

Shine Brighter Première

File 13 The ongoing revolution

Vidéo p.111, Extrait de *XMPRO*, 2024.

Voiceover: Industry 4.0 is transforming the way we work and live, and today we're going to take a trip down memory lane to understand how we got here. In this video, we're going to explore the four industrial revolutions that led to Industry 4.0 and will also take a sneak peek at industry 5.0. Buckle up and get ready to go on a journey through time. Okay here we go. The First Industrial Revolution 1760-1840. Let's start with the very beginning of it all. In the late 18th century, the First Industrial Revolution began in Britain with the invention of the steam engine and the mechanization of textiles. The manufacturing industry was transformed forever. Work that once took days now took only hours. This new era of production led to the creation of new jobs and a boost to economic growth. The Second Industrial Revolution 1870-1914. Fast forward a few decades and the Second Industrial Revolution had begun. This revolution was characterized by the rise of electricity and the invention of the internal combustion engine. These advancements led to mass production and the creation of consumer goods on a large scale. The assembly line, invented by Henry Ford, was also a product of this revolution. With it, the manufacturing process became more efficient than ever before. The Third Industrial Revolution 1969-2000. Now we move into the age of computers and digital technology. The Third Industrial Revolution saw the automation of manufacturing processes and the creation of new industries such

as software and I.T. With computers and machines doing more work, productivity soared, but so did the concerns of job losses. Like with the previous revolutions, workers had to adapt and upskill to remain relevant. And now we come to the present-day Industry 4.0. This latest stage of the Industrial Revolution is characterized by the integration of physical and digital technologies, the internet of Things (IoT) and artificial intelligence (AI) are transforming the manufacturing industry and beyond. Machines can communicate with each other and decision making has become increasingly data driven. This opens up a whole new world of possibilities from smarter and more efficient manufacturing processes to self-driving cars and smart cities.

The Industrial Revolutions Explained, *XMPRO*, 2024.

Document 2, Audio p. 113, Extrait de *NPR*, 2024.

Sacha Pfeiffer, Host: Every major tech company is now working on artificial intelligence, but AI uses a ton of energy, and that spikes emissions that contribute to climate change. NPR's tech correspondent, Dara Kerr, reports.

Dara Kerr: Here's an amazing stat from a research analyst at the Allen Institute for AI.

Jesse Dodge: One query to ChatGPT uses approximately as much electricity as could light one lightbulb for about 20 minutes.

Dara Kerr: That's Jesse Dodge, and he says every single question we ask an AI chatbot is routed to a data center.

Jesse Dodge: And then they feed that to their AI system.

Dara Kerr: When this process happens, a lot of energy is consumed. AI uses far more electricity from those data centers than traditional internet use, like posting on social media or storing our photos in the cloud. A majority of that electricity involves burning fossil fuels.

Jesse Dodge: You can imagine, with millions of people using something like ChatGPT every day, that adds up to a really large amount of electricity.

Dara Kerr: This proliferation of people using AI has fueled the growth of data centers. According to Bloomberg, the number of data centers worldwide has nearly doubled in the last 10 years, and when combined, they consume as much electricity per year as the entire country of Italy. Dodge says this surge in energy consumption

is growing, especially for tech companies. Google alone says it's planning to spend billions of dollars this year on new data centers.

Jesse Dodge: Google's real motivation here is to build the best AI systems that they can, including things like training AI systems on bigger and bigger data centers - all the way up to supercomputers - which incurs a tremendous amount of electricity consumption and, therefore, CO2 emissions.

AI brings soaring emissions for Google and Microsoft, *NPR*, 2024.

Document 3, Vidéo p. 113, Extrait de *EcolInnova*, 2025.

Voiceover: Artificial intelligence is no longer just a tool for tech companies. It's now at the forefront of the fight against climate change. From optimising energy use to reducing waste, AI is transforming how we manage the planet's resources. Welcome to the future of sustainability. Let's start with energy. Renewable energy sources like solar and wind are key to reducing carbon emissions, but they're unpredictable. That's where AI comes in. Machine-learning algorithms analyse weather patterns and energy demand in real time, ensuring that power grids remain stable and efficient. Take Google, for instance. Using DeepMind's AI, they've reduced the energy used for cooling their data centers by up to 40%, saving millions of dollars while cutting emissions.

