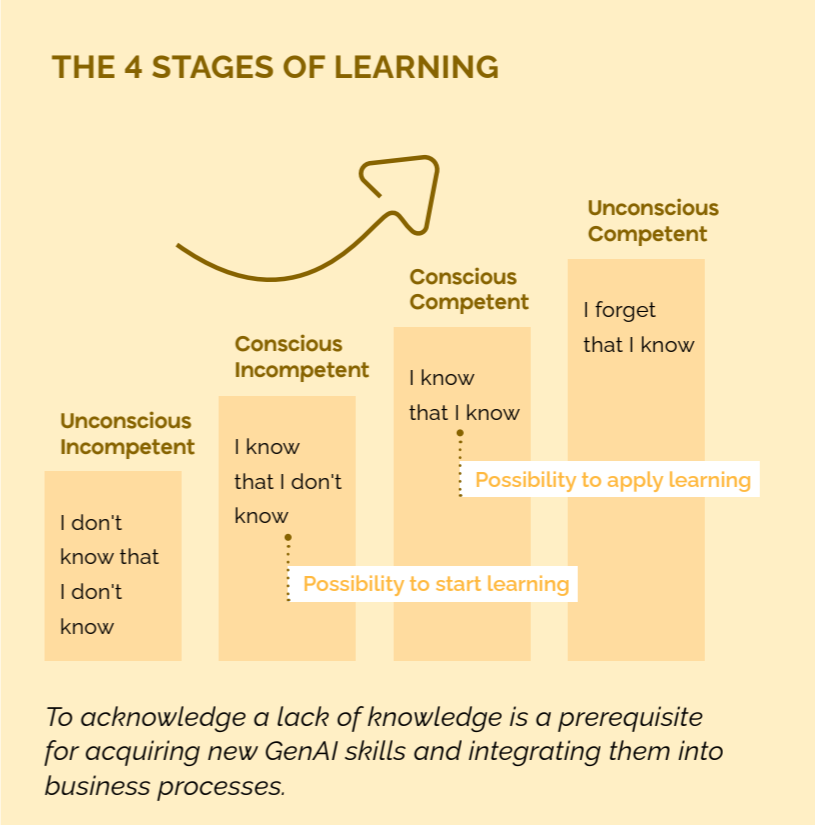


Developing an AI culture within your organization: an essential first step

Moving from the "unconscious incompetence" to the "conscious incompetence" stage

The integration of generative AI depends first and foremost on a solid cultural foundation. At this stage, it is not yet a question of training experts, but of making each employee aware of what GenAI represents, its opportunities and the associated risks.

An employee with "unconscious incompetence" is unaware of all the possible uses of GenAI, but also unaware of its limitations. For example, they might use a tool like ChatGPT without questioning the confidentiality of the data they enter or the reliability of the responses generated. The role of onboarding is to raise this employee to the stage of "conscious incompetence", understanding both the existence, uses and risks of GenAI, while at the same time being encouraged to take further training.



Creating a breeding ground for collective innovation

Beyond simple awareness, this onboarding stage creates the conditions for collective innovation. A widespread AI culture stimulates creativity and encourages employees to identify new applications suited to their business. Such creativity stems from a shared culture, not from a restricted circle of technical experts.

Reducing resistance

Finally, this awareness-raising approach plays a decisive role in reducing resistance. Widespread adoption of GenAI requires the technology to be demystified and any legitimate fears to be allayed: fear of automation, bias or ethical problems. Without this initial familiarization, there is a risk that the organization will become divided between those who understand and utilize it and those who ignore or fear it, thereby limiting its potential for transformation.

Training as a springboard for effective and ethical adoption

An effective onboarding program must meet several imperatives:

- **Accessibility:** training courses must be adapted to non-technical profiles, using clear language and concrete examples.
- **Short, modular formats:** awareness-raising modules must fit easily into busy schedules and have the capacity to train large numbers of people in a short space of time.
- **Risk management dimension:** incorporating a "risk and ethics" component into each program is essential to guide the use of the GenAI.

In view of these imperatives, here are a few training methods that are suitable for running a GenAI appropriation program:

- **Micro-learning:** these short modules, lasting 5 to 10 minutes - sometimes less - allow employees to discover GenAI at their own pace, with quizzes to assess their progress.
- **Workshops:** an introduction to the fundamental concepts with practical case studies - in which employees use GenAI tools to solve specific problems.
- **Online courses:** modules enabling learners to progress at their own pace while testing their knowledge through quizzes and practical exercises orchestrated by tutors.
- **Internal mentoring:** organize a network of ambassadors or "AI champions" among employees to spread the GenAI culture organically. These trained ambassadors are sure to relay knowledge and ideas to their teams, spreading the AI culture by example and helping their colleagues to overcome their hesitations.

Finally, it is essential to measure the impact of an GenAI onboarding program, from initial assessment to post-training follow-up.

