Agile & Project Management Survey

Roles in a Project and Project Success

June 2019
Version 1.0

maXmetrics®

Introduction
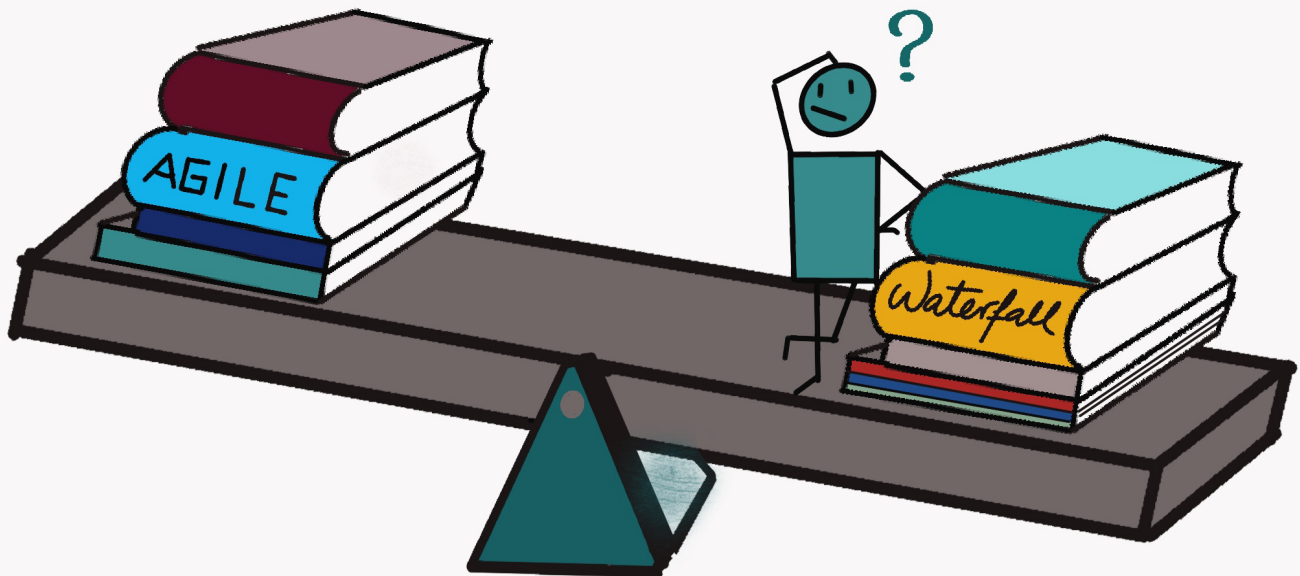
The success rate for agile methodologies is on par with, if not better than, those managed under a traditional methodology. In addition, enterprise agile frameworks are at the peak of adoption. Thus, if agile methodologies are followed rigorously and exclude a project manager, then maybe the project manager role and some project management tasks are obsolete.The aim of the research was to answer the following questions:
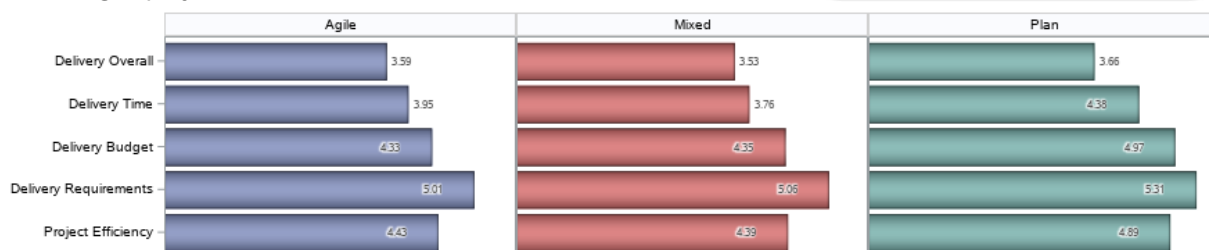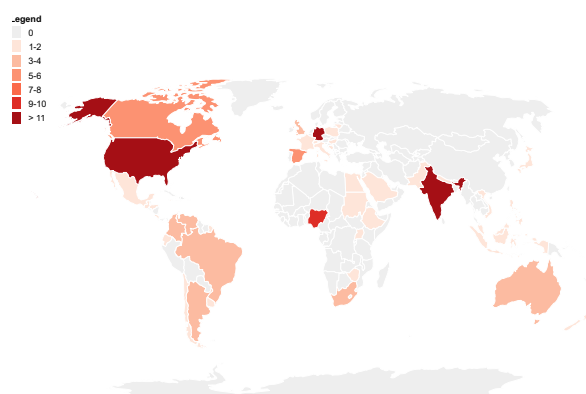
— **Are project managers engaged in agile projects?**
— **Who executes the project management tasks in projects applying agile methodologies?**

This report summarizes the survey inputs from and analysis of 120 projects. The first section provides descriptive statistics for the data that was collected as part of the survey. The second section provides summary of the analysis that was performed with the survey data.

Executive Summary

The participants were from 20 industries with no geographic region having an overwhelming majority. The majority (81%) of the projects were undertaken within the last five years and lasted more than one year (56%). Most of the projects (81%) had less than 21 team members.

Scrum and waterfall were the top methodologies at 22% and 20%, respectively. However, the different types of agile methodologies (a single methodology, multiple agile, or a scaled agile framework) represented 46% of the cases. There was no significant difference in time, cost, requirement, or overall delivery performance between the agile and non-agile projects.

The project manager role was involved in 67% of the projects, including 58% of the agile projects, 82% of the mixed methodology projects, and 79% of the plan-driven projects. The agile coach, product owner, and team combination – a full scrum team – was present in 23% of the projects. However, the combination of roles could be found in almost all methodologies, except kanban and other plan-driven methodologies.

Based upon a mapping of the standard project management processes to the principles from the agile manifesto and the scrum roles, a consolidated view of project management responsibilities for scrum projects was created. In some cases, it is the practice of the method itself that is responsible for realizing the activity, while in other cases, it is a specific project role.
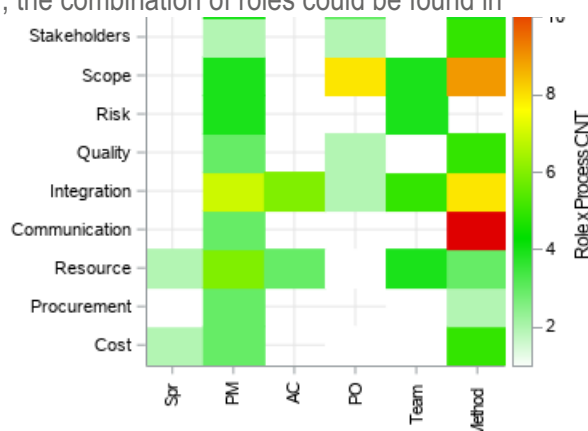
Bottom line:

Project management remains an important and significant set of activities in agile and non-agile projects. The team, product owner, and project sponsors are taking on the informal role of some project management tasks. The agile coach is not a substitue for the project manager. Yes, project managers are engaged in agile projects.

