

# Agile Methodologies

## Enlarge The Available Skill-Set



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# Executive summary



In a more challenging economic environment, companies are having a greater focus on securing projects delivery and on launching new cost reduction initiatives. Meanwhile, our last surveys reveal that, over the last 10 years, 30% of projects exceeded initial deadlines and 50% of them multiplied their initial budget by almost 3.

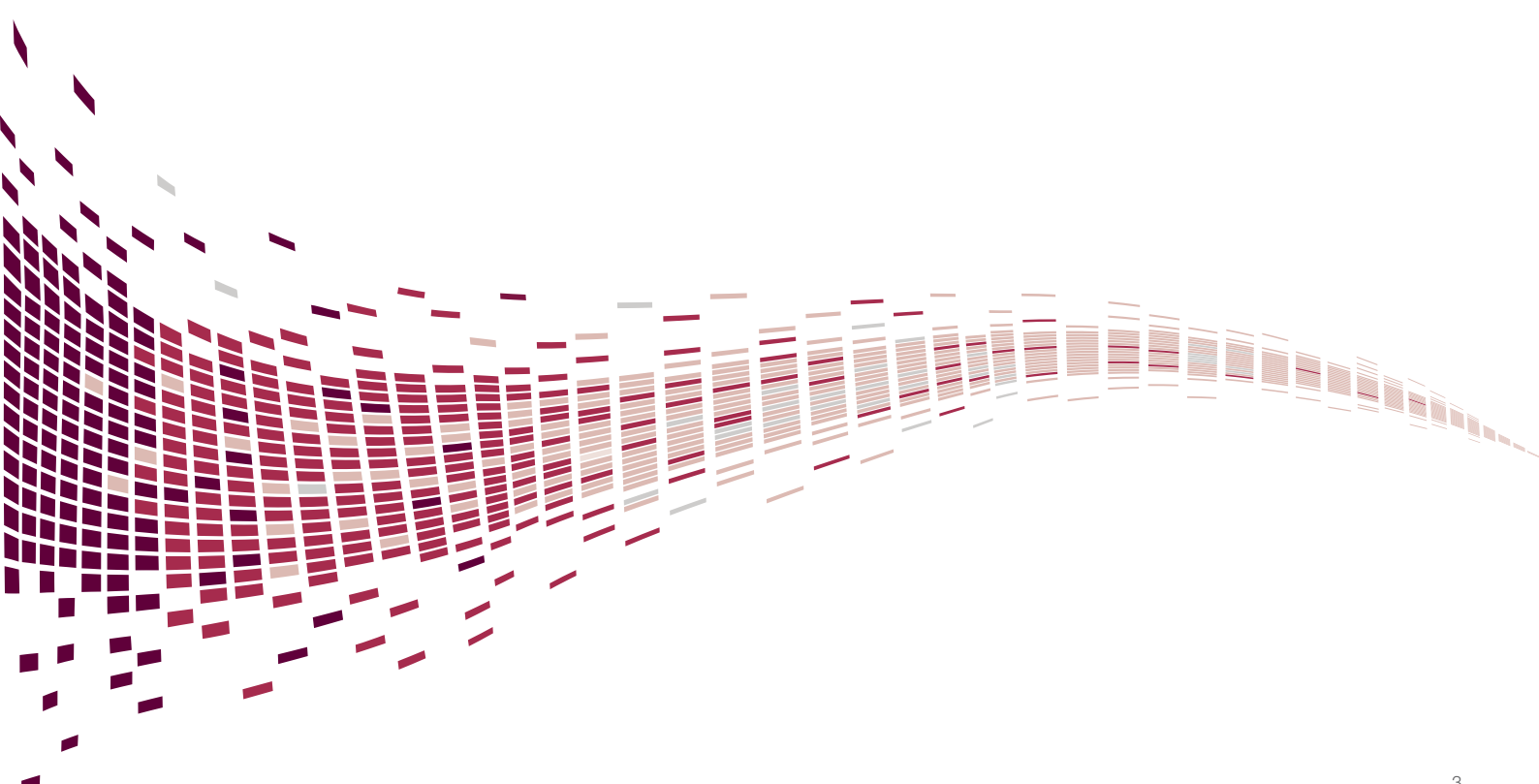
As the traditional project management methodologies have been more and more challenged, Agile methodologies emerged from the field as a new paradigm that foster the ability to manage changing business priorities while securing the deadlines and the dedicated budget.

As the line between Business and Technology is fading, and because working in an emergency environment is getting common, agility has become critical for software development. It indeed allows to shorten time to market. It also provides more relevant answers to users as it brings together IT and Business people who are involved all along the project.

