

When and How Artificial Intelligence Augments Employee Creativity

How can firms redesign jobs so that AI chatbots take over routine work to boost employee creativity, and what practical challenges arise when the gains mostly go to high-skill workers?

Employee creativity is crucial for companies to adapt, but frontline staff often spend too much time on repetitive tasks that leave little room for new ideas. Luo and colleagues test whether an AI chatbot that handles the scripted “lead-generation” stage of telemarketing calls can free human agents to focus on creative problem-solving instead.

In a field experiment at a large call centre, 3,144 prospective customers were randomly assigned to either AI-assisted teams or all-human teams, while 40 agents were split into top- and bottom-skill tiers. The chatbot handled the initial screening, passing only serious leads to agents. During calls, creativity was measured by the share of customer questions that fell outside the chatbot’s training yet were answered successfully. AI-assisted agents answered 2.33 × more untrained questions and nearly doubled credit-card conversions. The boost in sales was fully explained by the rise in creative problem-solving.

Follow-up interviews with 28 agents reveal why high-skill staff benefit most. Because the AI filters out casual prospects, experts face a denser stream of challenging questions, which both preserves mental energy and sparks new sales scripts. They report higher morale and a sense of freedom. Lower-skill agents, however, struggle to keep pace and often feel stressed, which limits their creative gains. This “skill-biased AI-augmented creativity” highlights the need for targeted training, coaching and teamwork practices so that all employees can share in AI-driven improvements.

MAJOR TAKEAWAYS:

- Shifting routine lead-generation to AI can more than double frontline creativity and sales performance.
- High-skill agents capture most gains, exposing a skill-bias that may widen capability gaps.
- Complementary upskilling, coaching and team practices are essential to help lower-skill staff share in AI’s benefits

WHO NEEDS TO KNOW:

- HR Leaders
- Sales Managers
- Academics

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