

# Group Process Losses in Agile Software Development Decision Making

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## ABSTRACT

*The importance of effective decision making in organisations has been well documented. Despite the many benefits associated with groupwork, groups are often subjected to process losses such as groupthink, which in turn have a negative impact on group decision making. Limited prior research has suggested that such process losses may be even more prevalent in agile software development characterised by highly cohesive, self-managing teams. This study is one of the first to rigorously investigate the group process losses most prevalent in agile software development teams and assesses how the implementation of agile practices can reduce the impact or occurrence of such losses.*

*Keywords: Agile Practices, Agile Software Development, Decision Making Quality, Group Decision Making, Group Process Losses*

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## 1. INTRODUCTION

Research has shown that effective decision making is a critical component of organisational success where “high quality decisions are expected to lead to more productive actions, quicker problem solving and better organizational performance” (Eierman, Niederman, & Adams, 1995). The success of managers and leaders can hinge on the quality of their decision making, yet many organisations get decision

making all wrong (Garvin & Roberto, 2001). Due to the inherent complexity of decision making in organisations, groups are often formed so that individuals can share the information they have and generate new ideas (Mennecke, 1997). Such group decision-making is recognition that ‘the whole is greater than the sum of its parts’ (Aristotle). Information Systems (IS) researchers and organisations have long recognised the need for group-driven work (Janz, 1999) because “the tacit nature of user

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requirements, project design specifications and overall project understanding cannot be fully captured in formal documents” (Janz & Prasarnphanich, 2009). Even greater emphasis is placed on group-driven work in the context of agile software development where teams are inherently characterised as self-organised having control over their own decision making. While the surfacing of information during group decision making is imperative in ensuring the team make informed decisions, research has shown that information exchange during group decision making is often done poorly. In many instances, “discussion tends to focus on information that was already known and shared by the group prior to any interaction” (Hardman, 2009). This is one example of what has been commonly termed over many decades of research as ‘group process loss’ where the predominant finding is that groups often fall short of their expected, collective potential (Kerr & Tindale, 2004). Group process loss associated with the failure of a group to surface new or unique information (concentrating only on information that team members already know or have in common) creates particular unease where software development is concerned because key information is spread across a spectrum of stakeholders and the surfacing of such information for decision-making is a key necessity to the success of any Information Systems Development (ISD) project. Due to the increased emphasis of group-driven work in agile software development, such process losses may be even more prevalent. As such, this research focuses on two primary aspects; agile software development and group process losses during group decision making. This research seeks to address the following research question:

*How can agile software development teams reduce the occurrence of group process losses during group decision-making?*

We first discuss agile software development and its most commonly deployed practices as well as group decision making, group process losses and in particular groupthink.

## 2. AGILE SOFTWARE DEVELOPMENT

One of the most recent and significant contending IS methodological approaches is that of agile software development. Agile development emerged as a result of continued pressure for “radical change in the traditional approach to development” whereby the “traditional life-cycle approaches that result in the eventual delivery of systems after several years” were no longer appropriate (Fitzgerald, 1998). Research shows that the extent of projects, which run over budget and schedule, is well beyond acceptable levels (e.g. Conboy, 2010; Kweku Ewusi-Mensan, 1997). As a result, ISD saw further “suggestions for improvement” from “experienced practitioners who have labelled their methods agile software development” (Dyba & Dingsoyr, 2008). Agility (as it relates to ISD) can be defined as iterative, evolutionary and flexible (Batra, Xia, & Dutta, 2010) as well as facilitating “creation, proaction, reaction and learning from change” (Conboy, 2009). The Manifesto for Agile Software Development outlines a clear set of principles and beliefs underpinning agile methodologies (Batra et al., 2010; Williams & Cockburn, 2003) as follows:

- **Individuals and interactions** over processes and tools
- **Working software** over comprehensive documentation
- **Customer collaboration** over contract negotiation
- **Responding to change** over following a plan

Agile places increasing emphasis on personal communication, community, morale, talent, skill and individual competency (Cockburn & Highsmith, 2001; McHugh, Conboy, & Lang, 2012) and relies “on the tacit knowledge embodied in the team, rather than writing the knowledge down in plans” (Boehm, 2002). There are several agile methods utilised in practice. For the purpose of this research the most commonly deployed agile practices across XP

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