Implementing Agile principles is a long journey that impacts the IT department's organization, governance and HR strategy. Experience shows that most of the time, companies select a limited part of key Agile principles to integrate in their software development process. However, we have seen in the last years several projects that failed to apply Agile principles mainly because the impacts on the organization, the governance or HR strategy had been miscarried.

Capgemini Consulting recommendation is to take a stepwise approach to build for each project a pragmatic and specific Agile methodology. The design of this methodology must structure the action plan to adapt the organization, the governance and skills of the IT department or even the company.

Consequently, Capgemini Consulting believes that the journey into agility has to be managed as a transformation project in which Business and IT stakeholders must be strongly involved.





**01.**

Agility ... to what purpose?

## Agile vs. traditional methodologies

Agile methodologies are a paradigm of software development methods that aims **to overcome the traditional methodologies tunnel effect** (figure 1), from the definition of business requirements to the delivery of the end product. Instead, Agile methodologies foster the ability to manage evolving business priorities while **keeping the deadlines and budgets under control**.

In the traditional methodologies, the functional scope is fixed while the quality of the product can be adjusted. However, as a decent level of quality is always required, most of the encountered problems result on overrunning deadlines and budget.

On the contrary, the functional scope is continuously reviewed in the Agile approach depending on the generated business value. This flexibility allows capturing the business value while ensuring a fixed budget, deadlines and the appropriate level of quality.

Agile methodologies are an iterative approach which breaks long traditional releases into small iterations of 2 to 3 weeks called “sprints” (figure 2). Those sprints cover the overall development process from catching business requirements to the final tests. Product demonstrations at the end of each sprint provide regular business feedbacks that can be integrated to the next sprints and help secure the alignment with the business requirements.

Figure 1 - The tunnel effect in traditional software development methodologies

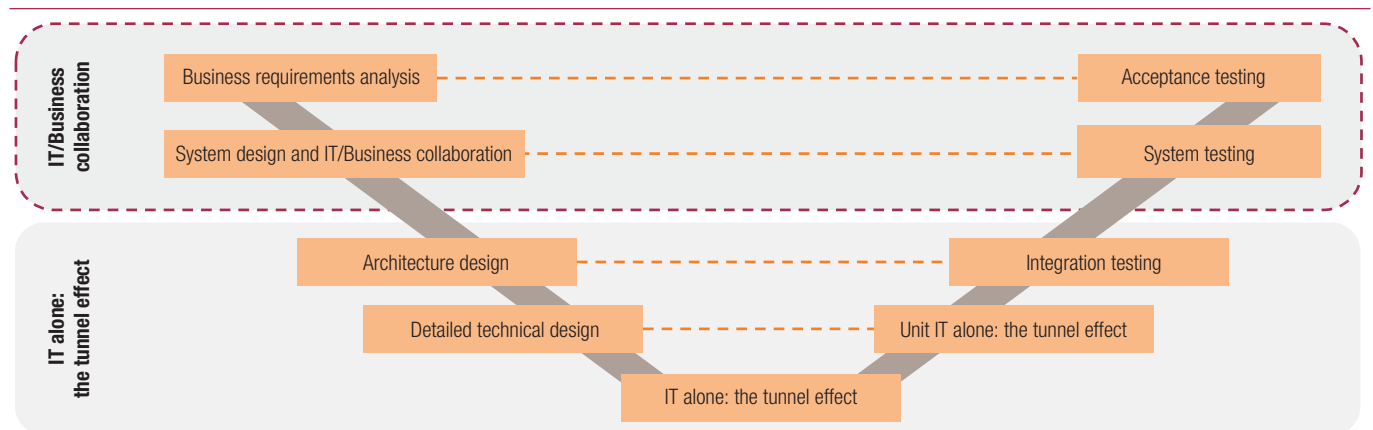
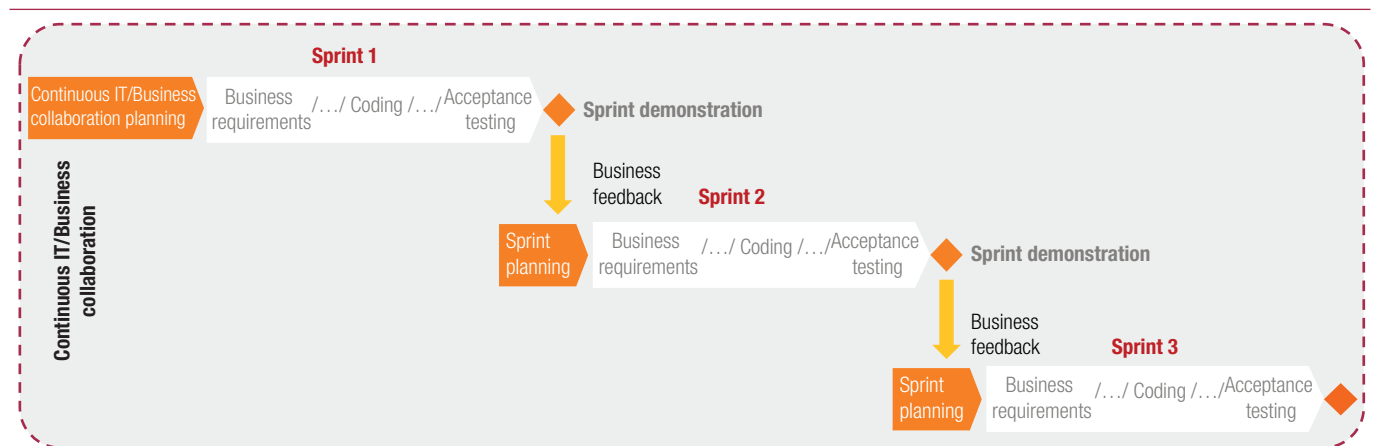


