

# Lean vs Agile Project Management, alternative or complementary approach <sup>1</sup>

By Luca Cavone

## Abstract

Methodologies are not good for "all seasons" and do not apply equally with the same results in all contexts and / or industries. Lean and Agile approaches were created to overcome some of the limitations of the traditional Project Management techniques.

Despite the common principles at the base, do Agile and Lean represent alternative or complementary approaches? Which of the methods is most effective and where? Again, what the reasons why? The background, industry, process, business innovation level, object delivered ( i.e. "Product" or "Service"), etc.. What else?

This paper illustrates an operational framework for scenario mapping. The analysis and the proposed approach are based on real cases, with the aims to present commonalities and differences between Lean and Agile techniques.

*Keywords: Lean, Agile, Project Management, Innovation*

## Introduction

When dealing with a project, we always have to consider its objective(s). In fact, literature as well as the international experiences developed across the past decades and any among the standards available today do refer to concepts such as strategy, scope, stakeholders, time, cost, quality, risk, etc...

Even though a project target gets set depending on the related business type, context and other features, we can state that in the overall picture the ultimate goal of a project is its success. Success (or failure) is affected and determined by all or a part/a mix of the said elements.

To attain a successful result we can then consider what the factors are which play a major influence (the key contributing factors). Of course there is no way to have a standard approach valid at all times; the right balance needs to be found case by case.

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In time, a significant number of project management methodologies and tools were born. Even though viewed as commodities today, such techniques are in fact a great help for properly managing projects. However, in no case their application can be constrained into a copy-and-paste approach, by taking something that has worked elsewhere and simply get it replicated. Suitable methods should be selected and customized where needed, prior to applying in proper context.

It is then important to identify per each project the correct drivers, pointing the right direction. It is quite frequent that traditional methods are not suitable and can fail. Other methods are needed and new approached may be born in the meantime.

In the same perspective it is worth quoting the Lean and Agile Project Management, which were created and introduced to overcome some of the limitations of traditional Project Management techniques. Collecting common sense and feedbacks by company people and business professionals, there's not always a clear understanding between the two, and historically this created some confusion. The point on which this article focuses is to understand the relationship among these methodologies, clarify if they represent a similar, different or complimentary approach and as a consequence how to deal with their applicability.

### **Origins, commonalities and differences**

All the techniques based on Lean principles were developed from a common origin, which dates back to the methodologies born in Japan in the mid-50s of the last century. Ahead of these was the "well-known" Toyota Production System (TPS), which had been introduced by Taiichi Ohno in the homonymous company and decades later became the foundation of the lean principles and of their widespread dissemination worldwide, in various industries and different business processes.

Later on those management principles found a meaningful application with regard to the best practices and project management area.

What is called and recognized today as Lean Project Management (LPM) had its genesis and primary application in the manufacturing industry, being closer to the original environment of TPS. On the opposite, the most recent Agile Project Management (APM) was conceptualised and developed in the software industry.

In both cases, leveraging on a common ground of concepts like continuous improvement, team empowerment, elimination of waste, etc..., the final objective is to address the typical issues of knowledge intensive work: unclear goals, lack of information, late changes, ineffective meetings, poor reuse of knowledge, non-added value activities, delayed decisions, unsolved problems, etc...

Apart from the whole theory of either methodology, which is not the goal of this paper, we can focus back on some key concepts, distinctive for the two approaches and respectful of traditional techniques.

Some of the said concepts are described herewith. For a complete summary see the table below.

One of the main concepts common to both approaches is definitely the elimination (reduction) of waste, which is how any non-value added activities are defined.

To be practical this concept is usually intended as the reduction of the waiting time between activities, the reduction of handoffs while maintaining the flow tense, reduction of the over production or over quality, avoid multi-tasking.

Although in both cases the concept is very strong and is the basis of all the implementation of the two methods, because of its Japanese roots in LPM it is perceived and implemented in the stronger way.

A second strongly remarked element is the role of the "customer". About this, however, the way LPM and APM decline this feature respectively is slightly different. The APM is especially stressing the concept of "involvement" of the customer, in the sense of taking a real active part.

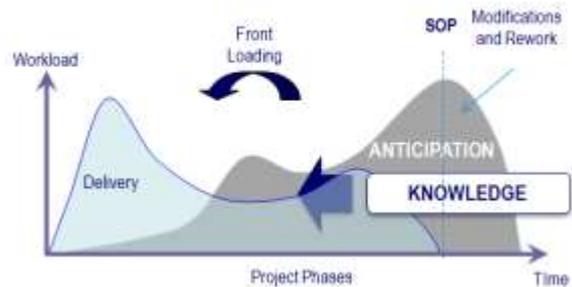


Figure 1: Anticipation and Front Loading

The figure of the customer or his representative, is present on the project, addressing the priorities along the development phase, it provides rapid feedback to the team.

