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Scrum Master Competencies: A Content Analysis of Job Postings

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Abstract

This study explores the competencies required for Scrum Masters by analyzing 51 job postings from the United States, the United Kingdom, New Zealand, and Australia. The findings reveal a growing demand for Scrum Masters with a diverse skill set, including leadership, coaching, communication, and problem-solving, alongside Agile expertise. The results align with frameworks such as the Scrum Guide and SAFe, emphasizing the importance of practical experience and the Scrum Master's role in driving organizational transformation and promoting Agile maturity. These insights highlight the evolving expectations for Scrum Masters in modern Agile environments.

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1. Introduction

The contemporary landscape of IT project management demands a nuanced understanding of the knowledge and skills essential for Agile project management roles. Recognizing the multifaceted nature of Agile professionals' skills for both technical and interpersonal competencies becomes imperative [1, 2]. This need is underscored by the Agile Manifesto which emphasizes the value of individuals and interactions over processes and tools [1].

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Traditionally, IT project management relied on the Waterfall approach but the complexities arising from globalization and rapid technological advancements necessitated a more adaptable approach [3]. This shift led to the emergence of Agile Project Management marked by iterative and incremental practices [4]. As Agile practices gained prominence the necessity to scale Agile methodologies for larger projects gave rise to Scaled Agile Project Management often referred to as Scaled Agile Framework (SAFe) [5].

The fourth industrial revolution also known as Industry 4.0 has disrupted how projects are managed. This has led to the creation of new and unique skills essential for success in key roles within this approach [6]. The Scrum Master was originally responsible for ensuring adherence to Scrum principles and practices [4], now the required skills center around coaching, facilitation and fostering a culture of continuous improvement [7, 8].

The advancements in IT project management practices have driven a significant shift in the way projects are managed [9]. Notably, there's been a shift in the competencies required for the Agile roles especially for the Scrum Master [8], which hasn't received much attention in academic research. However, existing academic research on the Scrum Master role may not fully reflect this evolution leading to a potential discrepancy between theory and practice [2, 10].

In response, this research aims to perform a comprehensive content analysis of the competencies sought for the Scrum Master role. By analyzing industry job advertisements in major markets, including New Zealand, Australia, the United States, and the United Kingdom, we seek to better understand current organizational expectations in light of the competencies outlined in Scrum management frameworks and academic literature. This study follows a strategy similar to that employed by Ahsan and Ho [2] for the role of IT Project Manager and Ernst et al. [11] for analyzing competencies required for digital transformation. Specifically, the research examines the Scrum Master's role by comparing market requirements with the Scrum Master body of knowledge and academic literature.

The research is guided by a primary question. What specific competencies do organizations value in Scrum Masters?

2. Literature Review

The role of the Scrum Master is central to the success of Agile Project Management, particularly in fostering team effectiveness and driving project outcomes [7, 12]. Scrum Masters facilitate Scrum events, ensuring that the Agile process is adhered to and that teams operate efficiently [12, 13]. The Scrum Guide provides a comprehensive framework outlining the Scrum Master's responsibilities and their role in facilitating Scrum practices effectively [4].

Additionally, the Scaled Agile Framework (SAFe) further highlights the central role of the Scrum Master in enabling Agile at scale, emphasizing their responsibilities in fostering collaboration, coaching and removing impediments across multiple Agile teams [14]. Fig. 1, a responsibility wheel by SAFe 6.0 defines the same set of responsibilities for the role of Scrum Master or Team Coach [14], which includes facilitating Program Increment (PI) Planning and improving Agile Release Train (ART) performance.