The first step is to use simple but meaningful indicators:

- **Participation and satisfaction rates:** measure employee commitment to show that the training has been successful.
- **Progression of knowledge:** assess understanding of key concepts via pre- and post-training quizzes.
- **Tool adoption:** monitor the rate and quality of use of GenAI within the organization: frequency of use, nature of automated tasks, user feedback.
- **Operational impact:** list and centralize use cases, experiment with teams and analyze feedback from employees on the usefulness of the tools in their day-to-day work. This may include a measurable increase in productivity, better quality deliverables or improved customer satisfaction.



5 practical recommendations for initiating a GenAI onboarding program in your company

- 1. Diagnose your current maturity**
Assess your existing AI maturity and culture. Identify the gaps between employee perception and actual understanding.
- 2. Choose the right teaching formats**
Combine e-learning modules (for a general audience) and immersive workshops (for more in-depth training). Adapt the formats to your objectives and the availability of your teams.
- 3. Stimulate your teams' commitment**
Make learning attractive with fun approaches (gamification, badges) and promote efforts in internal communications.
- 4. Involve your managers**
Involve your managers as AI ambassadors. Their involvement strengthens the credibility and support of your teams.
- 5. Monitor, adjust and celebrate your successes**
Analyze feedback to improve content. Highlight the first concrete results to motivate the team and promote good practice.

Find out more about the Cegos training course "Next-Gen Training: AI-Driven Design, Facilitation, and Evaluation".





Promoting the integration of AI into business and professional practices



GenAI is gradually becoming an essential tool in the professional world, and it is still impossible to predict its countless practical applications in the workplace.

It offers many benefits in a professional environment:

- **Deliver quality and productivity gains** through task automation, process optimization and cost reduction;
- **Strengthen and facilitate decision-making** by providing advanced and predictive analysis while reducing human error;
- **Improve the customer experience** with personalized solutions and intelligent support;
- **Contribute to innovation**, the creation of new products and the acceleration of research;
- **Bolster competitiveness** by making businesses more agile and differentiated, while also having a positive impact on the environment by optimizing resources.

However, these benefits depend on the strategic integration of AI, the implementation of appropriate risk management and employee support.

Find out more about the Cegos training course
"AI for Productivity and Effectiveness: How to
Integrate AI in My Daily Work"



In the beginning was the prompt: a fundamental key to success

The quality of the results provided by GenAI depends to a very large extent on the quality of the prompts, i.e., the instructions given to the AI. A good, clear and precise prompt will provide more relevant answers tailored to the user's specific needs. However, this stage requires specific know-how that covers understanding the tool, identifying the necessary information and asking the right questions.

Why is knowing how to prompt essential?

- **Accurate results:** A well-designed prompt provides relevant, contextualized and usable responses.
- **Time saved:** Accurate queries reduce the need for asking repeatedly and making adjustments.
- **Environmental impact:** According to the 2024 digital eco-design barometer¹, a complex prompt is less costly for the environment than 5 successive prompts on generative artificial intelligence interfaces. Knowing how to write an effective prompt could save 1,644,249 liters of water and 109,616 kg eq.CO2.

It therefore seems essential for every organization to invest in coaching and training its employees in the "art of prompt writing". This will involve learning how to formulate requests correctly, and then understanding how to refine them as the results are obtained to achieve optimum results.

Prompting according to Cegos: the DIALOG method (© Cegos)

To ensure optimal use of GenAI, Cegos has designed the DIALOG method.

This six-step approach guides users in developing more effective prompts that are tailored to their objectives.

Each step of the DIALOG method is based on the idea of continuously improving interaction with AI and supporting users in their learning process.

Define the objectives and draw up an initial prompt:

Clarify what you are trying to achieve and give the AI as many elements as possible.

Interpret the answers critically:

Know what information is needed and reformulate your prompt.

Adjust and deepen the conversation:

Tailor queries to business requirements.

Limit risks:

Respect safeguards from the first prompt by avoiding the disclosure of sensitive data.

Optimize the conversation:

Refine prompts as results are obtained to achieve the desired accuracy.

Give priority to keeping the content (or not):

Validate the final content or reset a new conversation.

1.2024 Digital Eco-design Barometer - La bataille de l'environnement est-elle perdue pour le digital ? (Is the environmental battle lost for digital?) Razorfish - Green IT - So good



Ethics, security, confidentiality: incorporating safeguards into all AI training

Artificial intelligence raises ethical and security issues, particularly with regard to the management of sensitive data and automated decision-making. Before considering large-scale deployment of the GenAI, companies and organizations must establish rules and codes of conduct to avoid any drift and guarantee responsible use.

It is also essential to incorporate these concepts into any training in the use of AI, so as to create awareness within teams.

