

## COLLECTIVE INTELLIGENCE

Frans van der Sluis (University of Copenhagen)

### Definition

Collective intelligence is the aggregated capacity of a group to think, learn, and solve problems through interaction. It emerges when diverse individuals or agents coordinate via deliberation, division of labor, or aggregation of independent inputs (Woolley et al., 2010). Digital platforms and crowdsourcing tools can scaffold these processes by organizing contributions, creating feedback loops, and enabling real-time coordination, which can improve the quality and robustness of group judgments (Barandiaran et al., 2024; Pentland & Tsai, 2024). Collective outcomes need not exceed any particular individual's judgment; their quality depends on design, facilitation, and process. Democratic practice can be understood as a form of collective intelligence: voting, debate, and consensus-building can turn dispersed knowledge into public decisions (Boucher et al., 2023). Under the right conditions, broader participation provides a “democratic advantage,” improving error detection and truth-tracking, helping societies revise beliefs more quickly and avoid groupthink (Landemore, 2013).

### Context

In the digital age, collective intelligence (CI) functions both as an analytic lens on group decision-making and as a democratic imaginary: a vision in which public decisions improve when many contribute, compare reasons, and correct mistakes together.

As an analytic lens, CI is treated as a measurable group property (a general ‘*c-factor*’) that depends less on individual IQ and more on group interaction patterns (Woolley et al., 2010). Research shows that groups solve problems effectively when they bring together diverse perspectives and combine their judgments in well-designed ways. Functional diversity, network configuration, and feedback structures can help groups learn from one another and refine their estimates, while other structures (e.g., strong conformity pressures or popularity-based dynamics) undermine independent thinking and accuracy (Hong & Page, 2004; Lorenz et al., 2011). These findings offer practical guidance for designing and evaluating democratic processes.

As a democratic imaginary, CI re-envisioned democratic engagement and institutional legitimacy by positioning governance as organized participation. When platforms, rules, and facilitation structure how broad input is aggregated and deliberated, CI offers an alternative to top-down decision-making models (Boucher et al., 2023). Digital tools like Decidim and Pol.is illustrate this design philosophy: Decidim enables citizens to propose, debate, and select policy options collaboratively, while Pol.is uses machine learning to

map consensus and disagreement in large groups (Barandiaran et al., 2024; Pentland, 2024). Both have supported real-world policymaking such as in Taiwan's vTaiwan initiative.

Integrating CI into democratic practice aligns with RELINK<sup>2</sup>'s focus on how digital tools shape connections between political organizations and citizens, especially younger and older groups. CI offers a perspective on why some digital participation processes fail to engage people and a vision for more inclusive decision-making.

### Related Concepts

Digital activism; Digital empowerment; Digital engagement; E-Governance; E-government; Liquid Democracy; Platform politics

### References

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Suggested citation: van der Sluis, Frans (2026), "Collective Intelligence", *Dictionary on Digitalization and Democracy*, RELINK<sup>2</sup> Cost Action 23114. <https://relink2.eu/>