Survey
January 2019
Agile & Project Management

Table of Contents

1 Descriptive Statistics

2 Analysis

About the Survey

The web-based survey was used to collect the data over a two-week period in January 2019 from a single informant. Project managers, team members, and sponsors from completed projects were requested to take the survey. The responses were checked for scope, completeness, consistency, ambiguity, missing data, extreme responses, outliers, and leverage. Validity checks for common method bias, response bias, and reliability were conducted. No bias was found, and the data were considered reliable and valid.
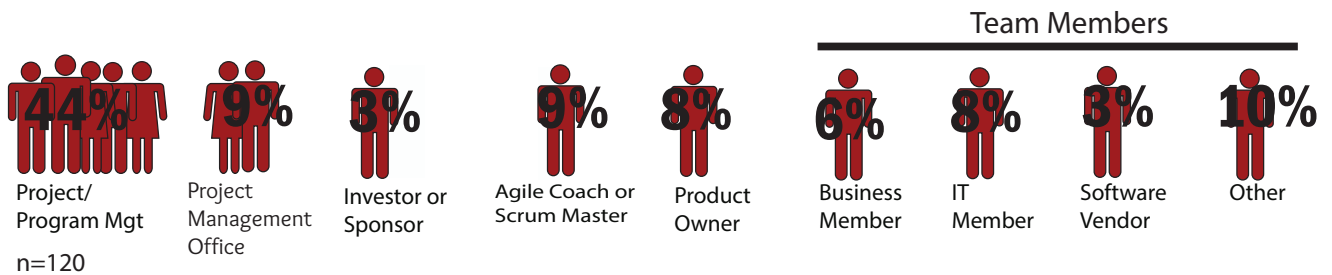
Invitations to complete a web-based questionnaire were sent to social media groups on LinkedIn, Xing, and Twitter. The survey was estimated to take 10 minutes; on average, the respondents completed the survey in seven minutes. All 120 people that started the survey completed all fields.

For non-demographic data, "Don't know" or "Not Applicable" were added to most questions to encourage accurate entries. Data conditioning was conducted to check for responses that were either not relevant, incomplete, or ambiguous. All data were usable. Many fields were not mandatory; thus if relevant, missing data is identified in the descriptive statistics.
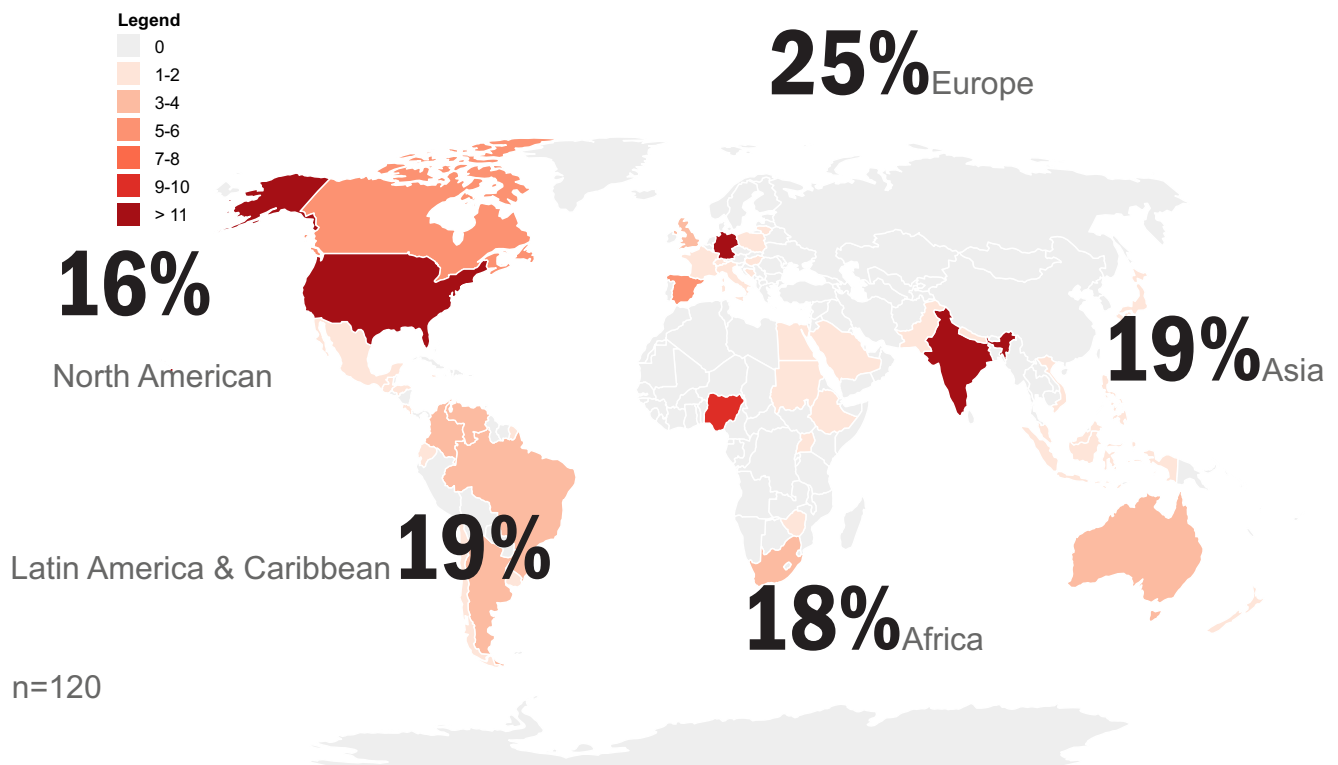
Descriptive Statistics

Respondent Demographics

The respondents were informed to use their last project as the basis for providing answers. Over 100 people participated in the study. The majority of the respondents are Project or Program Managers distributed throughout the world.