• GenAI ethics

Ethical concepts must be integrated into all AI training. Indeed, ethics are a central issue for organizations adopting GenAI. It is imperative that AI systems are designed and used in such a way as to avoid reproducing or amplifying social or discriminatory biases. Organizations must therefore ensure that their algorithms are built fairly, that the data used to train them is representative, and that regular audit mechanisms are put in place to identify and correct any potential bias.

• Data security and confidentiality

The notion of data security must also be addressed during GenAI training courses, as it is evidently crucial for any organization. In this respect, companies are well advised to adopt rigorous measures, such as data encryption, access control and anomaly monitoring. Regular audits also help to guarantee the effectiveness of protocols and prevent leaks or abuse.

• Establishing an AI code of conduct for the organization

Such a code will be truly useful if it is accompanied by a sense of ownership and if its principles are illustrated in the training courses set up for employees. This type of document makes it possible to specify governance in terms of GenAI, authorized uses, precautions to be taken and the company's values in relation to this technology. It may also include rules on data confidentiality, verification of content generated and responsible consumption of resources.



Integrating AI into business processes for maximum impact and enhanced skills

To identify and maximize the benefits of GenAI within an organization, it is essential to adopt an approach centered on business processes.

Such an approach requires an accurate assessment of internal practices and a clear, detailed understanding of operational processes: mapping of all workflows, identification of critical points or inefficiencies, understanding of interactions between the various functions in the organization. It is thanks to this vision, which is both global and operational, that the company can determine the business lines and processes for which GenAI will bring real added value.

This preliminary stage is crucial: firstly, it helps to avoid superficial or ill-adapted deployment of GenAI and to counter internal resistance.

Above all, it enables the company to put GenAI at the service of its strategic objectives by creating a clear roadmap, deploying the highest-impact projects and promoting the gradual, targeted integration of these technologies.

It is the combination of technology and human know-how that is transforming our businesses and opening up new horizons.

By automating certain tasks and enriching data analysis, GenAI makes it possible to gain efficiency while freeing up time for high added-value missions.

In so doing, GenAI is revolutionizing professional practices by enhancing human skills.

Here are just a few examples of the applications and 'skills enhanced' by GenAI in business and professional practices.

Our teams provide a wide range of AI training courses to companies and organizations of all sizes and in all sectors, in a wide range of professions.



A few examples of 'skills enhanced' by GenAI

GenAI and communication professions: towards an "augmented" communicator

- **Sentiment analysis**
Using social media to detect opinions and trends to better understand audience expectations.
- **Creative support**
Helping to generate innovative ideas or concepts, enabling communicators to focus on strategy.
- **Campaign personalization**
Tailoring messages and content in real time to precisely target each segment, improving their impact.
- **Informed decision-making**
Using predictive analysis to plan actions based on trends and historical data.
- **Performance optimization**
Analyzing data to adjust communication strategies and maximize return on investment.

GenAI and Human Resources: using artificial intelligence to enhance human relations.

- **Recruitment**
 - Drafting attractive advertisements
 - Drawing up a questioning guide to validate the candidate profile
 - Preparing a summary comparing candidates
 - Conducting interview training with AI
- **Performance analysis**
Monitoring performance data to identify employees' strengths and areas for development.
- **Enhancement of the candidate experience**
Using chatbots to answer candidates' questions and guide them through the recruitment process.
- **Strategic workforce planning**
Forecasting staffing requirements based on internal data and market trends.
- **Employee engagement**
Monitoring engagement indicators using data analysis tools, to anticipate the risk of turnover.
- **Skills management**
Mapping skills within the company to plan recruitment or training needs.
- **Job satisfaction monitoring**
Analyzing employee feedback to identify issues and improve corporate well-being.
- **Customized training**
Providing recommendations for training programs tailored to the skills and objectives of each employee.
- **Automation of administrative tasks**
Managing holidays, pay slips or declarations by automating current processes.

in business and professional practices

Creating content: GenAI as a means of boosting creativity

- **Creating editorial content**
Blog posts, social network posts, post captions or account bio, e-mailing, etc.
- **Creating an omnichannel content strategy**
Comprehensive, personalized content marketing strategy
- **Creating visual content**
Creating or retouching images, creating videos, overlaying text, cloning videos, etc.
- **Creating advertising campaigns**
Target definition, content suggestions, advertising hooks
- **Creating audio**
Generating a voice from a text, translating a video into several languages
- **Creating editorial calendars for social networks**
Defining the approach, creating a schedule

GenAI and project management: transforming and optimizing each stage of the value chain

- **Resource planning and management**
AI optimizes resource allocation by analyzing historical data to predict labor, budget and material requirements. It anticipates bottlenecks and minimizes unforeseen events, ensuring optimum use of resources.
- **Collaboration and communication**
AI centralized information, suggests actions to be taken and reminds people of important deadlines. Virtual assistants automate administrative tasks, leaving teams more time for strategic exchanges.
- **Risk monitoring and management**
In real time, AI monitors KPIs and alerts you to emerging risks, such as delays or cost overruns. It suggests rapid corrective action, preventing problems from escalating.
- **Informed decision-making**
AI detects trends and makes fact-based recommendations. This enables project managers to make accurate and informed decisions, enhancing the quality of management.
- **Time and cost optimization**
AI tools accurately estimate completion times and identify the adjustments needed to meet budget constraints. This proactive management reduces the risk of overruns and improves overall efficiency.

