The Economic Impact of Generative AI

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A Trillion Opportunity?

Based on a recent research from the McKinsey Global Institute, Generative AI is poised to deliver significant economic value

- **$2.6 Trillion to $4.4 Trillion Annual Impact:** This represents the estimated annual economic value across 63 analyzed use cases in 16 business functions.

- **15% to 40% Increase in AI Impact:** This new capacity increases the previously estimated impact of traditional AI and analytics by 15% to 40%.

Source:
https://www.mckinsey.com/~/media/mckinsey/business%20functions/mckinsey%20digital/our%20insights/the%20economic%20potential%20of%20generative%20ai%20the%20next%20productivity%20frontier/the-economic-potential-of-generative-ai-the-next-productivity-frontier.pdf

A Trillion Opportunity?: Key Findings

- **Concentration of Value:** Approximately 75% of the total value falls within four key areas: **Customer Operations** , **Marketing and Sales** , **Software Engineering** , and **R&D**

- **Industry Impact:** **Banking** , **high tech** , and **life sciences** are expected to see the highest impact as a percentage of their revenue.

- **Productivity Growth:** Generative AI could increase labor productivity by 0.1% to 0.6% annually through 2040

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A Trillion Opportunity?: Industries at the Forefront

- **Technology & Software:** Coding efficiency increases by 55%
- **Marketing** : Personalized content at scale. Campaign cycle times reduced by 70%
- **Finance** : Automated risk reporting and real-time fraud detection. Enhanced advisory roles
- **Customer services** : AI handles 80% of routine queries, leaving complex escalations to human agents.

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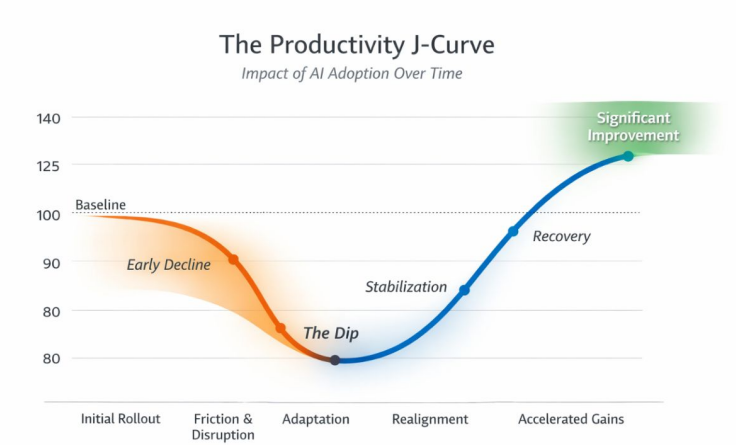
The productivity impact of Generative AI

- **The Productivity J-Curve:** Erik Brynjolfsson (Stanford) argues that AI is a "General Purpose Technology." Like electricity, its full impact isn't seen immediately.
- Firms must invest in "intangible capital" (restructuring workflows, training staff). This causes an initial productivity dip before the massive exponential rise.

