

TECHNOLOGY

## How Augmented Intelligence is Bringing the Focus Back on the Human

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*Augmented Intelligence - A form of AI designed not to replace humans, but to help them make better decisions.*

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The influence of artificial intelligence (AI) on the global workforce is a touchy subject loaded with passion, urgency and, ultimately, uncertainty. Academics and businesses cannot avoid discussing and preparing for this transformation, taking practical steps such as reallocating financial resources, investing in worker training, and expanding AI education (**Fleming**, 2020). However, the influence of AI on the workforce has another significant story to tell: one that demonstrates how AI can not only boost market share but also actually increase opportunity and need for human labor.

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This is the hopeful promise of augmented intelligence, a form of AI designed not to replace humans, but to help them make better decisions.

Ironically, the robotic innovations in AI — specifically those bots trained to think like humans and mimic human expression — continue to attract the majority of the popularized mainstream and social media attention. However, it is AI’s ability to *assist and improve* human decision-making and tasks — not replace them — that is leading commercial adoption by helping drive operational value, define risk, manage people and formulate strategy (**de Marcellis-Warin, Munoz, Warin, 2020**).

As an example, AI adoption since 2020 has been the fastest among organizations located in emerging countries, such as China, the Middle East, and North Africa — and, most importantly, the use of AI in contact centers and customer service is a top use case for these global companies (**McKinsey 2021**).

AI for customer care is growing as emerging professions reflect the importance of high-quality human interaction in the future economy. **Gartner** cites the benefits of AI to “create optimal customer and agent experiences” as one of its three recommended areas of focus for service leaders. This use case for artificial intelligence provides automated (via chatbots) or AI-assisted (via human agents) services to answer questions and solve problems, or augment and assist, in the human need for knowledge.

## Artificial intelligence of the Augmented Kind

While AI innovations and research are primarily focused on *mimicking* human thought, reasoning, and creativity, it is essential to consider further how these advancements can *improve* human experiences, such as those that support people in the needs of their daily personal and professional lives. These technologies can reduce repetitive and low-value tasks and allow people to focus their mental efforts on higher-value tasks and creative endeavors.

However, are advancements in artificial intelligence actually moving in an assistive, human-centric direction? The answer is yes, but it comes with a warning: Advancements in augmentation are in danger of losing momentum because as a society, we are overly fixated on automation and machine comprehension — and these developments may overtake the focus on augmentation.

On machine comprehension, the work on System 1 and System 2 thinking by Daniel Kahneman, winner of the Nobel Memorial Prize in Economic Sciences, is enlightening in this context:

System 1 thinking is fast, intuitive, and works on its own. System 2 thinking is slower, more deliberative, and more analytical. Humans use System 2 thinking to solve abstract issues, manage unfamiliar circumstances, and determine the appropriateness of their actions in social contexts.

Although the System 1/System 2 paradigm was established to explain the human mind, it may equally be used to describe artificial intelligence today: The most advanced artificial intelligence systems available today excel at System 1 activities but struggle with System 2

tasks. To progress AI and make it more human, its ability to think analytically must be enhanced. Algorithms will comprehend cause and effect and operate worldwide to acquire knowledge with system 2 AI. Today, we can exploit AI's System 1 capabilities in conjunction with a human's natural System 2 thinking to enable, for example, AI-assisted retrieval of complicated kinds of information in the workplace, or customer and technical support scenarios.

Currently, the research field is studying how to bridge System 1 and System 2 thinking. While AI was originally focused on data analysis, it has developed to include data creation with generative adversarial networks and variational auto-encoders (Goodfellow et al., 2014). Recently, a series of Large Language Models (LLMs) have been proposed (Brown et al., 2020; Thoppilan et al., 2022, Hoffman et al., 2022). For instance, Chinchilla, Gopher, Jurassic-1, Megatron-Turing NLG or GPT-3 are redefining what is possible in natural language processing, and transformers are trained to generate texts or images from massive datasets (Vaswani et al. 2017). The largest dense language models now contain over 500 billion parameters, though DeepMind's Chinchilla has *only* 70 billion parameters, but 4 times more training tokens than most of the LLMs.

In an augmented intelligence context, LLMs can be used to automate the summarization of large amounts of text-based information (for example, agent-assisted customer service based on product documentation for an enterprise software platform) and to generate paraphrases, or alternative variations of answers, to broaden the range of questions that a chatbot can automatically answer. The irony is that as these innovations increasingly emphasize autonomous functionality and how to mimic human intelligence, the most productive AI applications — and those that can most pragmatically and most quickly be incorporated throughout an enterprise and with the least risk — are those that partner with and improve, or augment, the human experience within the company.

## **Conclusion: Augmentation at the Edge of Work**

An augmented organization is simply better positioned to outrun its competition. Augmented intelligence is an attainable, high-value, and low-risk application of AI. It can bring richer, more efficient, and more satisfying experiences to employees,

customers, and anyone who needs to get faster access to what has become an unwieldy amount of information.

Cloud computing has enabled the scaling of these experiences such that it is now realistic to place AI applications onto the desktop of every knowledge worker, customer service agent, and on the mobiles of every worker in the field.

In effect, we can see augmented intelligence as a way to create and distribute knowledge for the assistance and improvement of human experiences. This approach brings increased innovation and market share — and ultimately drives higher quality opportunities for the human workforce.

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