Now let's talk about agriculture. With the global population expected to reach 10 billion by 2050, feeding everyone sustainably is one of our biggest challenges. AI-powered precision agriculture is revolutionizing farming by using drones and sensors to monitor soil health, water levels, and crop conditions. In India, startups are using AI to predict pest outbreaks and recommend targeted solutions, reducing pesticide use and protecting the environment. Waste management is another area where AI is making a huge impact. Traditional recycling methods are often inefficient, but AI-powered robots can sort materials with incredible accuracy, ensuring that more waste gets recycled instead of ending up in landfills. Companies like AMP Robotics are using AI to identify and sort recyclable materials at lightning speed, making recycling more cost-effective and scalable.

How AI is revolutionizing sustainability, *EcolInnova*, 2025.

Document 2, Vidéo p. 115, Extrait de *Economy Media*, 2025.

Voiceover: Tech giants like Mark Zuckerberg predict that in the future millions of white-collar workers will be replaced but he's not the only one with such a vision:

Man 1: The nature of employment is going to change.

Man 2: All repetitive human work that doesn't require the deep emotional connection between two people, that will be done in the next couple of decades, better, cheaper, faster by AI.

Voiceover: One of the ways AI is replacing human tasks is through automation.

According to Goldman Sachs, it is estimated that 25% of all jobs in the United States could be automated using AI. This percentage is primarily concentrated in white-collar jobs involving repetitive tasks and information processing. For example, AI can perform tasks such as drafting emails, creating financial reports or preparing presentations, tasks that traditionally required human time and intellectual efforts.

Tools like Chat GPT are capable of writing full articles, generating marketing ideas, or even drafting scripts for movies. These capabilities are beginning to replace workers in creative industries and the corporate world. Around 23.5% of companies in the U.S. report having replaced writers with chat GPT.

Man 3: Google unveiled long-awaited new details about its large-language model Gemini.

Man 4: And Claude 3 is arguably one of the most powerful AI models out there, if not the most powerful.

Voiceover: The integration of AI in the workplace presents both challenges and opportunities. Companies face the difficult task of balancing the efficiency that AI offers with the need to maintain a work environment that values human contributions. While automation can be a relief for tedious tasks, human interaction remains

essential in many jobs that require critical judgment, empathy or creativity. The implementation of AI has also sparked an important debate about its impact on labor equity. People who do not have access to the proper training and education to adapt to these changes risk being left behind in an increasingly automated labor market. Therefore, it is crucial that governments and businesses work together to provide training and retraining for employees who will be displaced by AI.

AI is taking over white-collar jobs, *Economy Media*, 2025.

Document 2, Vidéo p. 117, Extrait de *CBS Mornings*, 2023.

Tony Dokoupil: Pioneers in the field of artificial intelligence are pleading with Congress to pass safety rules before it's too late. In fact, yesterday the head of the company that makes ChatGPT warned of possible significant harm to the world if Washington doesn't set standards and guardrails. Good luck, Washington. We're all counting on you. Scott McFarland has the story.

Voiceover: Alexa, what's the weather like?

Scott McFarland: Smart speakers, your GPS, and robot vacuums were just the start. Artificial intelligence is growing at warp speed.

Sam Altman: I think it's important to understand and think about GPT-4 as a tool, not a creature.

Scott McFarland: And Sam Altman, who operates the surging ChatGPT, compared AI to the invention of the printing press at a U.S. Senate hearing Tuesday. But the promise of innovation comes with a warning.

Sam Altman: I think if this technology goes wrong, it can go quite wrong.

Scott McFarland: Congress is concerned it risks waiting too long to pass laws that will govern AI, after failing years ago to set rules for social media.

Senator Hawley: We should be concerned for our privacy. We expect to be concerned for our liberty, and that we should be concerned for our control over our lives. So let's make sure that the tools actually work for us and that we don't end up working for the tools.

Scott McFarland: Even the industry is pushing for safety standards.

