


# Collaborative Information Behavior and Human-AI Context in Group Work: The Perspectives of Agile Practitioners

Abidemi Atolagbe-Olaoye  
 <https://orcid.org/0000-0001-7255-1491>  
*University of North Texas, USA*

## ABSTRACT

New Product Development (NPD) environments are information-intensive, often leading to information gaps that can adversely affect development goals. This study examines the triggers of collaborative information behavior (CIB) among agile teams, their information-related challenges, and how human-AI collaboration could play a role. Data was collected through interviews with 18 agile practitioners in the US and Canada and guided by Dervin's sense-making theory for thematic analysis. The findings show that most agile teams work in hybrid/remote settings and CIB manifests during agile events, collaboration on unclear requirements, dependency management, and others. Agile teams utilize traditional and emerging tools to support collaborative tasks. Human-AI collaboration could enhance productivity through task automation, predictive analytics, customer-centric value delivery, and others. The study highlighted the tasks and activities for designers to consider when building AI-enabled tools and recommended increased AI awareness and further exploration of human-AI contexts in CIB research.

## KEYWORDS

Agile Practices, Collaboration, Collaborative Information Behavior, Human-AI Collaboration, New Product Development

## INTRODUCTION

Researchers in the information science field have explored information behavior in various group work settings, covering areas such as information seeking, information retrieval, information sharing, information use, and others in collaborative contexts. In a collaborative environment, teams achieve their shared goals through gathering “factual information requirements” to complete their tasks (Byström, 1999, p. 30). Single-function teams such as a group of engineers or a community of developers exhibit collaboration as a group or community (Irnazarow et al., 2019; Karch, 2020). However, cross-functional teams such as agile teams have specialists from various areas of information technology, engineering, business, and other functions to support complex initiatives that lead to the development of new products and solutions.

Agile teams embrace practices that revolve around the Agile Manifesto – a set of core values and twelve principles signed by 17 thought leaders representing various agile frameworks in February 2001 (Highsmith & Cockburn, 2001; Hoda et al., 2018). The practices include pair programming, customer collaboration, daily stand-ups, demos, retrospectives, iterative development, and other

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activities (Ghimire & Charters, 2022; Hoda et al., 2018). The members of an agile team using these practices and principles to develop new products or solutions are called agile practitioners.

Although the concept of agile software delivery is associated with the information systems field, the current study finds collaboration a crucial principle in agile practices and a key element in CIB. Like other group work, agile practitioners seek information from perceived or trusted information sources whenever they experience information challenges, such as complex information needs, limited access to information, lack of expertise, and siloed information sources (Reddy & Spence, 2008). According to Reddy and Spence (2008), CIB is triggered in teams based on any or a combination of these challenges. While information challenges in agile teams are often linked to requirements definition issues between the customer and the developers, among other factors (Ghimire & Charters, 2022), “collaboration on information” is critical to informed decision-making in an agile organization (Cockburn & Highsmith, 2001, p. 133). Therefore, collaboration manifests, and it is crucial to address the information gaps (or requirements issues) through information seeking, retrieval, and other aspects of CIB until the needed information is obtained and the tasks are completed. It is imperative to examine specific situations that trigger CIB in agile teams during product development, the information-related challenges they encounter, and how they collaborate to bridge the gaps. In addition, this study investigates if human-AI collaboration could play any role in accomplishing agile teams’ goals. Therefore, the following research questions will be addressed:

*RQ1*: What triggers CIB among agile teams during product development?

*RQ2*: (a) What information challenges do agile teams encounter?

(b) What approaches and tools do agile teams use to address information gaps?

*RQ3*: How can human-AI collaboration support the realization of agile teams’ goals?

## LITERATURE REVIEW

### Collaborative Information Behavior

Research on CIB focuses on collaboration among individuals involved in group work, leading to the manifestation of various information behaviors (Fortea-Cabo & González-Teruel, 2022; Riley et al., 2022). One of the broad definitions of CIB is:

*“The totality of behavior exhibited when people work together to (a) understand and formulate an information need through the help of shared representations; (b) seek the needed information through a cyclical process of searching, retrieving, and sharing; and (c) put the found information to use” (Karunakaran et al., 2013, p. 2438).*

Studies in CIB emerged over two decades ago with contributions from many scholars, such as Karamuftuoglu (1998), Sonnenwald and Pierce (2000), Poltrock et al. (2003), and others. Some scholars describe CIB from collaborative information seeking (CIS) or collaborative information (CIR) perspectives as information activities that involve human interactions with each other or with textual contents (e.g., documents) when there is a need to fulfill an information gap and meet a team’s shared goals (Hansen & Järvelin, 2005; Reddy & Spence, 2008). In a recent study, Atolagbe-Olaoye and Chang (2023) reviewed CIB definitions. They argued that CIB encompasses various collaborative activities, aligning with previous CIB researchers, such as Ikeya et al. (2010) and Karunakaran et al. (2013). While many scholars have contributed to CIB research for decades, the underlying context is *collaboration* among team members and interaction with relevant information sources.

Collaboration involves multiple parties working together to achieve a shared goal (Shah & Leeder, 2016). Developing a new product involves collaborating with a diverse, self-organizing team that continuously learns about customers’ requirements throughout the development process (Trott, 2017). Therefore, agile teams undergo collaborative information activities – seeking, evaluating,

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