GenAI as a sales aid: preparing for a sales meeting

Mega prompts help sales reps to quickly analyze data on a potential customer's needs, preferences and behavior before a meeting.

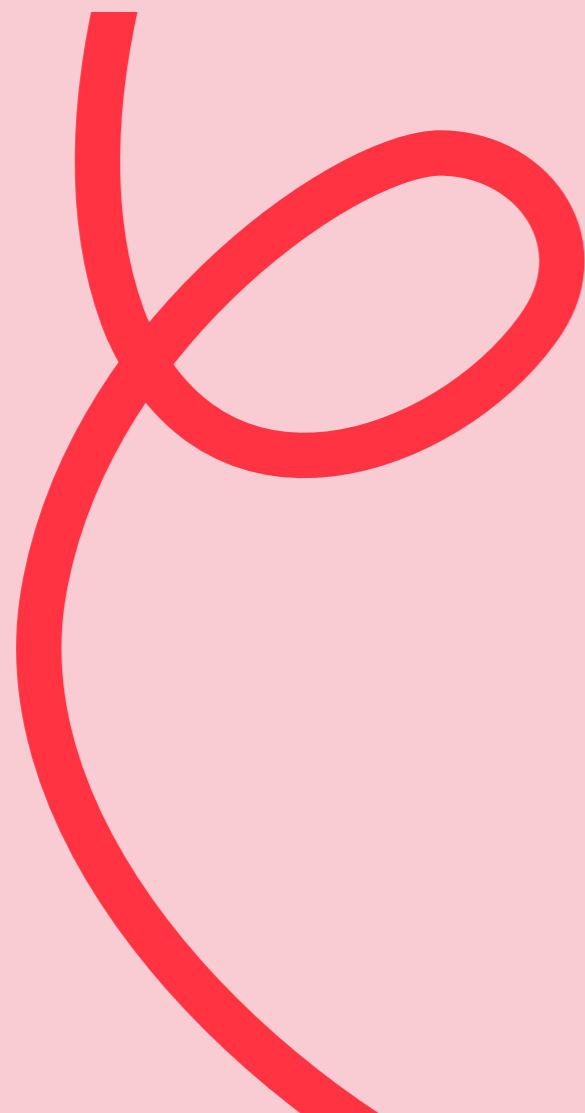
The mega prompts enable precise questions to be asked of the AI, incorporating information from internal databases, historical exchanges and sectoral trends.

The result is an in-depth, contextualized understanding of the customer's expectations, enabling sales staff to prepare tailored solutions and maximize their chances of success.

Find out more about Cegos training course "Boosting Sales Prospecting with AI"



Developing interpersonal and human skills for an effective use of generative AI



Whether we are talking about the opportunities associated with AI or the risks it presents, the skills associated with human intelligence are decisive if we are to approach this technological breakthrough in a way that is both ethical and effective.

The attention paid to the development of interpersonal skills brings a vital balance of human beings and technology.

To secure and maximize the use of GenAI within your organization, you can approach the development of the skills of your managers and teams from 3 complementary angles:

- **Developing specific cognitive skills, such as critical thinking and bias management, to limit the risks associated with the use of GenAI**
- **Strengthening the socio-emotional skills that distinguish us from artificial intelligence**
- **Fostering the "growth mindset" that enables people to learn how to learn, and then move on to action.**



Critical thinking: a crucial skill for using GenAI in a distanced way

According to Fisher & Scriven (1997), critical thinking consists of conceptualizing, analyzing and evaluating information to guide one's actions and beliefs. In practical terms, this means:

- Exploring deductive thinking to solve problems.
- Critically analyzing alternative solutions.
- Structuring robust arguments.
- Using considered methods to make informed decisions.

To counter the biases and hallucinations generated by GenAI, it is essential to know how to analyze and sort information and then question the answers and data provided. Critical thinking is therefore undoubtedly a key analytical skill in the use of GenAI.

As the Fisher & Scriven definition shows, the process of critical thinking involves a large number of factors, skills and qualities:

"Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action."

To enrich this definition, the diagram below shows the characteristics of critical thinking as established by Paul and Elder in 2008.