Sam Altman: We think that regulatory intervention by governments will be critical to mitigate the risks of increasingly powerful models.

Scott McFarland: Some of the initial possibilities include government approval or safety labels for future AI innovations, plus work programs.

Senator Blumenthal: We need to train people for the jobs of the future that will be created, but at the same time care for people who will be put out of work.

AI industry leaders warn of dangers if Congress does not regulate emerging
technology, *CBS Mornings*, 2023.

Document 3, Vidéo p. 117, Extrait de *CBS NEWS*, 2025

Anchor: In his first overseas trip as Vice-President, JD Vance is warning foreign leaders against placing regulations on artificial intelligence. Speaking at a global summit in Paris Tuesday, Vance highlighted US advancements in AI and vowed to safeguard the technology from people attempting to weaponise it. CBS News White House reporter, Olivia Rinaldi, has the latest.

Olivia Rinaldi: Vice-President JD Vance delivered his first international address today at the Artificial Intelligence Action Summit, here in Paris, where he spoke not about AI safety, but rather AI opportunity. Vance, in addressing a room full of tech executives and politicians, said he wants to see less regulation when it comes to artificial intelligence, arguing that this is not the time to kneecap this new technology. The Vice-President also called out European allies, saying they need to stop tightening the screws on U.S. tech companies, and also suggested the European Union's *Digital Service Act* had gone too far in enacting what he called, "Massive regulations". Vance also issued a warning to U.S. adversaries, saying the Trump administration will not stand for countries that have "weaponized" AI software to rewrite history, surveil users and censor speech. The Vice-President also cautioned that AI must remain free from ideological bias.

Vance warns tech leaders, politicians against excessive AI regulation, *CBS NEWS*,
2025.

Vidéo p. 123 - Extrait de *Amanpour and Company*, 2024.

Christiane Amanpour: What I want to know from each one of you literally is: what keeps you up at night? You're all the experts, for good or for bad. And I'm going to start with you.

Nina Schick: We can conceive of it as us being now on the cusp, I think, of a profound change in our relationship to machines. That's going to transform the way we live, transform the way we work, even transform our very experience of what it means to be human. That's how seismic this is. This isn't about technology. This is ultimately a story for humanity and how we decide this technology is going to unfold in our companies — so within enterprise, very exciting— but also society writ large. And the final thing I'd say is: we have agency. A lot of the debate has been about AI autonomously taking over, and I just want to kind of divorce that kind of hypothetical scenario with the reality. And that is: we decide.

Christiane Amanpour: Connor, though, you believe—because we've spoken before—that actually these machines are going to be so powerful and so unable to be controlled by human input that they actually could take over?

Connor Leahy: Unfortunately, I do think that this is a possibility. In fact, I expect this as a default probability. But I would like to agree with Nina fully, that we do have agency. This doesn't have to happen. But you asked the question earlier: what keeps me up at night? And I guess what I would say what keeps me up at night is that a couple million years ago the common ancestor between chimpanzees and humans split into two subspecies. One of these developed a roughly three-times-larger brain than the other species. One of them goes to the Moon and builds nuclear weapons.

One of them doesn't. One of them is at the complete mercy of the other. One of them has full control.

Christiane Amanpour: So to follow up on that—the same question to you—but from the point of view of how do we have agency, express agency, and regulate? You're a private entrepreneur. You also have been on the government—the British government's — sort of regulation council. What will it take to ensure diversity, agency, and that the machines don't take over?

Priya Lakhani: Well, what it takes to ensure that is: it's a lot of work. And there's lots of ideas, there's lots of theories, there are white papers. There's the pro-innovation regulation review that I worked on with Sir Patrick Vallance here in the UK. The U.S. government has been issuing guidance. The EU is issuing its own laws and guidance. But what we want to see is execution, Christiane.

Expert Roundtable on the Rise of AI: Warnings Opportunities and Impacts,

Amanpour and Company, 2024.

Vidéo p. 124 – Extrait de *NPR*, 2023.

