Collaborative Sensemaking Support: Progressing from Portals and Tools to Collaboration Envelopes™

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ABSTRACT

Sensemaking involves incomplete discovery, inaccurate interpretation, and imperfect action that will fail in someway and likely alter the situation in some unknowable way. Sensemaking demands intense, deep collaboration with participating agents, who many times are physically distributed and come from different groups and organizations. Incorporating collaboration functionality in a piecemeal approach in different ways as add-ons within a portal-based architecture can place heavy demands on users to learn, organizations to train, and ultimately limit the potential of collaboration technology to achieve organizational goals. It is proposed that individual and group sensemaking is a better starting point from which to build architectures to mitigate socio-cognitive limitations of participating agents collaborating to make sense of things. Three levels of Collaboration Envelopes™ are presented and architectural considerations presented to guide development of technology to better support collaborative sensemaking.

Keywords: collaborative support systems; collaborative technologies; collaborative work systems; collaborative writing; electronic collaboration; human/machine interaction; intelligent support systems; IS architecture; knowledge-based systems; sensemaking

INTRODUCTION

“...we expect KM (Knowledge Management) to become more people-centric as the recognition spreads that it is networking of competent and collaborating people that forms the basis for the behavior and success of any organization...People are the real intelligent agents, those that see and act on new opportunities that really are creations of the mind.” (Wiig, 2000)

By their nature, innovative, forward-thinking organizations must empower their people and key stakeholders to engage in
collaborative sensemaking. In collaborative sensemaking, participants accept that data discovery will be incomplete; their efforts to comprehend, interpret, and integrate data will be difficult and inaccurate to some degree; and their actions that emerge from sensemaking will fail in some ways and alter the situation in some unknowable way (Weick, 1979). In the future, organizational success will depend on how well organizations exploit synergies while minimizing risk in collaborative sensemaking.

The way to build better sensemaking technologies is to understand the strengths and limitations of human sensemaking, that is, the strengths and limitations of how participants discover the right signals at the right time, make sense of them, and transmit signals to other participants at the right time as they collaboratively construct sufficient meaning to act.

Incorporating collaboration functionality in a piecemeal approach in different ways as add-ons within a portal-based architecture can place heavy demands on users to learn, organizations to train, and ultimately limit the potential of collaboration technology to achieve organizational goals. It is proposed that individual and group sensemaking is a better starting point from which to build architectures to overcome socio-cognitive limitations of participating agents, both human and non-human, collaborating to make sense of things. The notion of Collaboration Envelopes™ that wrap around sensemaking processes is introduced as a way to build more cohesive architectures to fully support sensemaking processes. First, sensemaking is explained through a Framework of Sensemaking Cycles and Linkages. Second, using this framework, three levels of Collaboration Envelopes™ are introduced. Third, some architectural considerations are introduced to better support collaborative sensemaking any-time, anyplace.

SINGLE SENSEMAKING CYCLE BY INDIVIDUAL AGENT

While aggregates can project a signal (which will be described subsequently), it is critical to remember that processing to make sense of a signal needs to occur at the individual-agent level. While many individual agents within an aggregate can be processing the same signal at the same time, although not necessarily in the same way, the aggregate, like a team or organization, cannot process a signal. Before describing multi-level sensemaking and linkages, we briefly identify issues relevant to a single sensemaking cycle which are basic to all levels of sensemaking. See Figure 1 below for an abstraction of a single sensemaking cycle.

*Signal Out* is the action or the constructed boundary object (something an agent consciously or subconsciously externalizes, like a message, picture, gesture, etc.). A Signal Out:

1. may or may not be attended to by other agents;
2. must be generated at the right time;
3. must be directed to the right agents while denying it to the wrong agents;
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