Project Role

Team Members

44%	9%	3%	9%	8%	6%	8%	3%	10%
Project/ Program Mgt	Project Management Office	Investor or Sponsor	Agile Coach or Scrum Master	Product Owner	Business Member	IT Member	Software Vendor	Other

n=120

Geographic Location

Legend
- 0
- 1-2
- 3-4
- 5-6
- 7-8
- 9-10
- > 11

25% Europe

16%
North American

19% Asia

19%
Latin America & Caribbean

18% Africa
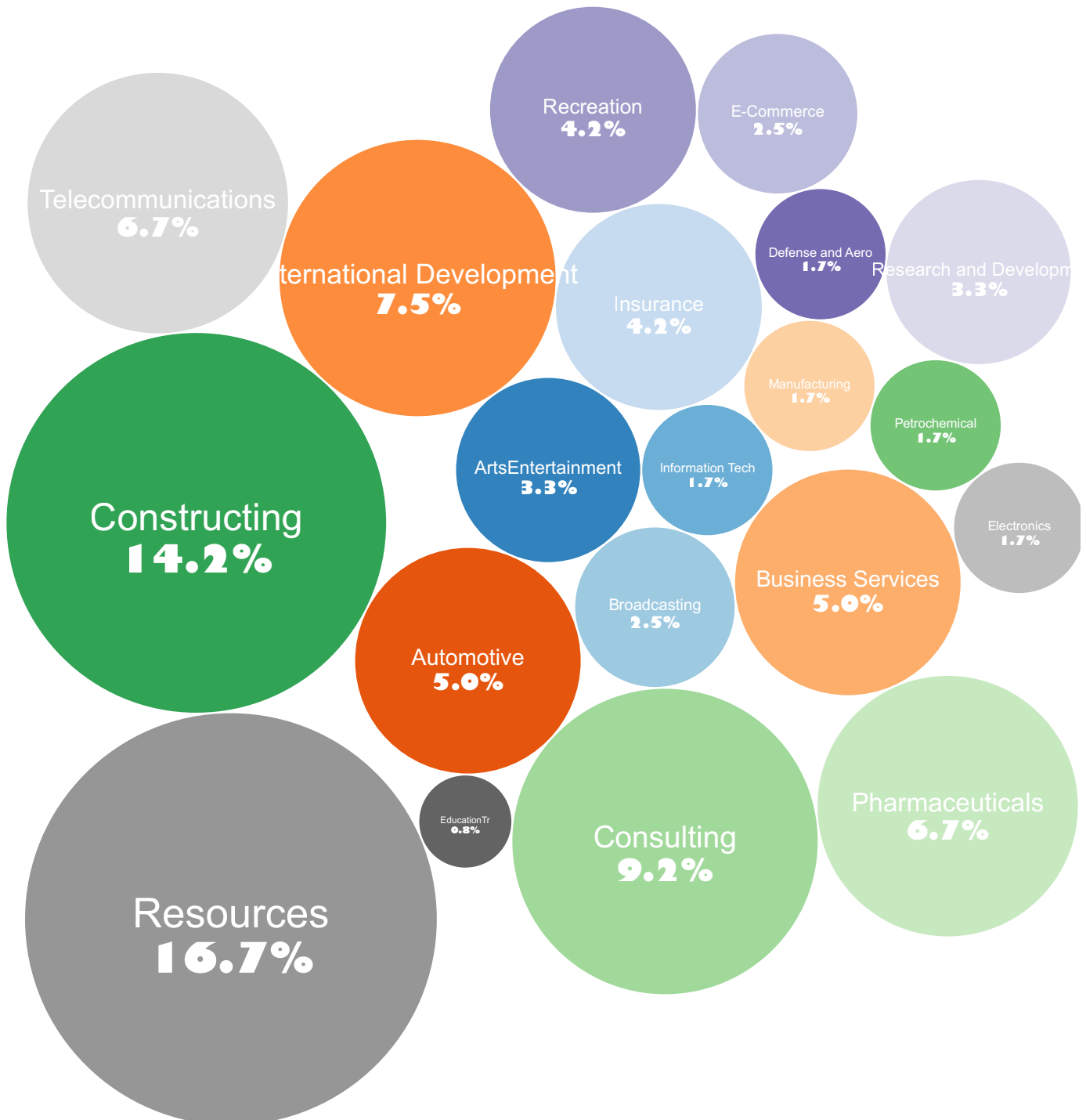
n=120

The organizations were spread through 22 different industries.