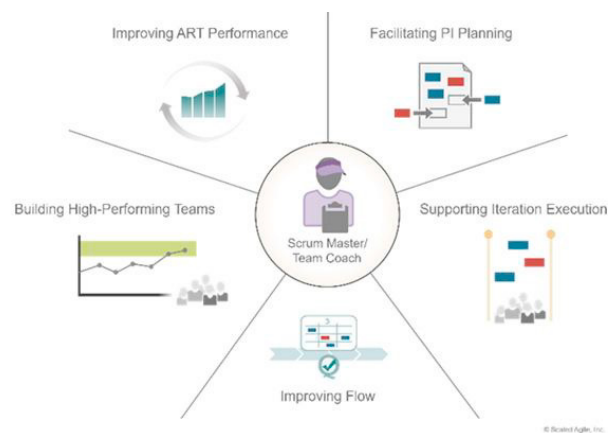


Fig. 1. Scrum Master responsibility wheel

While the Scrum Guide and SAFe offer valuable insights into the competencies and responsibilities of Scrum Masters [4, 14], academic literature also contributes to our understanding of the nature of the Scrum Master role. This literature review outlines the critical competencies required from the Scrum Masters including leadership and facilitation, communication, problem-solving, and coaching and mentoring:

- **Leadership and Facilitation Skills:** Scrum Masters are required to possess strong facilitation and servant leadership skills to effectively support agile teams. According to several authors [14-16], Scrum Masters differentiate themselves from traditional project managers by adopting a servant leadership approach that empowers teams to make independent decisions and fosters a collaborative environment based on empathy and support. Bass [16] highlights the importance of facilitation skills noting that Scrum Masters must guide discussions, resolve conflicts, and support decision-making during critical Scrum events like sprint planning and retrospectives. In SAFe environments, these competencies are even more essential. Scrum Masters must ensure alignment across multiple teams and actively drive continuous improvement [14].
- **Communication Skills:** Strong communication skills are essential for Scrum Masters, who serve as liaisons between agile teams and external stakeholders. Effective communication bridges the gap between technical and non-technical team members ensuring that updates and technical concepts are understandable to all audiences [17]. Communication is significant in SAFe environments where Scrum Masters coordinate multiple agile release trains to align team outputs with organizational strategy. In these environments Scrum Masters must promote transparency at all levels, reducing misunderstandings, and ensuring alignment among teams and stakeholders.
- **Problem-Solving Skills:** Problem-solving is another important skill that Scrum Masters use to guide teams through challenges and adapt to changing requirements. Traditional Scrum frameworks define problem-solving as identifying and resolving roadblocks that may impede a single team's progress [12, 13]. SAFe, on the other hand, applies problem-solving skills on a much larger scale. Scrum Masters work with Release Train Engineers (RTEs) to address organizational challenges that affect multiple teams, maintaining project momentum, and cultivating a culture of continuous improvement at all levels [14].
- **Coaching and Mentorship:** Scrum Masters play a crucial role in coaching and mentoring teams to improve self-organization and agility [7]. In SAFe, this competency is expanded as Scrum Masters are responsible for coaching multiple teams and aligning their practices with Lean-Agile principles [14]. This focus on coaching highlights the demand for Scrum Masters who can foster a culture of growth and autonomy across teams, aligning with the broader organizational goal of scaling Agile practices [18].

The academic literature consistently emphasizes the need for Scrum Masters to possess a diverse skill set as outlined above [4, 14]. The literature also highlights the importance of aligning Scrum Master's competencies with the ability to scale practices and drive change [9, 19].

3. Research Methodology

This study uses qualitative content analysis to investigate the competencies required for the Scrum Master role by analyzing job postings from June 2023 to May 2024 on a well-known job portal. The analysis focused on key aspects such as roles, responsibilities, experience, location, job level, salary, and other competencies, with data organized for consistency and coherence.

Manifest content analysis was applied to identify patterns and themes within the data. This approach provided valuable insights into the multifaceted nature of the Scrum Master role, highlighting key responsibilities and competencies essential for the position [20, 21].

3.1. Data Collection and Sampling

Job advertisements for Scrum Masters were collected from LinkedIn (<https://www.linkedin.com/>), with 51 job postings from New Zealand, Australia, the United States, and the United Kingdom. These countries were selected due to their shared cultural traits, language, and established Agile practices. The distribution of postings across these regions is shown in Table 1.