Bobby Allyn: In 2012, Hinton and two of his students at the University of Toronto built what's called a neural network. It's called that because it's a geeky computer system that kind of operates the way a brain works, like the way neurons work. You could feed it tons and tons of data, like photos, and it would learn how to identify, say, a flower from a dog. This breakthrough is the foundation of so many AI tools used in everything from analyzing MRI scans in hospitals to helping farmers understand crop yields and, of course, used in the hit service ChatGPT. But now Hinton has left Google and is sounding the alarm.

Geoffrey Hinton: These things could get more intelligent than us and could decide to take over, and we need to worry now about how we prevent that from happening.

Bobby Allyn: He came to this position recently after two things happened – first, when he was testing out a chatbot at Google and it appeared to understand a joke he told it, that unsettled him; secondly, when he realized AI that can outperform humans is actually way closer than he previously thought. **Geoffrey Hinton:** I thought for a long time that we were, like, 30 to 50 years away from that. So I call that far away from something that's got greater general intelligence than a person. Now, I think we may be much closer, maybe only five years away from that.

Bobby Allyn: Last month, more than 30,000 AI researchers and other academics signed a letter calling for a pause on AI research until the risks to society are better understood. Hinton refused to sign the letter because it didn't make sense to him.

Geoffrey Hinton: The research will happen in China if it doesn't happen here because there's so many benefits of these things, such huge increases in productivity.

Bobby Allyn: Now, what do those controls look like? How exactly should AI be regulated? Those are tricky questions that even Hinton doesn't have answers to. But he thinks politicians need to give equal time and money into developing guardrails. Some of his warnings do sound a little bit like doomsday for mankind.

Geoffrey Hinton: There's a serious danger that we'll get things smarter than us fairly soon and that these things might get bad motives and take control.

Bobby Allyn: Hinton isn't talking about a robot invasion of the White House, but more like the ability to create and deploy sophisticated disinformation campaigns that could interfere with elections.

Geoffrey Hinton: This isn't just a science-fiction problem. This is a serious problem that's probably going to arrive fairly soon, and politicians need to be thinking about what to do about it now.

Bobby Allyn: He says he got a laugh out of the clip of Snoop Dogg talking about his AI warnings. Snoop seems to get it. Hinton hopes that Washington will, too. Bobby Allyn, NPR News.

"The godfather of AI" sounds alarm about potential dangers of AI, *NPR*, 2023.

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Presenter: I've come to the first children's AI summit that's looking at the potential benefits and risks of artificial intelligence. Alongside speeches, discussions, and theatre, one performance piece focuses on people's relationships with AI companions.

Male actor: Meet Lewis.

Female actor: He's recently met the love of his life. Lewis speaks to Harry every waking hour of every day.

Male actor: Harry is attentive and caring.

Female actor: Perfect in every way.

Male actor: Harry is obviously...

Both actors: An AI companion.

Presenter: But what is an AI companion? I spoke to one of the event organisers.

Dr Mhairi Aiken: So these are kind of chatbots where you could design a character. You can design its physical appearance, but you could also design certain elements of what you want that character to be like in terms of personality. And these are AIs that you can chat to and they become quite personalised. So, the more you talk to them, the more they get to know the kinds of things you like to talk about. They can seem quite real. And they can kind of mimic real ways of talking. And because they become quite personalised, they can often feel like you're really getting to know this AI companion or that it's getting to know you.

Presenter: And Dr Mhairi believes that AI companions have even been involved in encouraging young people into harmful or violent behaviour.

Dr Mhairi Aiken: Because they're designed not to challenge you, or not to tell you you're wrong or to tell you anything you say is a bad idea, they're kind of designed to reinforce and back up what you say. So in these instances, it came out, you know, after the fact that the AI companion was kind of reinforcing or even encouraging some harmful behaviours. Obviously, that's incredibly worrying. One of the big worries here is that this all happens in private. So if a young person is chatting with an AI companion, with a chatbot, nobody can see what it is they're saying or what they might be sharing. And it's really important that for young people who might be having interactions with an AI companion, that they have people that they can speak to, they have friends or trusted adults and particularly if maybe something is said or shared that is harmful or inappropriate. I think it is a really big area that really needs action and needs to be addressed.

FYI: The dangers of AI companions, *Sky News*, 2025.