Recreation
4.2%

E-Commerce
2.5%

Telecommunications
6.7%

International Development
7.5%

Insurance
4.2%

Defense and Aero
1.7%

Research and Developm
3.3%

Manufacturing
1.7%

Petrochemical
1.7%

Constructing
14.2%

ArtsEntertainment
3.3%

Information Tech
1.7%

Electronics
1.7%

Business Services
5.0%

Automotive
5.0%

Broadcasting
2.5%

Resources
16.7%

EducationTr
0.8%

Consulting
9.2%

Pharmaceuticals
6.7%

Project Scope

Scrum and waterfall were the top methodologies at 22% and 20%, respectively. However, the different types of agile metho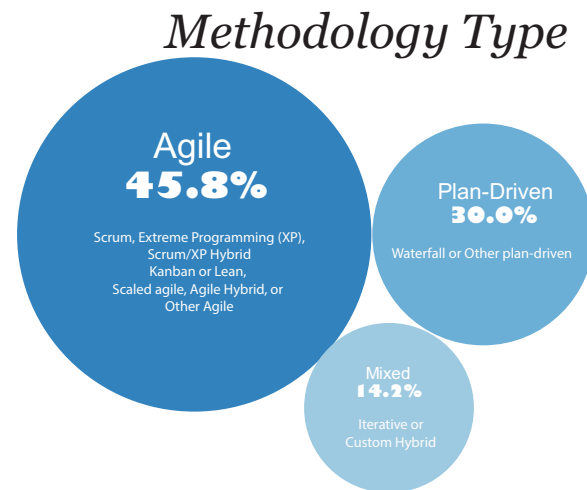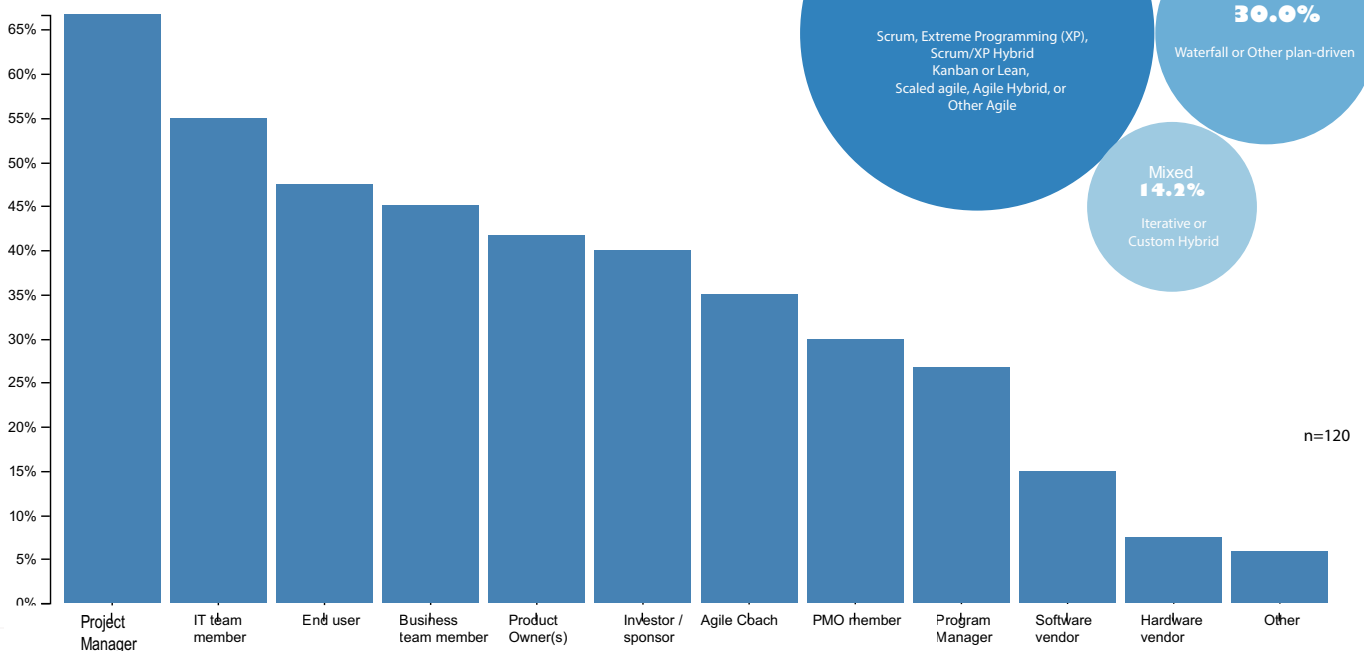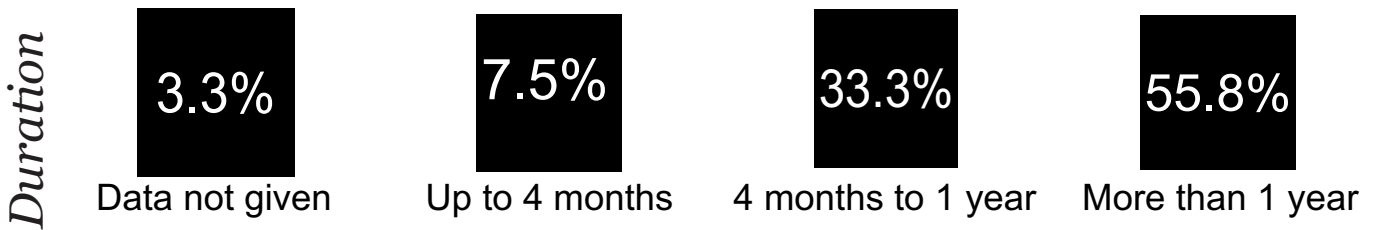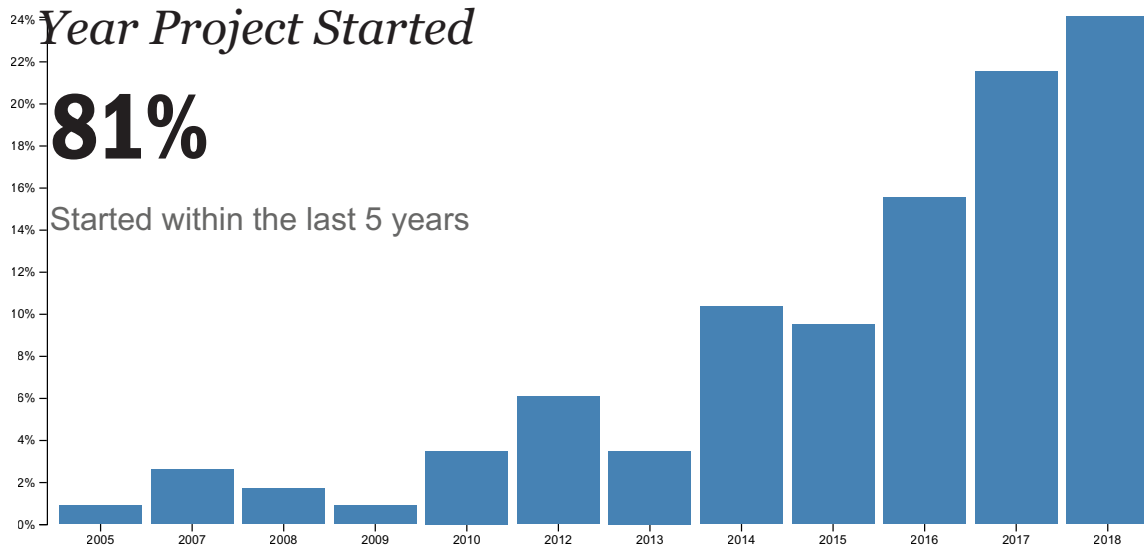dologies (a single methodology, multiple agile, or a scaled agile framework) represented 45.8% of the cases. The project manager role was involved in 67% of the projects, including 58% of the agile projects, 82% of the mixed methodology projects, and 79% of the plan-driven projects. The agile coach role was included in 35% of all projects, including 49% of the agile projects, 18% of the mixed projects, and 10% of the plan-driven projects. The product owner role was included in 42% of all projects, 53% of agile projects, 41% of the mixed projects, and 14% of the plan-driven projects. There was no significant difference between methodologies for the other roles.

Methodology

n=120

Methodology Type

Agile **45.8%**
Scrum, Extreme Programming (XP), Scrum/XP Hybrid Kanban or Lean, Scaled agile, Agile Hybrid, or Other Agile