Table 1. Sample size by Country (n=51)

Agile Role	New Zealand	Australia	United States	United Kingdom
Scrum Master	13	12	13	13

3.2. Inclusion and Exclusion Criteria

Inclusion and Exclusion Criteria for job postings were applied to ensure relevance. The criteria below in Fig. 2 have helped filter posts directly aligned with the research focus.

Inclusion	Exclusion
✓ Role: Scrum Master	✗ No Information on role & responsibilities
✓ Date Posted: Anytime	✗ Posted with limited job duties
✓ Job Type: Full-Time (Permanent and Contract)	✗ Posted with incorrect information
✓ Industry: All	✗ Expired Job Ads
✓ Job Function: Information Technology	✗ Duplicate job postings

Fig. 2. Inclusion and Exclusion Criteria

3.3. Data Analysis

A Qualitative Content Analysis (QCA) was carried out to identify the necessary role-based competencies, skills and traits from the collected data [2, 22]. The methodology employed was manifest content analysis, allowing for a detailed analysis of the collected data [22-24]. The use of the emergent coding practice allows the natural emergence of themes and insights from the data [25]. Similarly, emergent coding is used wherein the data was manually analyzed for its frequency, patterns and contextual nuances on Microsoft (MS) Excel. Pivot tables were used to calculate the frequency of different skills and experiences listed in the job postings.

The focus of this manifest content analysis was on the frequency of data points within the text which supports the identification of the key competencies and their significance within the dataset, it is similar to the analysis performed by [26] in their research. This method facilitated a comprehensive understanding of the competencies required to be a Scrum Master.

4. Results & Discussions

The analysis of industry job postings reveals that a clear emphasis on a diverse and comprehensive set of competencies is required for the Scrum Master role. The purpose of the study was to identify the key competencies sought after in Scrum Master job listings and how these competencies align with frameworks such as the Scrum Guide and SAFe Scrum Master practices [4, 8, 14]. Fig. 3 provides a consolidated view of the competencies sought after for the Scrum Master role across various job postings.

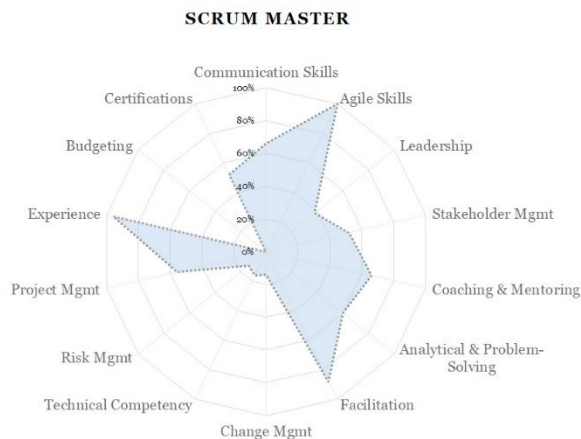


Fig. 3. Required Competencies in Jobs

Analysis of the frequency of competencies required in job postings reveals that Agile skills and experience are most highly valued by organizations, followed by facilitation and coaching & mentoring skills. Some observations and insights are also made, including the emphasis on experience over skills, the alignment of competencies with the Scrum Guide, the focus on organizational transformation, and the role of leadership and problem-solving abilities. These are discussed below.

Experience Over Skills - The Dominance of Experience in Job Postings: A notable finding of this study is the emphasis on prior experience over skills in job postings for Scrum Master positions, even for entry-level roles. This trend aligns with the growing complexity and demands of modern agile environments, where organizations seek professionals who can demonstrate practical, hands-on knowledge of agile practices.

The preference for experience over formal skills is a shift from traditional recruitment practices in other fields where specific technical skills might take precedence. This preference reflects the increasing complexity of agile transformations, where hands-on experience in implementing Scrum practices is valued over theoretical knowledge alone [27-29].

Ahsan and Ho [2] also found that employers often look for candidates who have real-world agile experience, especially in roles that involve leading change. This shows that practical skills are valued more than just theoretical knowledge.