It shows that critical thinking is the result of the interaction of a number of factors: intellectual standards (clarity, logic, integrity, etc.) applied to elements of reasoning (goals, points of view, concepts, etc.), themselves mobilized by developing a number of qualities specific to human functioning (intellectual humility, intellectual autonomy, confidence in reason, etc.).

CHARACTERISTICS OF CRITICAL THINKING - Paul & Elder (2008)

Intellectual standards

- Clarity
- Precision
- Relevance
- Rationale
- Scope
- Accuracy
- Interest
- Integrity
- Impartiality
- Depth

Are applied to

Points of reasoning

- Aims
- Questions
- Points of view
- Information
- Inferences
- Concepts
- Implications
- Assumptions

By learning

To develop

Intellectual qualities

- Intellectual humility
- Intellectual autonomy
- Intellectual integrity
- Intellectual courage
- Intellectual perseverance
- Confidence in reason
- Intellectual empathy
- Right-mindedness

Find out more about the Cegos training course "Critical Thinking for Effective Problem Solving"



Combining skills to inform decision-making

To be able to think critically, you need to be able to mobilize several types of skills:

- **Analytical cognitive skills**, which enable you to analyze, sort and question information.
- **Socio-emotional skills**, which enable you to confront your ideas and convictions in an open exchange with others.

It is the combination of these two types of skills, analytical on the one hand and socio-emotional on the other, that forms a powerful "macro-skill" that facilitates decision-making in increasingly complex contexts.

This ability to think critically by mobilizing analytical and socio-emotional skills therefore applies in particular to the choices and adjustments to be made in the use of GenAI.

Overcoming bias to gain insight and analytical capacity

It has now been established that to make good use of the GenAI, you need to be able to avoid certain pitfalls. But these pitfalls are not necessarily linked to the technology itself: they also have a lot to do with the way we humans operate, including our own biases.

Biases are "mental shortcuts" that help us to act and decide more quickly. While we can see the advantages of this thinking process in a world where everything is changing faster and faster, this automatic functioning of the brain can also impair our ability to make critical judgements, and therefore mislead us.

Two factors in particular activate or reinforce our biases or "mental shortcuts":

- **Emotional intensity:** when we feel something strongly, our brain imprints our interpretation more strongly in a neural pathway.
- **The need for speed:** to act quickly, we take shortcuts. We save time by mobilizing responses

integrated by the brain, thus avoiding taking the time to process the information. Stress and fatigue in particular encourage these "brain shortcuts".

Two examples of biases or "shortcuts" that influence our free will and behavior:

- **Fixation bias** occurs when one idea or perspective monopolizes our attention and slows down the search for original alternative solutions. The most damaging consequence of this bias is premature abandonment of the search for solutions.
- **Automation bias** occurs when we have to make a decision and we trust machines over our own judgements.

Learning to overcome our own biases is therefore important, both personally and professionally. This is just as important for the informed use of GenAI.

Developing human socio-emotional skills to interact with AI

Socio-emotional skills are particularly useful for making responsible decisions, building stable and lasting relationships and resolving conflicts. They have an impact on our performance, but also on our physical and mental health.

As such, they are levers that everyone can use in their daily lives to gain peace of mind and complement the use of GenAI.

Here are some of the socio-emotional skills that need to be developed, both individually and within teams, in order to understand and use GenAI, capitalizing on our fundamentally human capacities:

Emotional intelligence

While AI is beginning to decipher emotions by analyzing and storing our behavior, habits and reactions, its capabilities are still limited when it comes to demonstrating emotional intelligence. This complex concept covers both the identification and management of our own emotions (intrapersonal emotional intelligence factors) and the ability to understand and use the emotions of others (interpersonal emotional intelligence factors). GenAI can understand

needs and show compassion, but they do not take into account the subjectivity that gives access to emotional intelligence and all its nuances, a fundamental notion within any organization.

Find out more about the Cegos training course "Emotional Intelligence at work"



Empathy

Empathy is a fine, multi-dimensional skill (cognitive, emotional and compassionate empathy). Today, this skill is particularly sought after within organizations to create social cohesion and a positive corporate culture. This ability to feel, to put oneself in another's shoes, remains a major challenge for AI. Imitating empathetic behavior is possible, but welcoming and responding in a perfectly adapted way requires cognitive complexity and emotional empathy. Humans create emotional resonance at a time when the quality of the relationship with others is becoming a source of performance.