Plan-Driven **30.0%**
Waterfall or Other plan-driven

Mixed **14.2%**
Iterative or Custom Hybrid

Team Composition

n=120
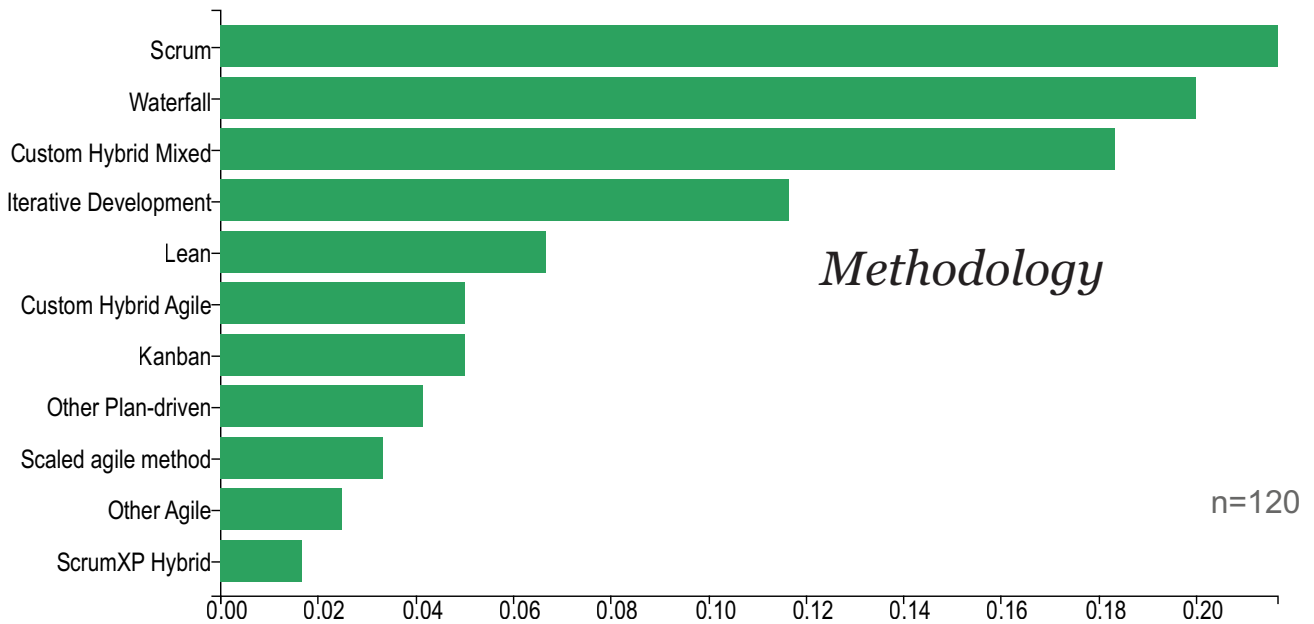
Project Attributes

Considering the project attributes, the majority of projects were started in the last 5 years and lasted more than one year. Half the projects had more than 10 team members.

Year Project Started

81%

Started within the last 5 years

Duration

3.3%	7.5%	33.3%	55.8%
Data not given	Up to 4 months	4 months to 1 year	More than 1 year

Number of People Involved

- Data Not Given
- Less than 4
- 4 to 6
- 7 to 9
- 10 to 20
- More than 21

3% · 3% · 18% · 17% · 40% · 19%

Project Efficiency
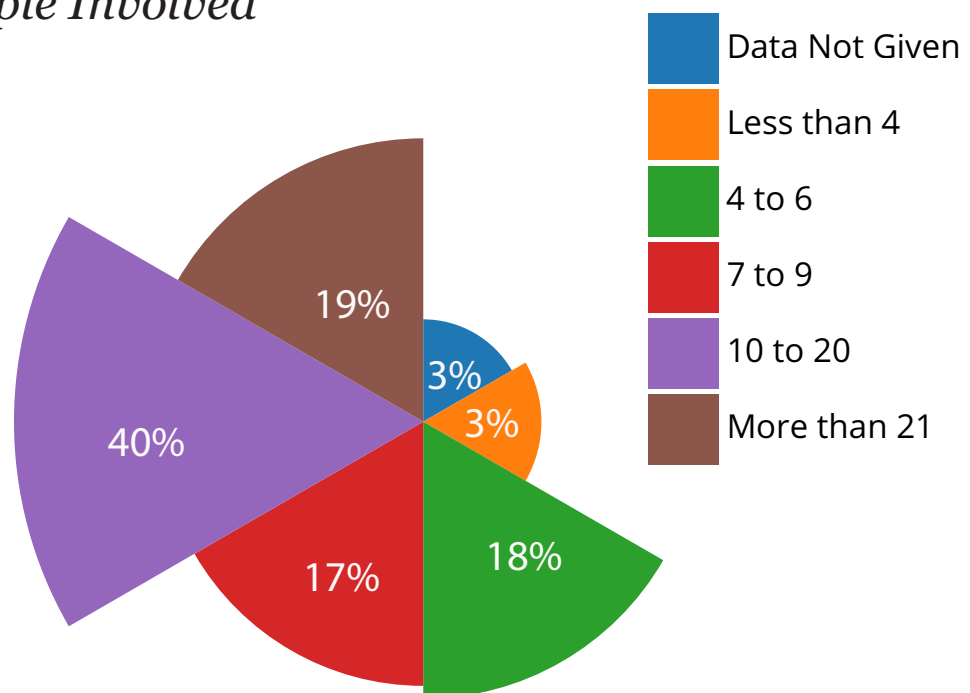
Project efficiency, also known as project management success, evaluates performance against the time, budget, and quality constraints of the project. Project efficiency is one contributor to project success."Don't know" was included as an option to avoid spurious data. "Don't is included with Not Applicable (NA) and NA is shown in the diagram, but excluded from the reference line. In short, even when projects were late or over budget they could be considered successful.

Meeting Time Goals

45.8%

± 14% within schedule

Delivery Time — 0-NA: 4, 1-: 7, 2-: 13, 3-: 21, 4-: 20, 5-: 29, 6-: 24
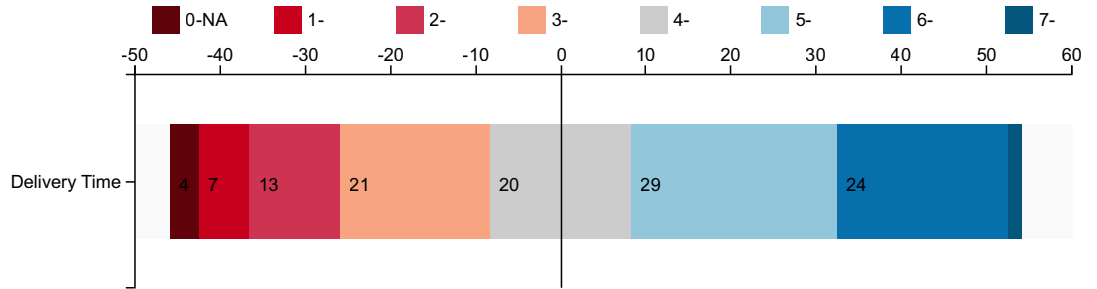
Meeting Budget Goals

59.2%

± 14% within budget

Delivery Budget — 0-NA: 9, 1-: 6, 2-: 8, 3-: 9, 4-: 17, 5-: 16, 6-: 48, 7-: 7
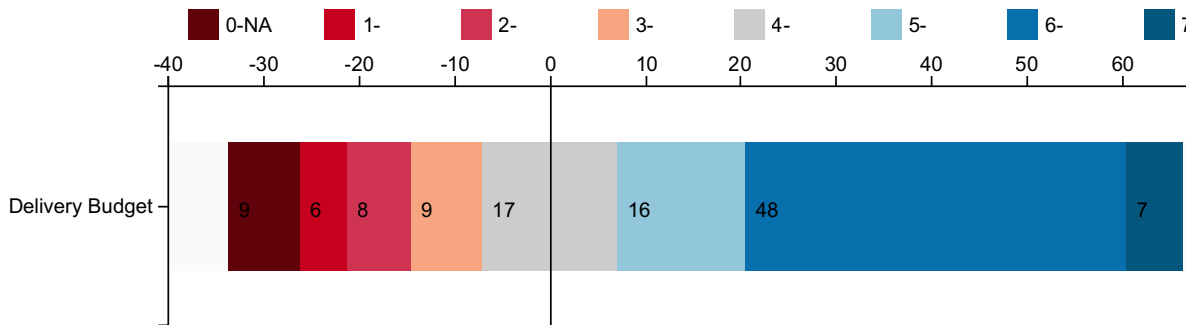
Meeting Scope and Requirement Goals