Figure 2 - Continuous business feedback with the Agile development methodologies



Surveyed CIOs<sup>1</sup> agree that agility accelerates and secures projects while priorities and requirements quickly evolve (figure 3). It then provides a greater visibility on project delivery and secure deadline and budget objectives.

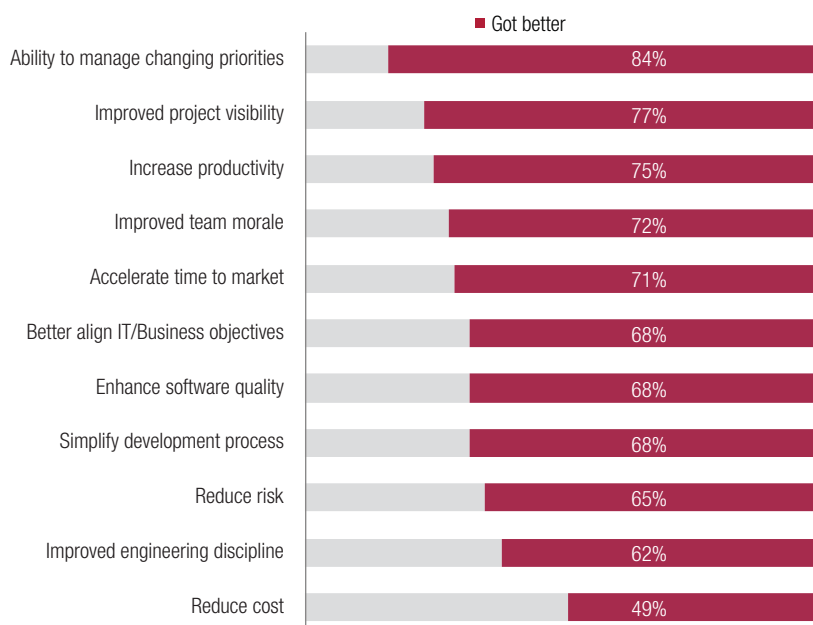
Agile methods have started to become widespread : **35%**<sup>2</sup> of CIOs express that Agile is the company's main development approach and only **34%** of those CIO's still prefer traditional methodologies (waterfall and iterative) as the main approach.

However, the primacy of the novelty is still true: **70%**<sup>3</sup> of those Agile initiatives are less than 3 years old.

As a result, few companies have completed their journey into agility. Instead, Agile initiatives cover several intermediate forms:

- **4/5** design a **customized methodology** that take into account the company's level of maturity,
- **2/3** adopt a **mix between Agile and traditional** methodologies in the project portfolio.

Figure 3 - Survey of the benefits measured by CIOs who adopted an Agile methodology



## Fundamental guidelines of Agile methodologies

What strongly characterizes Agile methodologies are the iterative approach and the stronger involvement of business representatives during the project.

Indeed, all Agile methodologies share in common a set of 7 key Agile development guidelines:

**1. Short, iterative development cycle.** The project is realized through short iterations (usually about two weeks), which provide the Business with instant visibility.

**2. Dedicated business representatives,** who are highly involved in the team. Best practice implies choosing a "Product owner" with a relative high level of business experience and decision power must be chosen. The product owner is accountable of the prioritization of functionalities and their overall alignment.