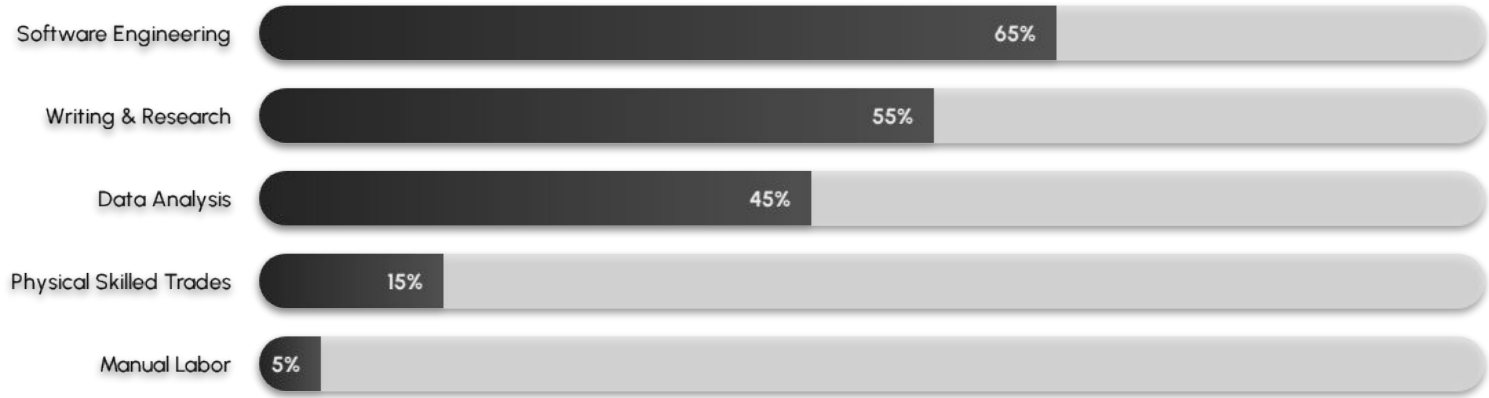


Global Labor Market Exposure

- **300 Million Jobs Exposed:** The equivalent of 300 million full-time jobs globally are exposed to automation.
- **<18% to 25% of Work Tasks Automated:** While two-thirds of jobs are "exposed," Generative AI could replace up to one-fourth of current work tasks globally, not necessarily the jobs themselves
- **Augmentation Dominates Automation:** Studies indicate that augmentation of human labor by AI dominates full automation by a ratio of roughly 4:1
- **6–7% Job Displacement:** Despite high exposure, only 6–7% of the US workforce is predicted to face actual displacement over the next decade.
- **2026 Employment Trends:** Companies are increasingly using AI to reduce labor costs, with an estimated net drag on the US labor market of roughly 16,000 jobs per month as of April 2026.

Source: https://www.goldmansachs.com/insights/articles/generative-ai-could-raise-global-gdp-by-7-percent

Automation Potential by Task



Cognitive and creative tasks show higher exposure compared to physical labor

Source: https://www.goldmansachs.com/insights/articles/generative-ai-could-raise-global-gdp-by-7-percent

Productivity gain by skill level

- Research shows that Generative AI acts as a "Great Equalizer," bringing lower-performing employees up to the level of experts quickly.

- David Autor (MIT) argues that AI doesn't just replace expertise; it extends the value of a worker's latent knowledge, allowing them to focus on judgment over execution.

Software engineering: The coding paradigm shift

- Coding is the most advanced use-case today. AI co-pilots enable developers to write code faster.
- The focus is shifting from "how to write the syntax" to "how to architect the system," changing the very nature of computer science education.

Finance Services and Creative Industries

- In finance, AI is accelerating risk analysis and fraud detection. In the creative world, it's transforming ideation and rapid prototyping.
- The common narrative is the reduction of "friction" between the spark of an idea and its first-draft execution.

Transforming Customer Support

- Brynjolfsson, Li, and Raymond (2023) analyzed 5,179 customer support agents at a Fortune 500 enterprise software firm, tracking their performance over a year as they adopted a generative AI-based conversational assistants

- **14% of Average Productivity Boost:** Agents with access to the AI tools resolved on average 14% more issues per hour.

- **Less-skilled and inexperienced agents** saw productivity gains up to 34%, while experienced or highly skilled workers saw minimal impact.

Transforming Customer Support

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- **Accelerated Learning Curve:** New customer agents with only 2 months of experience using the AI performed just as well as, or better than, consumer agents with 6 months of experience without AI.

- **Improved Employee Retention:** The AI assistant reduced turnover, particularly for newer employees.

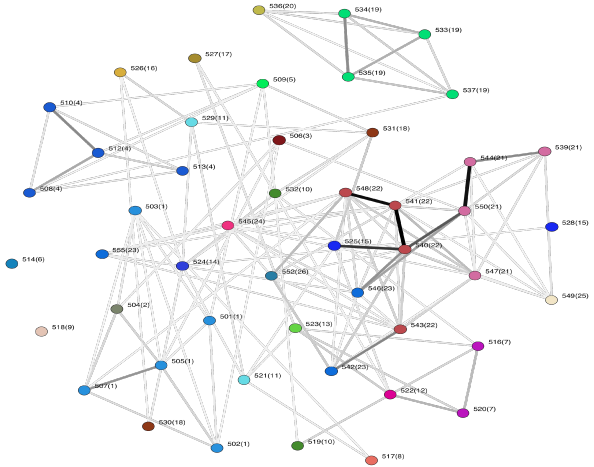
- **Better Customer Sentiment:** Customer interactions were more positive, with fewer requests to escalate to a manager.