72.5%

± 14% goal achieved

Delivery Requirements — 1-: 5, 2-: 4, 3-: 8, 4-: 15, 5-: 29, 6-: 44, 7-: 12
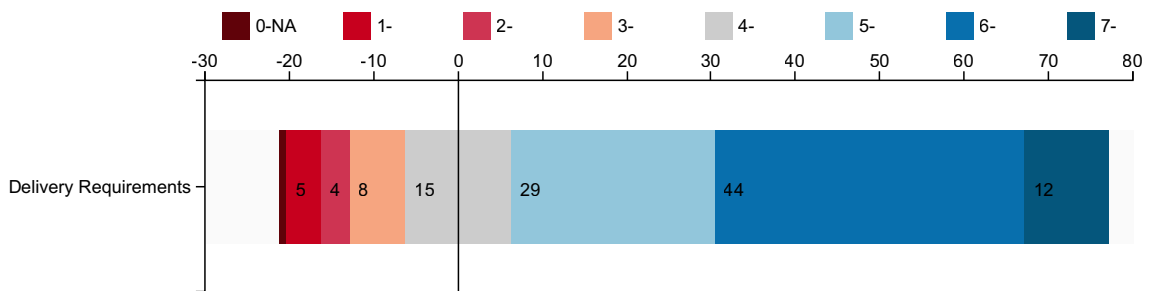
Overall Success

95.0%

mixed-very successful

Delivery Overall — 0-NA: 6, 2-: 48, 3-: 54, 4-: 12
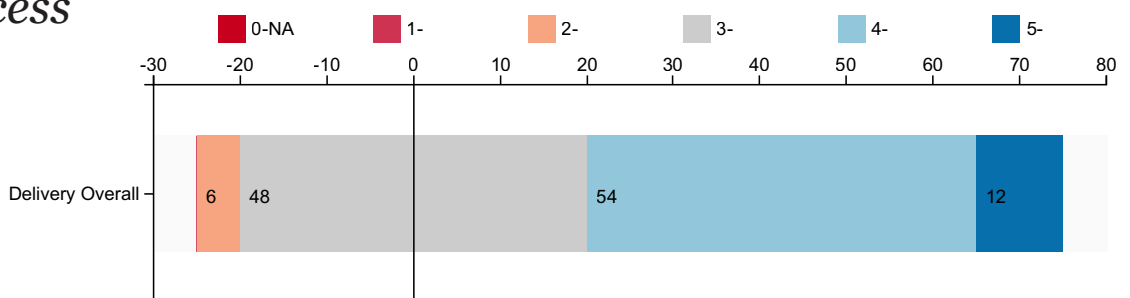
n=120

2 Analysis

Tasks

Overwhelmingly, the project manager is responsible for the project management tasks in all types of methodologies. This involvement is significant for managing the team and stakeholders, identifying risks, establishing the team, and controlling resources. On the other hand, the team is more often identified as being involved in assessing, treating, and controlling risks in plan-driven methodologies, while it is more often the product owner in agile methodologies. The product owner is strongly represented in managing stakeholders. The team and agile coach are not significantly engaged in this task. The project team is involved in procurement in plan-driven methodologies and not at all involved in agile methodologies.

The sankey diagram shows the relative relationship between the roles in the project and the project management tasks. The size of the flow is based upon the number of survey responses that indicated the role was engaged in the tasks. Role to task mappings with less than 10% of the responses were excluded.

Methodology Analysis
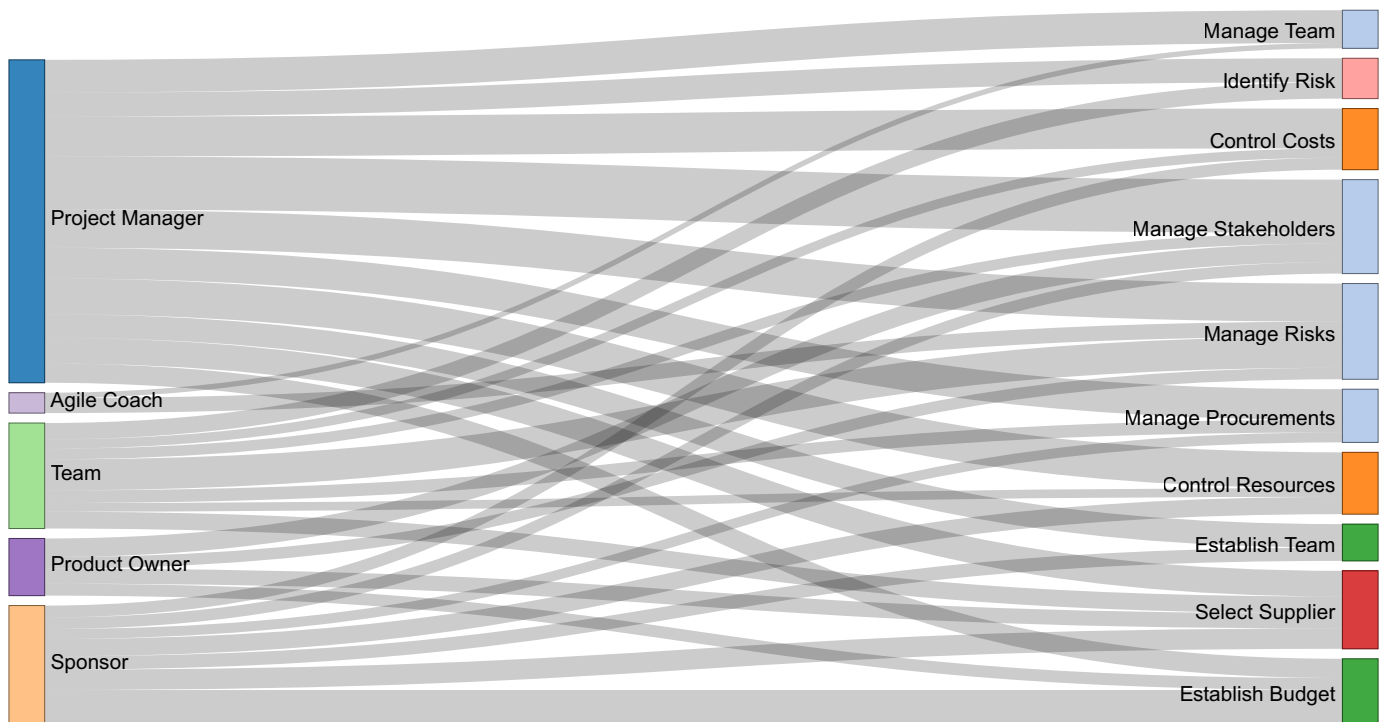
Methodology Comparison

The methodologies were grouped into Agile, Plan-Driven, and Mixed, and the mean scores were compared for roles, performance, and tasks differences. The means are shown in the figure and significant differences are annotated with an asterisk. In short, there were significant differences for the agile coach, product owner, and project manager roles.Otherwise, there were no significant differences. All methodologies were similar in efficiency and in performing the project management tasks.