On the opposite, LPM addresses the theme on another perspective, but always linked to the concept of value. The customer is not present "physically" as in APM approach, where we have just seen addresses priorities in development phase. Conversely, here is the project team, even involving them, to think what should be the right value to be provided to the customer, what are for him the value-added activities and which are not. The entire project is designed from the perspective of customer value. However, co-design is also applicable as a structured way for development.

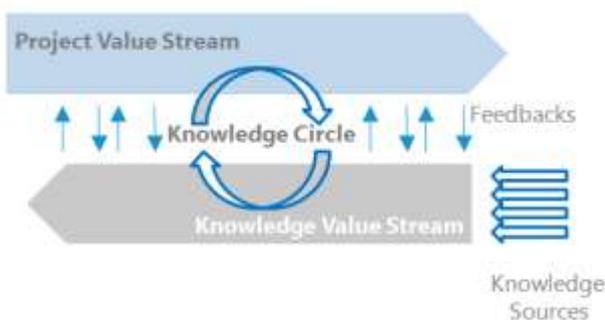


Figure 2: Project Value Stream vs Knowledge Value Stream

The next dimension we want to consider concerns in a joint way the process dimension, knowledge and decision making sphere. About this, the approach in the two cases is different.

Lean Project Management is basically about anticipation and front loading that mean to rebalance the workload and effort in the front phases of the project, thanks to the involvement of all the project people since the beginning. This allows a parallel

dimension for a higher level of knowledge, while reducing uncertainties and benefiting of a more clear understanding of the project, goals and activities, effectiveness in delivering outputs with the proper time and quality. Knowledge management is then a key process: the knowledge already capitalized rises along the flow of the project and together with the new generated knowledge through the project feeds the virtuous "Knowledge Circles".

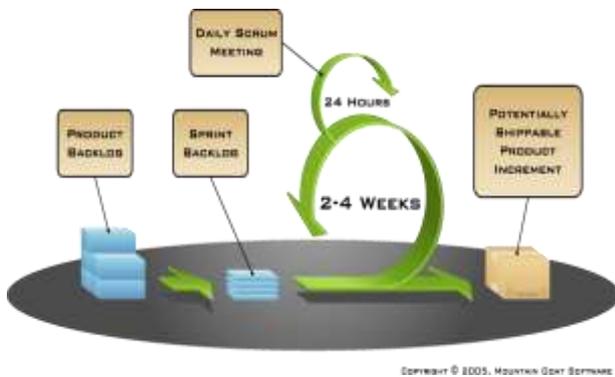


Figure 3: Scrum Process

On the opposite Agile Project Management PM is on a specular prospect. There are situations where it is not possible nor it is cost-effective to try to define everything in advance. For various reasons the changes can also arrive at the end of the project, to which having defined all at the very first, would lead to a large impact of time and cost in the case of changes.

APM provides an adaptive and iterative approach that includes specific moments of review and redefinition of priorities, taking into account these aspects.

<b>Lean Project Management</b>	<b>Agile Project Management</b>
REMOVE WASTE	Remove waste
Cross-functional team	Cross-functional team
VALUE FOR THE CUSTOMER	CUSTOMER INVOLVEMENT
co-design with suppliers	PRODUCT BACKLOG
ANTICIPATION & FRONT LOADING: ASAP	ADAPTATION: ALAP
EARLY INVOLVEMENT OF ALL THE TEAM	Clear view of the project progress
project scope sharing and risk identification	TIMEBOXING
easier planning activity, synchronization	ITERATIONS, SPRING
CONCURRENT ENGINEERING	batches
self organization, people developmen	PRIORITIZATION
LESSONS LEARNED	FEEDBACK & RETROSPECTIVES

Table 1: Lean vs Agile – main key concepts (with capital letter)

## Case Studies

In our experience as consultants, every day we have relations with companies very different from one another. They differ for industry, turnover, size, complexity, level of innovation, market environment and so on.

Having the opportunity to observe a variety of enterprises and their evolution over time, we have been learning that project management represents something different in every situation.

Recently we have gone through a review of the projects entailing a support by JMAC in the implementation of Project Management methodologies, and in consideration of the value-for-customer perspective, we have matched those intervention with the methods that have proven to be best fitting to help companies at their improvement.

The outcome of our analysis was very interesting: there is evidence of some "patterns" where a macro-classification is applicable according to appropriate significant drivers.

For simplicity, we provide here some examples taken from our real case studies that will help us to understand.

The first case refers to a company in the "Energy & utilities" industry. In this situation we have seen that the reference industry has a low variability and the market is stable. On a different dimension, the level of innovation is low, while projects have high complexity and long delivery time. The typical issues of such projects are therefore related to the timing, the high investments and the high number of resources involved, especially on construction sites where a further challenge is multiculturalism.