The “Canaries in the Coal Mine”

- Brynjolfsson, Chandar, & Chen (2025) found a 16% of decline in hiring for 22-25 year-olds in AI-exposed roles (coding, service, writing) since ChatGPT's launch.

- This suggests that while senior productivity rises, the "on-ramp" for young talent is becoming dangerously narrow.

Using AI to Study Organizations

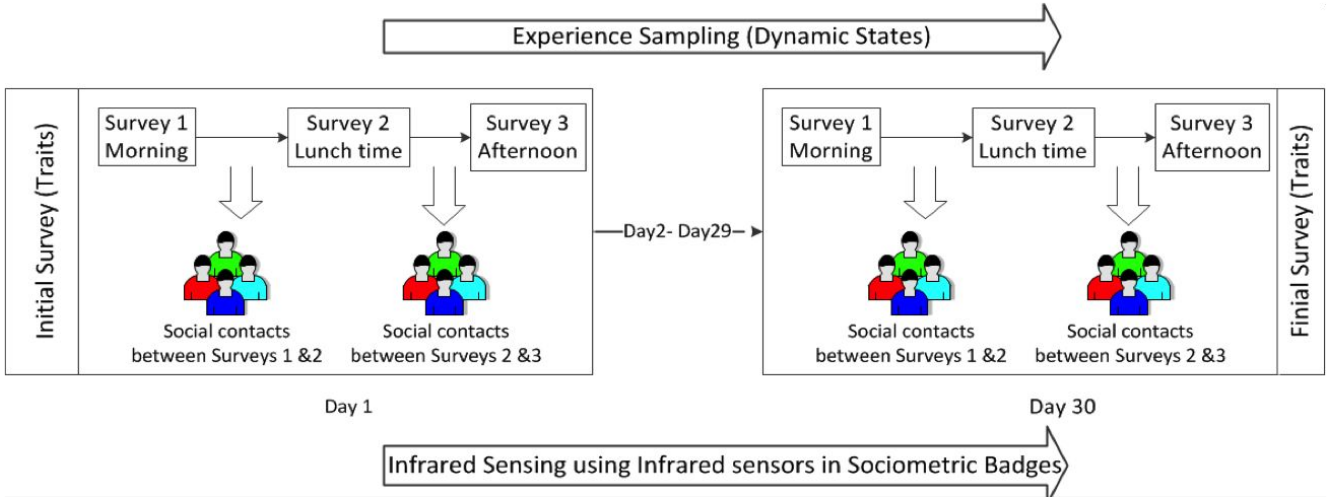


- **Social signals** sensed automatically by cameras, wearable devices (e.g. sociometric badges) and smartphones

- From sensor data we predict/detect situations (meetings vs informal chats), relationships, job satisfaction, productivity, employees' states and traits

- Through **feedbacks/interventions** we increase individual's awareness of effective behavior patterns and group/organization performance