Performance

Roles
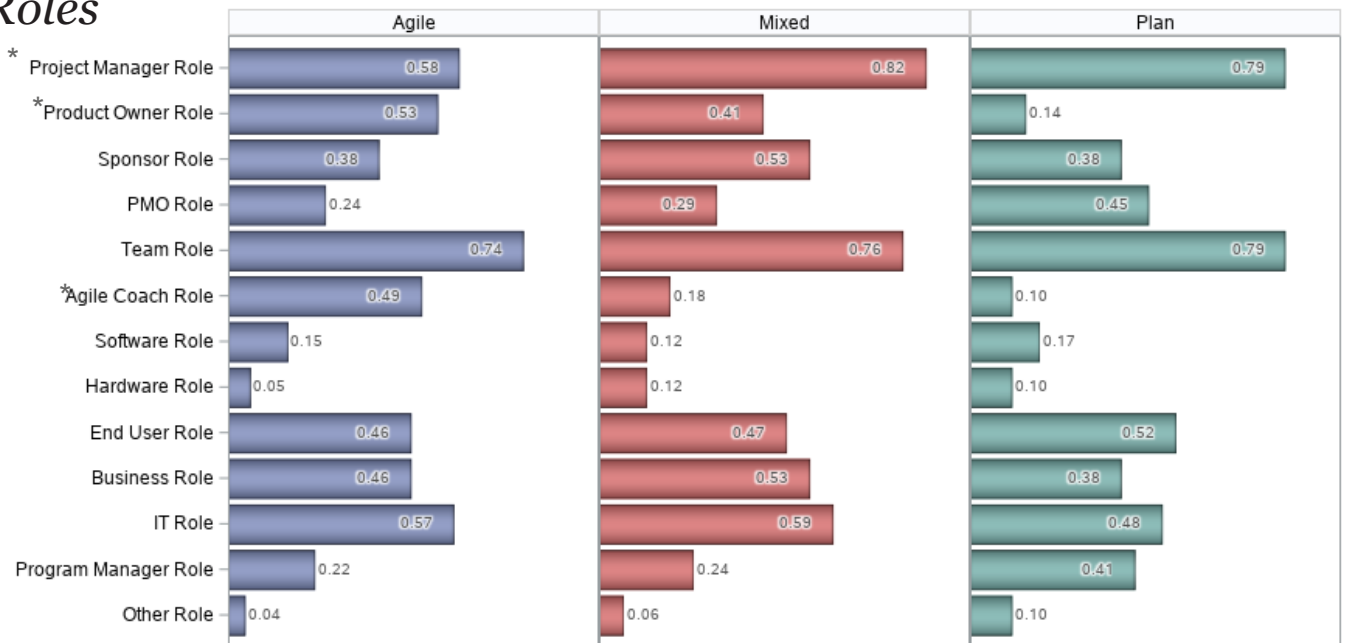
Tasks

Project Management Process & Agile Methodologies

The methodologies and frameworks for traditional projects are codified in the project management standards and frameworks, such as "ISO 21500:2012, Guidance on Project Management", "APM body of Knowledge 6th Edition", and "A Guide to the Project Management Body of Knowledge (PMBOK guide)".

The "Agile Manifesto" is a set of four values and 13 principles that provide a framework for managing technology projects in a flexible way that responds to dynamic project situations. There are at least 13 methodologies or frameworks that can be considered to follow the values and principles described in the Agile Manifesto. Scrum or a scrum hybrid is the most popular agile methodology, and it is described in the "Scrum Guide".

The heat map combines the qualitative results from the project management standards, "Scrum Guide", and "Agile Manifesto" principles with the quantitative results from the study. This provides a consolidated view of project management responsibilities for scrum projects. In some cases, it is the practice of the method itself that is responsible for realizing the activity, while in other cases, it is a specific project role.

This shows that the project manager continues to act in management roles and not only as a "gatekeeper" in agile projects. Meaning, project management tasks are distributed and delegated across a number of project roles, but the project manager maintains key responsibilities beyond just control that contribute to the project outcomes. In this study, the sponsor and product owner undertake some management activities, while the agile coach does not.
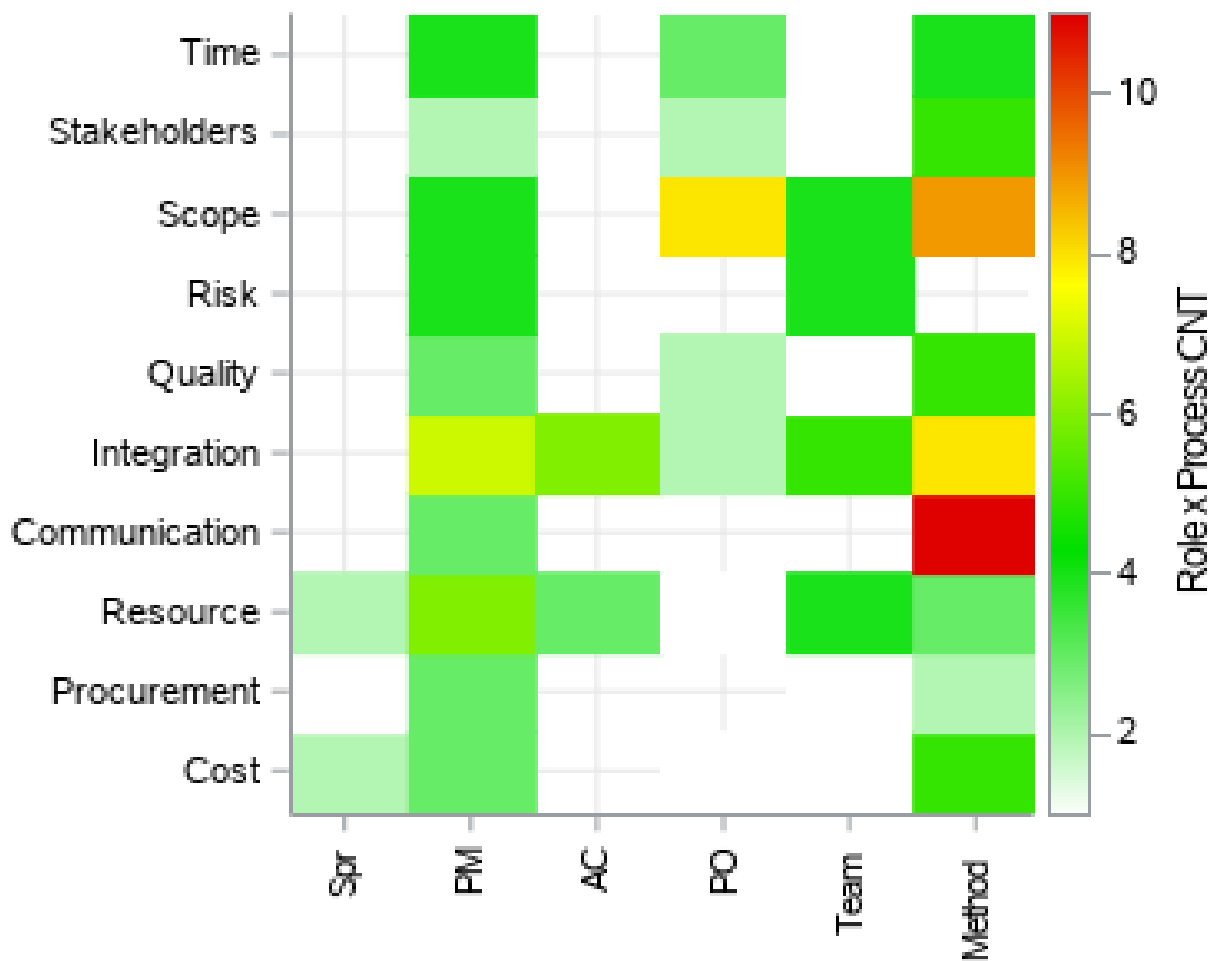
Legend:
PM-Project Manager; Spr-Sponsor; AC-Agile Coach; PO-Product Owner; Team-Team Members; Method-Agile Methodology