Collaborative working and collective intelligence

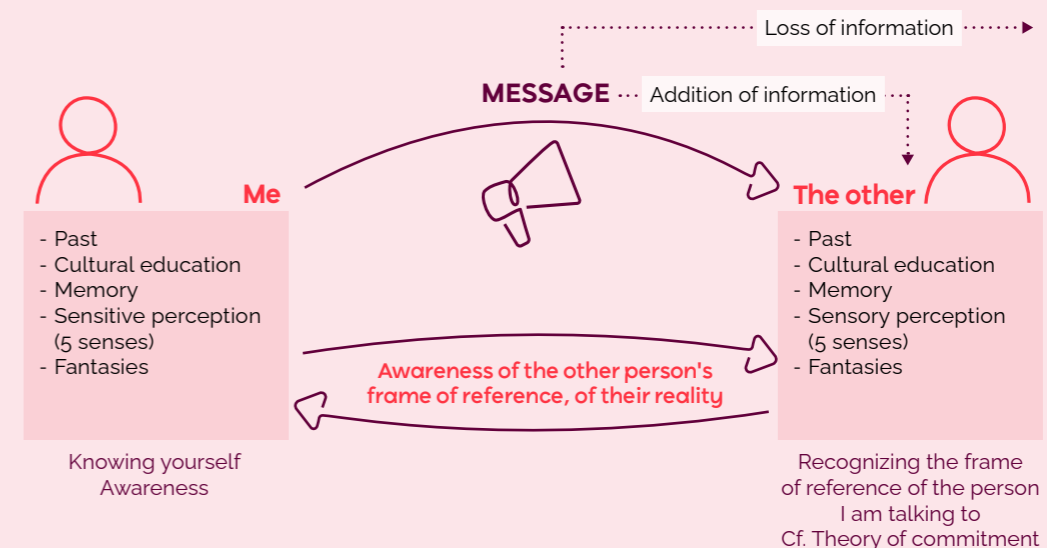
The collective intelligence of a group is determined by the diversity of its members, which multiplies creativity, idea and perspectives. This diversity is crucial and can be attributed to a number of factors: culture, gender, brain function (neurodiversity), etc.

Integrating profiles that are different from one's own is a complex skill that generative AI has not yet mastered. It requires what we might call relational finesse, which is built up on the basis of experience and interpersonal skills built into our lives over time. As diversity and collective intelligence are major performance drivers for any organization, it is particularly important to develop them.

Communication skills

As shown in the diagram below, inspired by the frame of reference defined by sociologist and philosopher Edgar Morin, the individual "audits" their frame of reference and that of the other person in order to be able to communicate effectively with them. It is this awareness of self and other that enables an effective connection. However, understanding the other person's frame of reference (their past, their experience, their education, their feelings, etc.) remains the prerogative of human beings today. The ability to communicate therefore remains a fundamentally human skill that we should continue to develop in general, and in particular in the era of GenAI.

THE FRAME OF REFERENCE - Edgar Morin



Developing your "growth mindset" to learn how to learn in the face of GenAI

The effective and ethical appropriation of RMIs requires the development of certain cognitive and interpersonal skills.

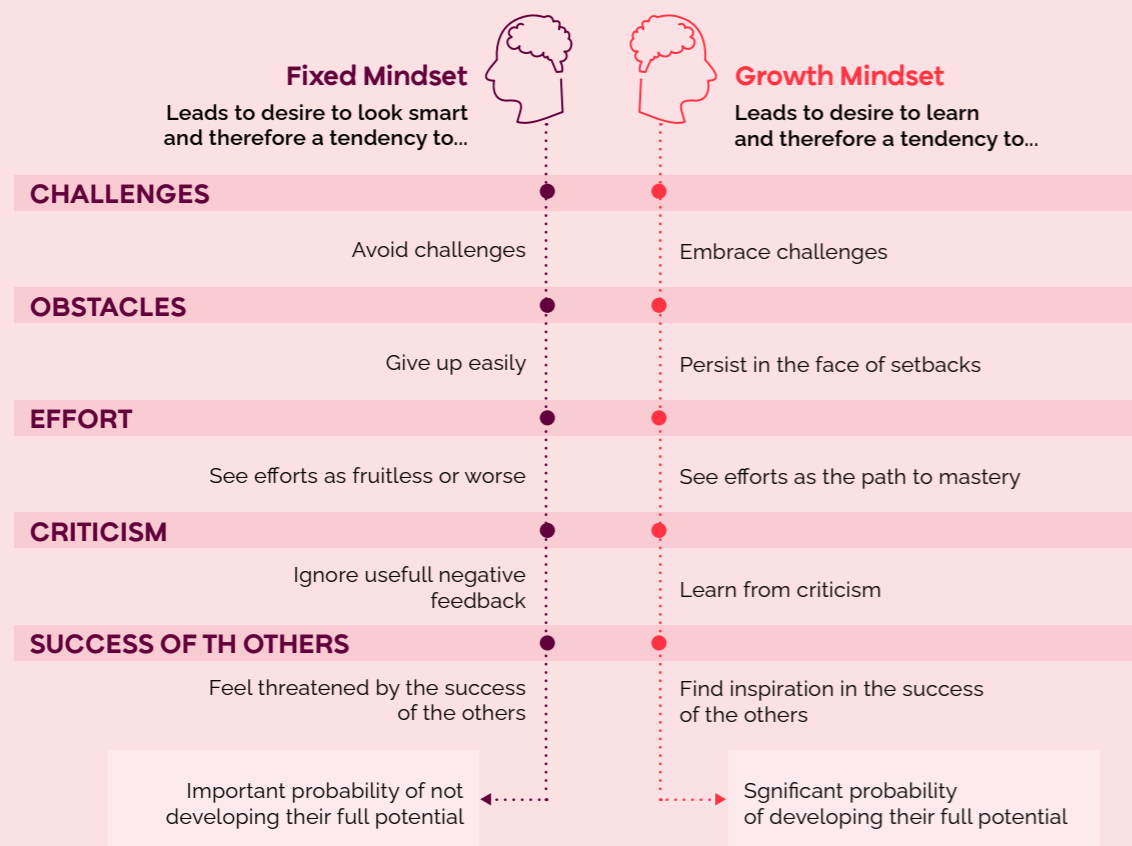
In this sense, the emergence and growing importance of these technologies encourages people to train and adapt. This need creates a positive momentum, encouraging everyone to take responsibility for their own development, and hence their employability.