For such reasons, it is key to the success of the project to identify and address in advance all the issues and risks, relying on the knowledge that the project team and also other employees can bring.

The approach that best enhances these components, to ensure effective management is Lean Project Management.

The second case we present is from an IT company. In a complementary way to the above, this industry has high instability of the market, as well as the variability of the boundary conditions and the level of innovation. As a natural consequence, the time-to-market for the development projects is very short.

Another important factor impacting the timing is the frequent change requests from the customer, especially when coming in very advanced stages of development.

The approach to be followed is therefore key to know how to be flexible, in order to address changes in the most effective (from the customer perspective) and efficient way (from the company perspective, managing resources and priorities). It's then important to establish a very fast mechanism of feedback.

For all these features, we found that the approach that best suits the management of these projects is the Agile Project Management.

Finally, we present the case of a company in the fashion industry.

This situation fits ideally between the previous two, since the instability of the market and of the environment is high, as in the case of IT companies, the timing is in an intermediate stage, while the level of innovation in the industry is as for the first case tending to medium / low.

The typical issues in such kind of project are time management, both in reference to the seasonal collections and the high variability in the development and delivery time. In addition, the change requests from the client are frequent and widespread until the last stage of the project.

In order to better manage and address these critical issues is needed a strong involvement and co-design with the customer across all the projects, adopting a mixed approach that draws both on the anticipation and flexibility, the so-called option-based approach.

Based on this we have seen that a totally focused approach on LPM or APM was not enough in order to deal with the complexity of such case, so we thought to draw on both methods with a mixed approach that would take the benefits of each.

<b>Drivers</b>	<b>Case A</b>	<b>Case B</b>	<b>Case C</b>
<b>Industry</b>	Energy & Utilities	IT	Fashion / Luxury
<b>Market Instability / Context Variability</b>	Medium	High	High
<b>Innovation Level of Industry</b>	Medium / Low	High	Medium
<b>Lead Time / Time to Market</b>	Long	Short	Medium
<b>Complexity</b>	High	Medium	Medium
<b>Issues:</b>	<ul style="list-style-type: none"> <li>• long term project;</li> <li>• high investments;</li> <li>• many resources involved;</li> <li>• different cultures;</li> <li>• site constraints;</li> <li>• suppliers management;</li> </ul>	<ul style="list-style-type: none"> <li>• very short delivery time (2-4 week);</li> <li>• customer changes often;</li> <li>• resources shared on many projects;</li> </ul>	<ul style="list-style-type: none"> <li>• seasonality (collections);</li> <li>• variable delivery time (from 2 week up to 1.5 month);</li> <li>• customer changes;</li> <li>• resource shared on many projects;</li> </ul>
<b>Focus:</b>	<ul style="list-style-type: none"> <li>• early identification of issues and risks;</li> <li>• anticipation;</li> <li>• Knowledge Value Stream;</li> </ul>	<ul style="list-style-type: none"> <li>• customer involvement;</li> <li>• priority sharing;</li> <li>• flexibility;</li> <li>• quick feedbacks;</li> </ul>	<ul style="list-style-type: none"> <li>• customer involvement and co-design;</li> <li>• anticipation;</li> <li>• flexibility, options-based approach;</li> </ul>
<b>Selected Approach:</b>	Lean Project Management	Agile Project Management	Mixed Lean / Agile

## The Proposed Approach

Starting from the examples presented, and further in-depth analysis, we have found how significant attributes can help to describe different kind of projects. In the classification proposed, we have referred to:

- Market Instability / Context Variability
- Level of Industry Innovation
- Lead Time / Time to Market
- Complexity

By varying the values that these attributes can take, different project profiles can be defined and per each, suitable methods can be chosen to best handle them.

In the approach that I'm going to explain shortly, we mapped the different cases on a diagram; along one dimension we have considered the level of market uncertainty or variability of context, while on the other dimension we have pointed out the innovative content or speed of innovation, related to the industry the organizations involved do belong/ the projects refer to/are made for.

According to this model, we focused on three significant cases, here named as “Traditional projects”, “Complex projects” and “Extreme Projects”.

The so called “Traditional projects” have generally low innovative content; the reference market and boundary conditions are stable.

On the opposite, “Extreme projects” have at same time high innovative contents or speed of innovation and high market instability.

“Complex projects” are in-between the other two.

Before dealing with methods, we considered it important to reflect on the unique features that define each of the three situations, in relation to the drivers identified:

- situations such as those of traditional projects have no special requirements.