Project Management Process to Agile Methodologies & Role Mapping

The table provides an overview of the mapping ISO 21500:2012 Guidance on Project management processes, the 13 Agile Manifesto principles, and the Scrum Roles. The project management subject areas and processes from the ISO standards were mapped to the agile principles according to the correlation matrix from J. Binder, L. I. V. Aillaud, and L. Schilli (2014) and to the scrum roles. The blank principles without a mapping represented the gap between processes in the project management standards and those suggested by the agile principles and the scrum roles. The roles include a check mark if the Scrum framework describes a task for the role or if the survey reported that role executed that process.

ISO 21500:2012		Agile Manifesto	Scrum Roles		
Subject Group	Process	Agile Manifesto Principle	Scrum Master	Product Owner	Team
		Continous delivery		✓	
	4.3.2 Develop project charter	Scope simplification		✓	
	4.3.3 Develop project plan	Iterative execution			
	4.3.4 Direct project work	Motivated individuals	✓		✓
			✓		✓
		Daily stakeholder cooperation	✓		✓
	4.3.5 Control project work	Sustainable development	✓		✓
	4.3.6 Control changes	Harnessing changes			
	4.3.7 Close project phase or project			✓	
Integration	4.3.8 Collect lessons learned	Constant assessment and improvement	✓		✓
	4.3.9 Identify stakeholders			✓	
		Scope simplification		✓	
		Daily stakeholder cooperation		✓	
		Motivated individuals		✓	
		Face-to-face communication		✓	
Stakeholders	4.3.10 Manage stakeholders	Working software		✓	
		Continous delivery		✓	✓
		Scope simplification		✓	✓
		Harnessing changes		✓	✓
		Iterative execution		✓	✓
		Working software		✓	✓
		Sustainable development		✓	✓
	4.3.11 Define scope	Attention to excellence and design		✓	✓
	4.3.12 Create work breakdown structure			✓	
	4.3.13 Define activities				✓
				✓	
Scope	4.3.14 Control scope	Scope simplification		✓	

J. Binder, L. I. V. Aillaud, and L. Schilli, "The Project Management Cocktail Model: An Approach for Balancing Agile and ISO 21500," Procedia - Social and Behavioral Sciences, vol. 119, no. pp. 182-191, 2014/03/19/ 2014.

Project Management Process to Agile Methodologies & Role Mapping (continued)

ISO 21500:2012		Agile Manifesto	Scrum Roles		
Subject Group	Process	Agile Manifesto Principle	Scrum Master	Product Owner	Team
		Self-organized teams		✓	
	4.3.15 Establish project team	Motivated individuals		✓	
	4.3.16 Estimate resources	Sustainable development			
	4.3.17 Define project organization	Face-to-face communication			
	4.3.18 Develop project team		✓		
		Self-organized teams			✓
	4.3.19 Control resources	Motivated individuals			✓
		Self-organized teams			✓
Resource	4.3.20 Manage project team	Motivated individuals			✓
	4.3.21 Sequence activities	Continous delivery		✓	
					✓
	4.3.22 Establish activity durations	Iterative execution			✓
			✓		
	4.3.23 Develop schedule	Harnessing changes		✓	
Time	4.3.24 Control schedule	Scope simplification			
		Continous delivery		✓	
		Harnessing changes		✓	
		Iterative execution		✓	
		Working software		✓	
	4.3.25 Estimate costs	Sustainable development		✓	
Cost	4.3.27 Control costs	Scope simplification			✓
	4.3.28 Identify risks				✓
	4.3.29 Assess risks				✓
	4.3.30 Treat risks				✓
Risk	4.3.31 Control risks	Scope simplification			✓
	4.3.32 Plan quality	Working software		✓	
		Continous delivery			
	4.3.33 Perform quality assurance	Constant assessment and improvement			
				✓	✓
		Working software		✓	✓
Quality	4.3.34 Perform quality control	Attention to excellence and design	✓		✓
	4.3.35 Plan procurements				
		Self-organized teams			
	4.3.36 Select suppliers	Iterative execution			
Procurement	4.3.37 Adminiter proceurements				
		Continous delivery			✓
		Scope simplification			✓
		Harnessing changes			✓
		Iterative execution			✓
		Daily stakeholder cooperation			✓
		Face-to-face communication			✓
	4.3.38 Plan communications	Working software			✓
		Daily stakeholder cooperation			
	4.3.39 Distribute information	Face-to-face communication			
		Daily stakeholder cooperation			
Communication	4.3.40 Manage communications	Face-to-face communication			

Survey
Agile &
Project
Management

January 2019

References

The survey instrument and the research analysis were based upon the work of many other people in the project management and agile community. Due to space reasons, not all references can be listed here. The following articles were used in constructing this research summary and could be useful for people that wish to explore the topic in more detail.

Binder, J., Aillaud, L. I. V., & Schilli, L. (2014). The Project Management Cocktail Model: An Approach for Balancing Agile and ISO 21500. Procedia - Social and Behavioral Sciences, 119, 182-191. doi:https://doi.org/10.1016/j.sbspro.2014.03.022

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Serrador, P., & Pinto, J. K. (2015). Does Agile work? — A quantitative analysis of agile project success. International Journal of Project Management, 33(5), 1040-1051. doi:https://doi.org/10.1016/j.ijproman.2015.01.006