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Software and systems engineering — Agile development — Agile adoption considerations

Ingénierie du logiciel et des systèmes — Développement agile — Considérations relatives à l'adoption de la méthode agile

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Foreword

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Introduction

Agile development is a development approach based on iterative development, frequent inspection and adaptation, and incremental deliveries in which requirements and solutions evolve through collaboration in cross-functional teams and through continuous stakeholder feedback (see ISO/IEC/IEEE 26515:2018).

Many organizations recognize the benefits of moving to an agile approach to systems and software development. However, for some organizations the move can be taken too early; before the organization is ready for it. This document provides insight into appropriate considerations when adopting an agile approach to software and systems development. In this document, the focus of these considerations is the agile readiness factors that can be considered before making such a move. Using this information to increase organizational and team readiness can make the difference between a successful move to agile and a failure that prevents the organization from deriving the benefits of an agile approach for several years. This document is primarily intended to be used by those managers responsible for deciding on whether a move to agile can be made and those managers who are tasked with preparing an organization for making such a move. The agile readiness factors considered in the document can be applied at the organizational level and to projects or teams within organizations.

As a Technical Report, this document contains data of a different kind from that normally published as an International Standard or Technical Specification, such as data on the “state of the art”.

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Software and systems engineering — Agile development — Agile adoption considerations

1 Scope

This document provides an overview of agile readiness factors that are likely to determine whether an organization, project, product or team is ready to start the transition to using an agile approach to their system and software development and maintenance activities.

This document provides a general approach that is applicable to all agile methodologies and does not cover specific agile methodologies, such as Scrum, SAFe and eXtreme Programming (XP).

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
agile development
development approach based on *iterative development* (3.10), frequent inspection and adaptation, and incremental deliveries in which requirements and solutions evolve through collaboration in cross-functional teams and through continuous *stakeholder* (3.16) feedback

Note 1 to entry: Any use of the word “agile” in this document refers to methodology.

[SOURCE: ISO/IEC/IEEE 26515:2018, 3.1, modified — The reference to an external annex has been removed.]

3.2
agile maturity
extent to which an organization, department, project or team consistently applies agile values and principles that contribute to the achievement of its business needs

3.3
agile team
small cross-functional group of people who collaborate on the development of a product, within an agile methodology

Note 1 to entry: A common agile team size is 3 to 10 people.

3.4
agile team lead
individual responsible for ensuring an *agile team* (3.3) adheres to the organization’s agile principles, practices, values and processes

Note 1 to entry: The agile team lead is a facilitator rather than a manager.

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3.5
agreement
mutual acknowledgement of terms and conditions under which a working relationship is conducted

EXAMPLE Contract, memorandum of agreement.

[SOURCE: ISO/IEC/IEEE 12207:2017, 3.1.5]

3.6
customer
organization or person that receives a product or service

[SOURCE: ISO/IEC/IEEE 12207:2017, 3.1.16, modified — The example and note to entry have been deleted.]

3.7
daily stand-up
short, daily, time-boxed meeting used to discuss progress, plans and any blocking issues with each member of an *agile team* (3.3)

Note 1 to entry: Duration is not expected to exceed 15 min.

3.8
increment
tested, deliverable version of a software product that provides new or modified capabilities

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.1913]

3.9
iteration
short time frame in which a set of *software features* (3.15) is developed, leading to a working product that can be demonstrated to *stakeholders* (3.16)

Note 1 to entry: Different agile methodologies use different terms for an iteration.

Note 2 to entry: Some agile methodologies are not based on iterations.

Note 3 to entry: Typical iteration length is two to four weeks.

[SOURCE: ISO/IEC/IEEE 26515:2018, 3.10, modified — Note 3 to entry has been added.]

3.10
iterative development
repeated use of concurrent planning, developing, and testing activities

[SOURCE: ISO/IEC/IEEE 26515:2018, 3.11]

3.11
persona
model of a user with defined characteristics, based on research

[SOURCE: ISO/IEC/IEEE 26513:2017, 3.29]

3.12
product owner
stakeholder (3.16) responsible for the capabilities, acceptance and use of a product

Note 1 to entry: The product owner shares the product vision, required features and their priorities, and acceptance criteria.

3.13
release
distribution of a product *increment* (3.8) to a *customer* (3.6) or users

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3.14
software feature
software characteristic specified or implied by requirements documentation

EXAMPLE Functionality, performance, attributes, design constraints.

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.3814]

3.15
sponsor
person or group who provides resources and support for the project, program, or portfolio and is accountable for enabling success

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.3908]

3.16
stakeholder
individual or organization having a right, share, claim, or interest in a system or in its possession of characteristics that meet their needs and expectations

[SOURCE: ISO/IEC/IEEE 15288:2015, 4.1.44, modified — The example and note to entry have been deleted.]

3.17
taskboard
visual display of tasks to be completed by an *agile team* (3.3) and recent progress made by the team

3.18
user story
simple narrative illustrating a user requirement from the perspective of a *persona* (3.11)

[SOURCE: ISO/IEC/IEEE 26515:2018, 3.16]

4 Agile readiness factors

4.1 Overview

The agile readiness factors presented in this document have been derived for use by an organization that wants to determine their level of readiness to adopt an agile methodology for their system and software development. Use of these factors is not intended to provide a decision on whether to move to agile, rather it is to provide guidance on how to make the journey to agile easier. By considering these factors, an organization can gain an understanding of the main risks associated with transitioning into using an agile approach and the factors they need to consider when preparing to transition towards agile ways of working.

The factors are grouped into six logical areas:

— organizational;

— customer;

— project;

— management;

— people/team;

— tools and practices.

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