**3. Iteration planning meetings.** Agile projects are value-driven. Before starting a sprint, functionalities are collected,

prioritized by the business and the cost is estimated by the IT. Planning meetings aim at defining the functional scope of the following sprint taking into account the different feedbacks from the previous demonstrations and any evolution of business priorities. A highly effective team can manage the delivery as a Just-In-Time activity where no specification is made without delivering the functionality at the end of the sprint.

1 State of Agile Development survey , VersionOne 2011

2 The Forrester Wave Agile Development Management Tools 2011

3 French Scrum user Group(FSUG) study 2011, "Vous, votre Organisation et Agile"

**4. Daily stand up meetings.**

There are short but structured meetings that aim at uncovering any blockage or issue. Those meetings instill a strong team dynamics and discipline. Agile teams must be self-organized and require highly skilled members.

**5. Team « Co-location ».** Agile methodologies require a high level of communication within the team. Co-location is usually preferred. An intensive and adapted use of collaborative tools helps reach high team effectiveness.

**6. Emergent architecture and design of the project.** Rather than having a fixed, prescribed design, the design phase is flexible and starts emerging as the iterations progress. The source code is continuously integrated to avoid large integration problems and issues.

**7. Test-first development.** Agile methods deliver a bug free product at every sprint. Test and integration automation is strongly required as the team deliver a continuous flow of functionalities.

A recent survey<sup>4</sup> states SCRUM and a SCRUM/XP hybrid as the main standards of software development agility with approximately 75% of implementation initiatives (figure 4).

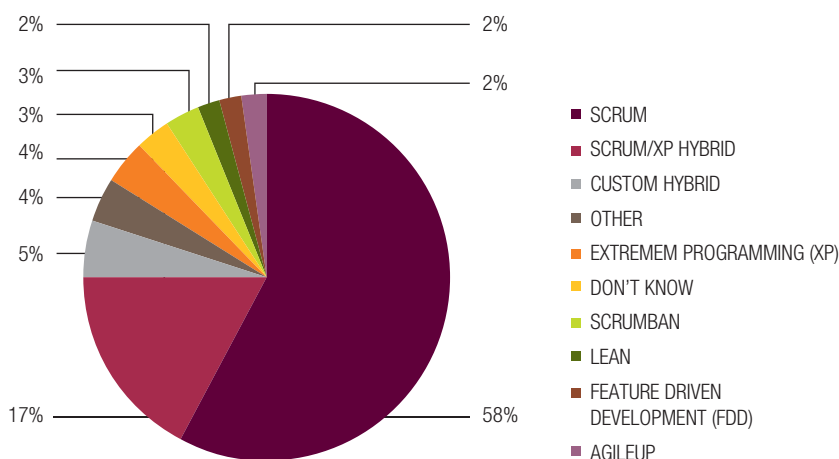
Three reasons can explain the Scrum success:

- **Simplicity.** Scrum focuses on delivery and practice.

- **Practicality.** Scrum addresses key elements such as organizing the team, allocating work, reviewing status and improving actions plan.

- **Popularity.** as Scrum is the most common Agile methodology, teams are gradually recognizing its efficiency.

Figure 4 - SCRUM is the most used Agile methodology



4 State of Agile Development Survey , VersionOne 2010





**02.** How to implement successfully Agile methodologies?



Experiencing Agile methodologies requires a significant transformation of the way IT is considered.

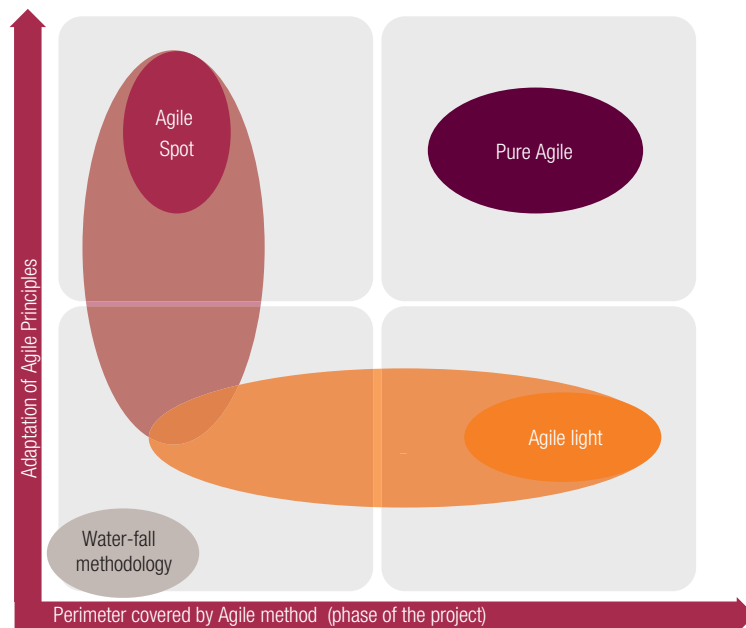
Many barriers, both internal and external, should not be underestimated:

- The company’s **culture** and the ability to change,
- The lack of **experience, discipline** and appropriate **skills**,
- The **complexity** of IT process and organization,
- The **heterogeneity** of the project portfolio.

