Introduction to Collective Intelligence and Crowds

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We live surrounded by socially constructed identities that are constituted through a complex interplay of interactions, a kind of distributed cognition. To allow for these collectives to evolve, it is necessary to have not only a representation in an individual's mind but also the knowledge that similar representations exist in the minds of others. The way we can create shared representations have changed with the proliferation of a wide range of Internet platforms. These Internet platforms allow people to aggregate knowledge from socially distant areas. They also allow diverse groups of people – and maybe machines in the form of artificial intelligences – to negotiate identities. With these socio-technical configurations we can build collective intelligences that themselves will steer the quest for knowledge. These collectives can be self-catalyzing, deciding individually or collaboratively what to do next, out of which novel and practical ideas emerge.

While these open design collectives rely on organic growth and slow embedding of members in the network, alternative structures based on crowds can be assembled more rapidly. Between the two extremes are a host of different organizational and social structures, in which committed members of a community create, improve, and share ideas. The output of these socio-technical systems often takes the form of digital media, and their traces are varied, ranging from ephemeral short messages to curated collaborative knowledge repositories.

Askay proposes a conceptual framework for investigating organizational control and resistance in crowd-based platforms, providing a research agenda for crowd behavior research by drawing from the organizational control literature. This framework can help scholars more fully articulate the full range of control mechanisms operating in crowd-based platforms. The framework contextualizes these mechanisms into the context of crowd-based platforms, challenges existing rational assumptions about incentive systems, and clarifies theoretical constructs of organizational control to foster stronger integration between information systems research and organizational and management science.

Literat focuses on the effectiveness of key incentives in fostering creative crowdsourcing, trying to better understand the conditions that most effectively stimulate creative participation online. An experimental research design tested the impact of specific incentive structures on the outcomes of creative participation on Amazon's Mechanical Turk. The study found that extrinsic rewards are effective in encouraging participants to accept the creative task, whereas the strategies that boost the creativity of the submissions are: offering a bonus, mentioning a charitable purpose, and giving contributors authorship credit. By illuminating the factors that have the greatest impact on the quality and quantity of online creative participation, the study contributes to our understanding of digital creativity.

Du and his colleagues propose a new crowd opinion aggregation model, CrowdIQ, that has a differential weighting mechanism and accounts for individual dependence. CrowdIQ was empirically evaluated in comparison to four baseline methods using real data collected from StockTwits. The results show that, CrowdIQ significantly outperforms all baseline methods in terms of both a quadratic prediction scoring measure and simulated investment returns.

Kelman and his colleagues, illustrate how unusual spatial patterns of industrial firm locations uncover their social interactions. In this paper they report evidence from the Italian industrial sectors whereby firms that buy and sell are spatially distributed with a pattern that reflects the microeconomic powers at play. The main finding is that firms are neither clustered around population centers nor are they situated at random. Although geography has an important role in shaping the population map of Italy, the reasons for the positional pattern of buyers and sellers appear to be social. Geographic proximity between sellers and their buyers is supported by the excess in short-distance social ties.

The analysis of sociotechnical relations ties the papers together, and provide a current snapshot into research on collective intelligence, new sociotechnical configuration of knowledge creation, and crowdsourcing.

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