The rising demand for experienced Scrum Masters supports the Scrum Guide [4], which emphasizes the need for Scrum Masters to facilitate complex team dynamics, manage stakeholder expectations, and resolve impediments, which can only be effectively done with prior practical experience. Additionally, the SAFe Scrum Master framework [14] advocates for Scrum Masters to be seasoned professionals who can scale agile practices across the organization, further reinforcing the need for hands-on experience. Interestingly, experience in the Scrum Master role has not been emphasized in academic literature.

Alignment of Key Competencies with the Scrum Guide and Theory into Practice: The competencies identified in the job postings closely align with the key responsibilities outlined in the Scrum Guide [4]. The study revealed that job postings consistently highlight competencies such as facilitation, communication, coaching, and problem-solving. These competencies are fundamental to the Scrum Master role.

1. **Agile Skills:** Scrum Masters are often expected to have a deep understanding of agile principles, including the ability to guide teams through sprint planning, retrospectives, and daily stand-ups. Research by Moe, et al. [28] and Denning [29] emphasize the importance of a Scrum Master's knowledge of agile frameworks to foster high-performing teams. The job postings that prioritize agile skills align with these findings and highlight the growing emphasis on agile expertise as a primary competency.
2. **Facilitation:** The ability to facilitate Scrum events is a central aspect of the Scrum Master role. The Scrum Guide stresses that Scrum Masters must ensure that Scrum events are productive and effective. Ereiz and Mušić

[13] underscore the importance of facilitation skills in maintaining team alignment and ensuring the smooth execution of agile processes.

3. **Communication:** Communication is critical in agile environments, where transparency and collaboration are key principles. Scrum Masters need to ensure that information flows freely between team members, stakeholders, and management. As noted by Bhalerao and Ingle [30], effective communication underpins agile success and helps manage stakeholder expectations.
4. **Coaching & Mentoring:** Scrum Masters are expected to act as coaches and mentors, guiding teams in their agile journey and fostering continuous improvement. This competency aligns with findings in agile leadership literature where coaching is essential for helping teams adopt agile principles and improve their performance over time [13, 29].
5. **Analytical & Problem Solving:** Identifying and addressing obstacles is a key responsibility of Scrum Masters. According to [28], Scrum Masters must be able to quickly identify impediments to the team's progress and work with stakeholders to resolve them. This competency is increasingly emphasized in job postings, as organizations recognize the need for Scrum Masters who can act as problem-solvers and keep teams on track.

The alignment of competencies between job postings and the Scrum Guide suggests that organizations are increasingly aligning their recruitment efforts with established agile frameworks. This finding resonates with research on agile project management, which asserts that Scrum Masters must possess a solid understanding of agile principles and be capable of applying them to real-world scenarios [18]. In addition, the competencies highlighted in job postings indicate that organizations are not merely seeking candidates who are familiar with Scrum concepts, but who can apply them effectively in dynamic, fast-paced work environments [31, 32].

Similarly, the strong alignment with the framework [14], further corroborates this. This organizational shift toward scaling agile practices highlights the importance of Scrum Masters being able to bridge the gap between agile theory and practice in large, complex organizations.

Organizational Transformation and the Role of the Scrum Master: A particularly insightful finding from this study is the increasing expectation for Scrum Masters to play a pivotal role in driving organizational transformation. This observation is reinforced in research which reveals a strong emphasis on the Scrum Master's role in fostering an environment of continuous improvement and Agile adaptation within organizations. Moreover, the role of the Scrum Master is evident in their proactive and innovative approach to improving customer and team interactions, as highlighted by techniques such as "Snap Demo" [12].

This shift is supported by literature on large-scale agile transformations, which argues that Scrum Masters must not only focus on individual team dynamics but also contribute to the cultural and structural changes necessary for agile adoption at the enterprise level [33, 34]; i.e. facilitating agile practices across multiple teams and at the organizational level [14]. Agile transformations require leadership, vision, and the ability to influence change at all levels of the organization as per [11]. Scrum Masters are increasingly seen as key players in this process [12, 34].