Despite common beliefs, **Agile methodologies do not solely apply to small and web projects. Our experience shows that companies, in any industry and with any level of maturity, can succeed with Agile techniques** if they:

- Design a specific methodology that focuses the effort on some key project phases and agile techniques.
- Take a stepwise approach based on learning-by-doing and a continuous performance measurement and optimization.

Figure 5 - Depending on the context, a more or less adapted Agile methodology should be considered



- Consider the impacts on the organization, the governance and the HR strategy.

According to our experience with clients, we have defined 3 ways to implement agility on a project:

1. **Pure Agile.** Most commonly used for the “small-medium” size Web projects, this method easily suits for projects which do not require a deep interfacing with the overall company IT system.
2. **Agile Spot.** Use of Agile on some key phases of the project within a water-fall methodology (e.g. during design or development & test phases) or on a project within a program.
3. **Agile Light.** Application of only few principles of the Agile methodology throughout the project, adapting to the constraints of a major transformation project.

## How can we help you identify the most appropriate scenario?

Building a relevant strategy to move into Agile requires a rigorous analysis and an accurate estimate of the dysfunctions in existing IT process and organization as well as the internal and external barriers to Agile implementation.

Part of the levers / barriers lies in the global context of the company (culture, organization, outsourcing, etc.) while another part is directly due to the specificities of each project (time to market, budget, teams size and location, technical constraints, etc.).

**Thus, we can realize an agility maturity assessment that exhaustively covers the internal and external opportunities and barriers, and identifies the projects to begin with and the best suited methodology for each of them.**



**03.**

Intensive focus on 6 major topics

Focus on a project centric approach is not sufficient to succeed on really moving the company into IT agility and capture the whole benefits. In parallel with the focus on the project portfolio to define the Agile implementation strategy, the CIO must have a broader view of the IT organization, governance and HR strategy.

We distinguish six major levers that the CIO must consider very early:

- 1. People.** Agile methodologies bring a new culture of greater **collaboration between Business and IT** stakeholders throughout the project. Team members must be supported and coached in order to acquire new skills and get **self-organized and disciplined teams**. Companies must review their incentives strategy as well as their **recruitment strategy**. Hiring very experienced people is one possible strategy to secure the early adoption of Agile methodologies.
- 2. Project management role and responsibilities.** It is relatively difficult for a single manager to take all decisions in an agile project, given the pace of project artifacts such as daily meetings. Thus, project managers must create **new roles (Product owner, SCRUM master, etc.)** accountable on short term decisions and instilling a strong team dynamic.
- 3. IT process.** Existing process and organization are strongly challenged as new Agile projects have a completely different rhythm than the other projects. **Clear interfaces** must be defined between traditional and agile projects in order to correctly **monitor the dependencies**. New tools may be required as the integration and testing phases are deeply impacted. It is recommended to start with pilot projects in order to gradually transform the existing process.
- 4. Committees.** Decision process is accelerated during an Agile project. Aligning governance planning with iterations rhythm is key to ensure the project progress.
- 5. IT procurement.** Agile methodologies are characterized by a strong commitment to short term cycles and uncertainty on the exact functional scope of the final product. Trust must be improved with project internal and external stakeholders by setting clear responsibilities and common objectives. Billing mode and performance measurement plan must focus on delivering business value and allow for adjustments.
- 6. Deliverables and management tools.** A major pitfall of Agile methodologies implementation is the lack of documentation. Project managers must ensure that deliverables are correctly tailored to ensure the effectiveness of the team and the commitment to certifications and legal obligations.

## Conclusion

Agile methodologies are catching more and more attention from CIO's as they enable securing projects' deadlines and budget while effectively managing changing business priorities. However, there are important internal and external barriers that require a deep transformation starting with the company's culture regarding the IT process and governance to the procurement strategy.

Today, companies embrace the digital revolution with a higher focus on the time to market and the delivered business value. Capgemini Consulting strongly believes that the mastery of Agile methodologies is a key competitive advantage in a challenging economic environment and a pre-requisite of a successful digital transformation.

## Authors

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### Cyril FRANÇOIS

Senior Vice President  
cyril.francois@capgemini.com

The author would like to acknowledge the contributions of **Rami Bali**, **Anne Ruelleux** and **Julia Sauquet**.



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