To be able to make choices about their own development and take action, individuals must "learn to learn". And to learn how to learn, they need to develop what Carol Dweck, Professor of Social Psychology at Stanford University, calls the "growth mindset".

In her theory, and as shown in the diagram below, Carol Dweck contrasts the growth mindset with the fixed mindset.

- **Fixed mindset:** Individuals perceive their talents and skills as innate and unchangeable. Their success depends on external recognition, limiting their ability to progress in the face of setbacks.
- **Growth mindset:** Individuals see skills as evolving, strengthened by effort and learning. Challenges become opportunities for progression, where failure is seen as a step towards improvement.

GROWTH MINDSET VERSUS FIXED MINDSET



Developing your growth mindset* enables you to identify your personal value and potential for growth, as part of a lifelong learning approach.

This "growth mindset" also fosters resilience and adaptability, essential qualities for evolving in an environment increasingly marked by technological and organizational change.

We have identified 6 key steps for developing and embedding this mindset.

THE 6 KEY STEPS TOWARDS THE GROWTH MINDSET

- 1 Gain self-awareness:** know your strengths, assets, resources and areas for improvement. Transform what we lack into an opportunity for growth.
- 2 Be bold:** taking initiative and risks is an integral part of the path to professional and personal development and growth
- 3 Change the way we look at failure:** setbacks and failures can be viewed as sources of growth and learning.
- 4 Maintain flexibility and perseverance:** see effort as part of the process, know how to adapt to the unexpected and manage your energy.
- 5 Welcome criticism and feedback:** use the eyes of others to identify your blind spots
- 6 Be inspired by those who succeed** and avoid comparing yourself with others.

Find out more about the Cegos training course "Growth mindset: reinventing yourself professionally"



Developing the skills to combine generative AI and ecology



There is a lot of talk about the challenge of ensuring a balance between GenAI and human intelligence. But the other major challenge is to reconcile the accelerated development of AI uses with the ecological imperative.

There is a paradox associated with GenAI: on the one hand, it is a major source of progress, in particular thanks to the forecasts it generates (climate forecasts, optimization of infrastructure networks, etc.). On the other hand, they are becoming more and more energy-hungry, at the heart of ever more numerous and powerful data centers.

Once again, the solutions for reconciling AI and ecology will undoubtedly come from the collective intelligence of the many players involved (users, businesses, public authorities, NGOs, AI professionals, etc.).

The French Economic, Social and Environmental Council (CESE) is examining the issue, and a number of avenues are taking shape*:

- Measuring the impact of AI on sustainable development objectives
- Creating frugal AI
- Recommending a benchmark for assessing the environmental footprint of AI

Eco-design and sobriety are obviously key to successfully designing and using AI that is as environmentally friendly as possible.

As always, training is also a powerful lever for promoting responsible use.

As a result, Cegos teams are committed to supporting companies in these innovative areas linked to AI, and include best practices and precautions to consider in terms of environmental impact in the training courses they offer.

Taking account of the environmental impact of GenAI in their appropriation means protecting ourselves against risks for the future and giving us the opportunity to exploit their full potential within organizations.