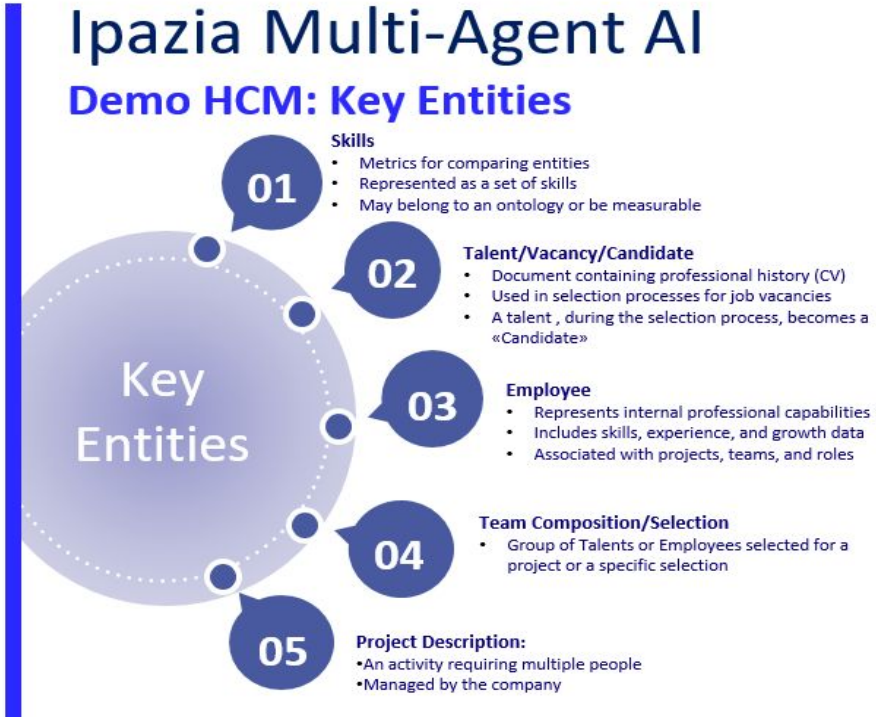
Beyond Contagion: Social Influence in Organizations



- **Contagion** plays a marginal role
- More nuanced effects like *attraction*, *inertia*, *repulsion* and *push* that are reminiscent of the **mimicry/adaptation vs. complementarity** distinction
- Processes are moderated by individual dispositions (traits)

Beyond contagion: Reality mining reveals complex patterns of social influence. Alshami et al., Plos One

Using AI to Enhance Talents at Work



Objectives:

The HCM is a skill-based tool designed to support companies in different domains.

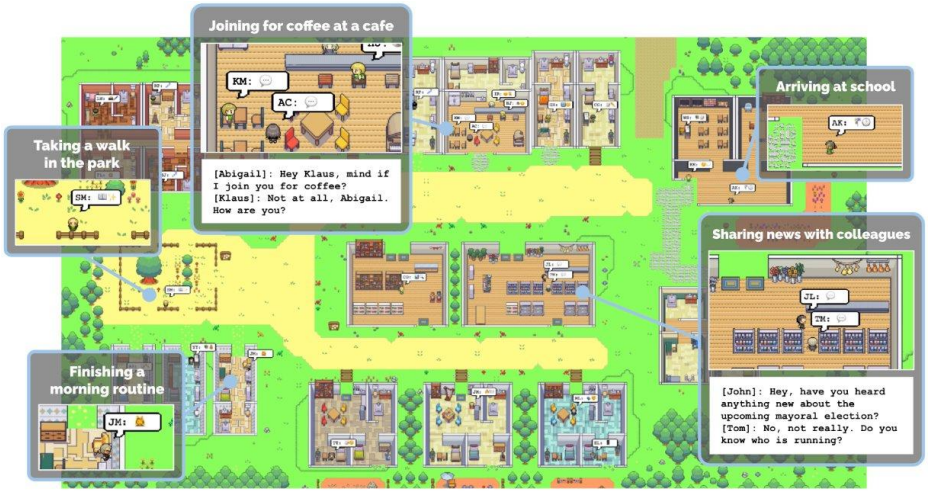
HCM defines and manages multiple entity types to represent various process aspects.

- Managing employees and vacancies
- Enhancing selection processes
- Defining growth path
- Forming Project team

Using AI to Simulate Organizations

- Simulation of a small village populated by 25 Generative AI Agents
- Agents interact with the world by their actions, and with each other through natural language
- Agents produce believable individual and emergent social behavior (they were able to coordinate for organizing a San Valentine party)
- Agents form new relationships over time and remember their interactions with other agents

Generative AI Agents can be used to **reproduce social interactions, groups, organizations and societies** in role-playing games!



Source: Park et al., Generative Agents: Interactive Simulacra of Human Behavior. 2023, arXiv:2304.03442

Thanks!