

MANAGING THE SOCIAL DYNAMICS OF COLLECTIVE INTELLIGENCE

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ABSTRACT

Successful instances of collective intelligence are created by those who set clear goals, develop effective process models, and clarify leadership. This talk presents collective intelligence strategies to guide research and practice.

Lowering the cost and barriers to collaboration opens up numerous possibilities for collective intelligence and action. These exciting possibilities are rapidly changing political organization, scientific research, scholarly projects, disaster response, citizen science, medical practice, and economic development.

The growing understanding of what strategies are appropriate in each context promises to improve the success rate of future projects. The intellectual challenge is substantial since traditional replicable controlled experimental techniques and reductionist models are less relevant in large dynamic communities. The rich variety of contexts and interaction among factors (e.g. community size, diversity, goals, history, etc.) produces a challenge to traditional methods. However, the good news is that novel ethnographic and case study methods, coupled with social media data analyses [Hansen et al. 2011] can produce evidence to validate hypotheses, support theories, and guide community managers.

As research on collective intelligence matures, the appearance of mature process models facilitates research and practice. Innocentive’s [2011] description of its methods or the Social Discovery Framework [Table 1, Shneiderman 2011] clarify temporal sequencing of stages for initiating requests, creating capacity, and seeking solutions. Malone et al. [Table 2, 2011] genome approach invites community managers to describe what, who, why, and how. The Reader-to-Leader Framework [Figure 1, 2009] suggests typical paths as community participants become more engaged. A detailed study of scientific collaborations led to a useful taxonomy of contexts and goals [Table 3, Bos et al. 2007].

Social Discovery	Create Capacity	Seek Solutions
Initiate Requests	Assemble thesauri Collate catalogs Aggregate info Curate collections	Ask questions Offer challenge Desire collaboration Seek experts
Provide Responses	Tag/taxonomize Comment/annotate Rank/rate/review Summarize	Give answers Respond to challenge Discuss alternatives Offer advice

Table 1: The Social Discovery Framework show two stages of work (creating capacity and seeking solutions), generated by a dialog between those who initiate requests and those who provide responses over months [Shneiderman 2011].

THE COLLECTIVE INTELLIGENCE GENOME FOR WIKIPEDIA

EXAMPLE	WHAT	WHO	WHY	HOW	
Create the collection of Wikipedia articles	Create	New article	Crowd	Love, Glory	Collection
	Decide	Whether to delete (preliminary)	Crowd	Love, Glory	Voting
	Decide	Whether to delete (final)	Wikipedia administrators	Love, Glory	Hierarchy
Edit an existing Wikipedia article	Create	New version of article	Crowd	Love, Glory	Collaboration
	Decide	Whether to keep current	Crowd	Love, Glory	Consensus

Table 2: The Collective Intelligence Genome for Wikipedia [Malone et al., 2011].

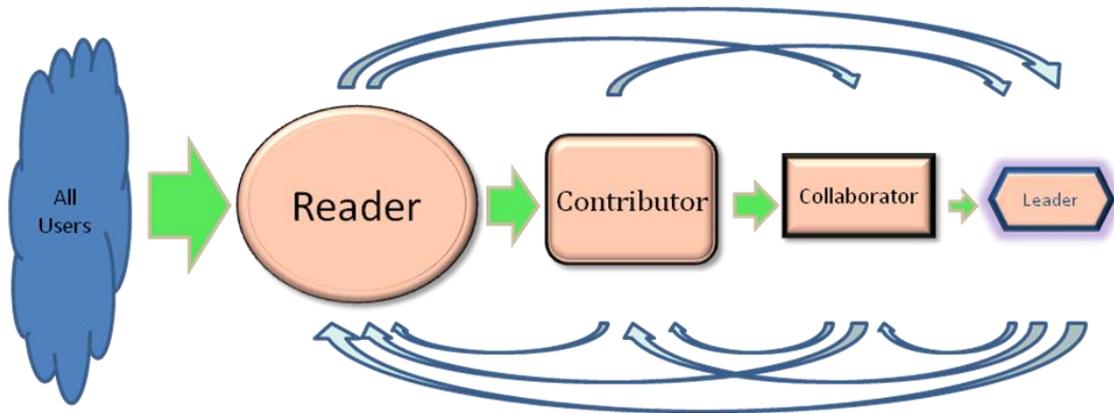


Figure. 1. The Reader-to-Leader Framework suggests that the typical path for social media participation moves from reading online content to making contributions, initially small edits, but growing into more substantive contributions. The user-generated content can be edits to a wiki, comments in a discussion group, ratings of movies, photos, music, animations, or videos. Collaborators work together over periods of weeks or months to make more substantial contributions, and leaders act to set policies, deal with problems, and mentor new users [Preece & Shneiderman, 2009].

	Tools (instruments)	Information (data)	Knowledge (new findings)
Aggregating across distance (loose coupling, often asynchronously)	Shared Instrument	Community Data System	Virtual Learning Community, Virtual Community of Practice
Co-creating across distance (requires tighter coupling, often synchronously)	Infrastructure	Open Community Contribution System	Distributed Research Center

Table 3. Seven collaboratory types by resource and activity [Bos et al., 2007]

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