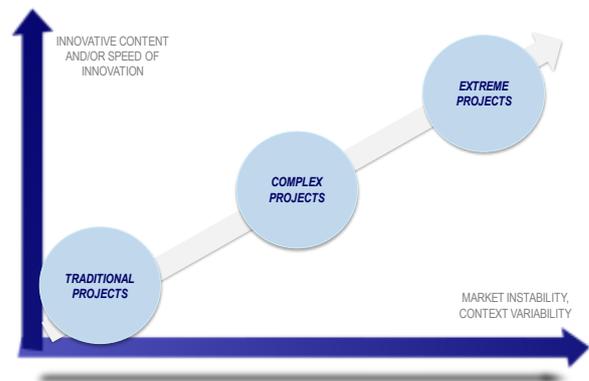


Figure 4: Classification of Projects

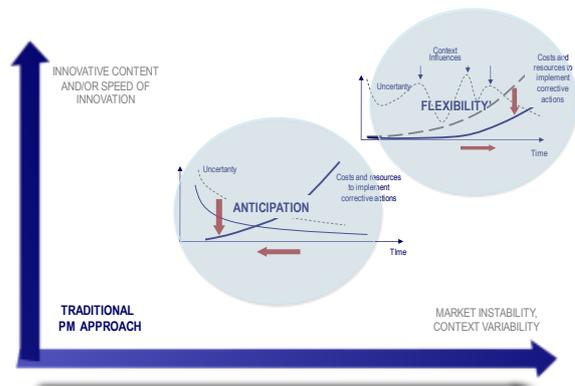


Figure 5: Project's Features

- In projects with mid-level innovative content, in stable markets, we see that *Anticipation* and *Front Loading* are key factors to address the project success effectively.
- Projects featured by highly innovative content and strong instability of the environment/ market require a very flexible approach up to their delivery.

According to the proposed model, LPM is the approach that best combines the needs of complex projects. On the other hand, APM is the approach which best suits projects in those contexts characterized by high flexibility. Standard techniques are still valid for the traditional projects.

Of course, not everything can be associated to this classification. Some situations require workarounds, as explained in Case C for the company from the fashion industry.

In similar cases it's possible to opt for a mixed approach drawing/bringing out from both methodologies and enhancing each as well, the value-added components only.

## Conclusions

This paper has presented how the Lean Project Management and Agile Project Management, although starting from the same origin and having many points in common, represent two different methods.

Based on what distinguishes them, it is important that in their application we understand the cases in which LPM or APM best fit/perform.

In order to do this it's necessary to define those projects in which they (either LPM or APM) will be applied in accordance with appropriate drivers. Following to the proposed approach we have seen how they have been defined in reference to the variability of context or market, the level of innovation of the reference industry, the level of complexity of the projects and the delivery time.

To sum up, our conclusion is that the Lean Project Management is best suited to projects where *Anticipation* and preliminary risk management are a key component. Vice versa Agile Project Management applies for situations where high flexibility is required throughout the project.

Of course there are situations in the middle. Our experience demonstrates that hybrid approaches are also possible.

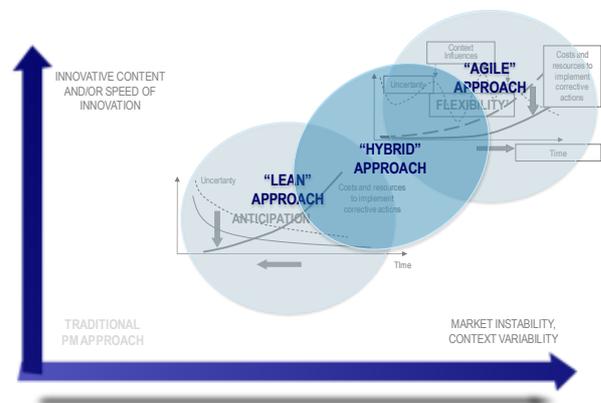


Figure 6: Different Approaches to Projects

## About the Author



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**Luca Cavone** is a Consultant at JMAC Europe, the Consulting firm of the Japan Management Association. He is mainly focused to support companies in Innovation Management and Product Development Projects typical of R&D and Marketing areas, with an interdisciplinary background of the business processes. In JMAC Luca follows also the study and development of project management methodologies based on the application of Lean Thinking approach. Before joining JMAC he worked several years in the Aerospace industry. Since 2009 Luca has been actively involved with the International Project Management Association (IPMA); at that time he was between the founders of the Young Crew Italy and was appointed as first chairman. In 2011 he left the position to join the Young Crew Management Board, where he's currently Head of Membership and Responsible for the Young Project Manager of the Year award. Since 2010 Luca is also a member of the Executive Board of IPMA Italy. Luca is also an international correspondent for PM World in Italy; he can be contacted at [luca.cavone@tiscali.it](mailto:luca.cavone@tiscali.it).

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