The emphasis on supporting organizational transformation reflects a broader trend of Scrum Masters being viewed as leaders in guiding the agile journey at the enterprise level, rather than merely as team facilitators.

Leadership & Problem-Solving Skills: While this study found that leadership and problem-solving skills are not universally required in all job postings, they are frequently emphasized in those that highlight organizational transformation. In approximately half of the job listings, leadership abilities are cited as necessary to drive change and transformation within the organization. This reflects a broader trend where organizations are increasingly looking for Scrum Masters who can influence and lead agile transformations beyond the team level. Like Scrum experience above, leadership and problem solving skills required in the Scrum Master role especially within the context of organizational transformation have been lightly treated in the academic literature to date.

Kristensen and Paasivaara [7] highlight that Scrum Masters with strong leadership and people skills contribute notably to organizational success, especially in managing team coordination and engaging leadership. Similarly, Shastri, et al. [12] describe them as key drivers of transformation, taking on strategic leadership roles beyond facilitation.

Leadership skills in this context are closely tied to the ability to guide teams through complex changes, resolve conflicts, and foster a culture of continuous improvement. Problem-solving skills are equally critical, as Scrum Masters are expected to address and remove obstacles that hinder team progress. The expectation that Scrum Masters

will support organizational transformation through leadership and problem-solving reflects the evolving nature of the role in the context of large-scale agile adoption.

In summary, the results of this study underscore the growing expectations placed on Scrum Masters as they navigate the complexities of modern agile environments. Experience remains a dominant factor in job postings, even for entry-level positions, highlighting the importance of practical knowledge in agile frameworks. The alignment of key competencies with the Scrum Guide and SAFe practices emphasizes the need for Scrum Masters to apply agile principles in practice effectively. Additionally, the increasing demand for Scrum Masters to drive organisational transformation highlights the evolving expectations from Scrum Masters as leaders within agile organizations.

These findings contribute to the growing body of research on the role of Scrum Masters and provide valuable insights for organisations looking to hire professionals capable of supporting agile transformation and fostering high-performing teams.

5. Limitations and Future Work

This study has several limitations that should be considered when interpreting the findings. The data was sourced solely from LinkedIn job postings that may not fully represent all job opportunities, as other platforms were not included. Additionally, the research focused on job ads from four countries, namely New Zealand, Australia, USA, and the UK. This means that the results may not reflect the global diversity of the Scrum Master role especially in regions with varying levels of Agile maturity. The exclusion of non-English job postings and the reliance on manifest content analysis which focuses only on explicit competencies also limits the scope of the study.

Furthermore, the time frame of data collection captures a specific period (June 2023 to May 2024) that may not account for future shifts in job market trends or evolving competencies for Scrum Masters. The study also did not explore organizational contexts, such as those influenced by team size, project complexity, or industry sector. Despite these limitations, the study offers valuable insights into the competencies associated with the Scrum Master role providing a foundation for future research to expand on these findings.

6. Conclusion

This study explored the competencies that organizations seek for the Scrum Master role, based on a content analysis of job postings across New Zealand, Australia, USA, and the UK. We have gained insight into the expectations and competencies associated with the Scrum Master role; namely experienced Scrum Masters who can guide teams through complex challenges, drive continuous improvement, and foster Agile maturity within their teams and organizations.

The observations from the study reveal a shift from traditional perceptions of the Scrum Master role. Traditionally, Scrum Masters ensured adherence to Agile principles and facilitated ceremonies [4, 8]. Now companies are seeking Scrum Master with broader skill sets, including adaptive leadership, strong communication and deep team understanding. This evolution emphasizes the fundamental role of the Scrum Master in driving organizational transformation, fostering positive team dynamics and championing Agile methodologies.

Furthermore, the analysis reveals the multifaceted nature of the Scrum Master role, encompassing leadership, coaching and adaptation within dynamic Agile environments. The emergence of terms like "Agile Coach" emphasizes the expanding responsibilities of Scrum Masters beyond mere facilitation to actively fostering a culture of continuous improvement at the organizational level.

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