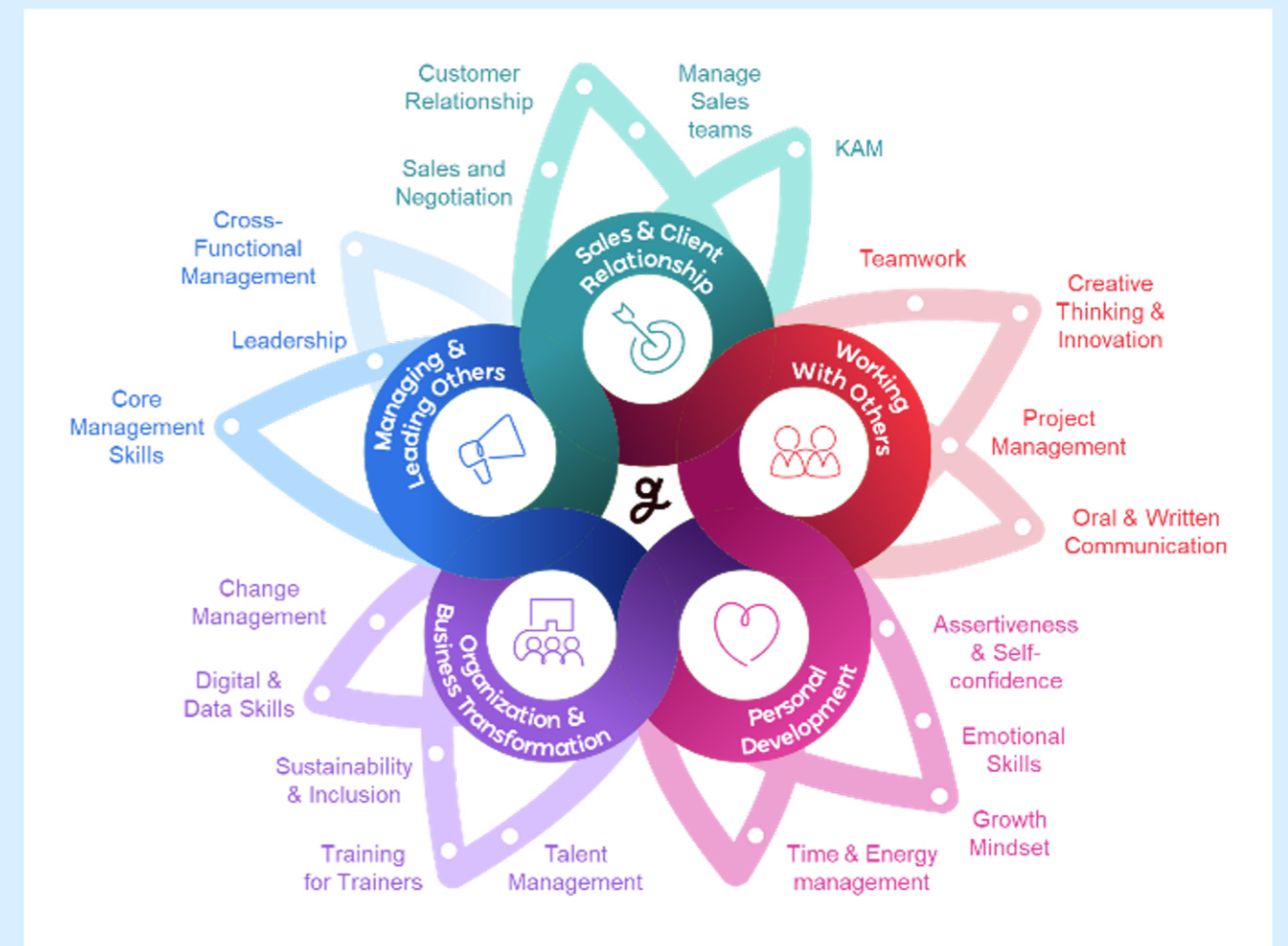
*CESE Report - Impacts of Artificial Intelligence: Risks and Opportunities for the Environment - October 2024

Cegos helps you get to grips with AI through skills development

The Cegos Group Learning Collection: train your teams internationally

Our Cegos Group Learning Collection is organized into **5 major skills areas**, with **20 associated core skills for today and tomorrow**.

The courses in the collection are available in up to 30 languages.



This collection covers a wide range of AI-related training courses

- **Training in the transversal skills that are fundamental for interacting with AI**, such as creative thinking and innovation, communication, teamwork, sustainability and inclusion.
- **Training more specifically focused on AI and its uses**
 - AI for productivity and efficiency: How to integrate AI into your day-to-day work
 - Next-generation training: AI-driven design, facilitation and assessment
 - AI skills for managers
 - Improving sales prospecting with AI



Working with you to turn skills into performance

More digital, more cross-functional, more open, more responsible... Just like its environment, your organization is always on the move.

Since the rapid adaptation of your teams is a key factor in competitiveness, their skills are a strategic intangible asset.

Whatever your skills challenge, the Cegos teams can help.



Professionalize your teams to improve individual and collective performance

We support the development of your organization's people and businesses, from mastering fundamental skills to supporting professional development.



Developing skills to turn change into opportunity

We support and train your teams in changes to their business, management, technology, CSR, tools, Learning & Development, etc.



Roll out your training projects internationally

Cegos teams are at your side anywhere in the world to roll out your projects, create an international catalogue or provide direct support to your Learning & Development teams.



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