From Agile Delivery, to an Agile Organization

Contents

Introduction: Industry context

"Intelligence is the ability to adapt to change"
– Stephen Hawking[1]

"The only constant is change". The concept embodied in this phrase, credited to the Greek philosopher Heraclitus, has been particularly prevalent to many organizations' strategy of creating an adaptable business model, i.e. a model that allows businesses to adapt to ever-changing circumstances and stay ahead of the competition. In the context of large organizations, this adaptability[2] has generally been determined by their ability to change: change strategy, change processes, change products, etc.

While the principle of constant change has been generally accepted since the aforementioned phrase was first coined some 2.5 thousand years ago, over the past century the increased prevalence of another concept has been witnessed which, even though not novel, had remained fairly unexplored in the past: the idea that the pace of change also needs to be factored in. It is widely recognised that the rate at which variables change in today's world is both unprecedented and continuously increasing (accelerated change). As such, it is not only the ability of organizations to change that comes into question, but also the extent to which they can do so at a fast-enough pace.

Large organizations have traditionally employed various methodologies in order to deliver change, mostly involving a series of sequential steps (from ideation to delivery), performed by different teams. However, the abovementioned pace of change is encouraging organizations to explore alternative methodologies, where change delivery is broken down into smaller components, managed by multifunctional teams.

Many factors have led organizations to seek a new way of working in order to keep up with today's accelerated pace of change, brought about by phenomena such as the exponential increase in connectivity, the global spread of mobiles, the widespread adoption of social networks, etc.

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[1]Attributed to Stephen Hawking. Graduation ceremony at Oxford University (1966). Stephen Hawking was a theoretical physicist and cosmologist that worked on the basic laws of the universe. He was Director of Research at the Department of Applied Mathematics and Theoretical Physics and Founder of the Centre for Theoretical Cosmology (CTC) at the University of Cambridge, and the Emeritus Lucasian Professor for Cambridge.
[2]The ability to adapt to change is known as resilience.

The need for agility

The need of organizations to increase the pace at which they deliver change is multifaceted, and can be evidenced by multiple occurrences on a global scale, such as the rapidly changing economic environment, technological advances that are disrupting entire industries, and increased political uncertainty. The main factors underlying this trend include:

Emergence of disruptive technologies

Innovation and speed to market are two of the key requirements to capture and retain clients. New technologies such as Data Analytics, Artificial Intelligence and the Internet of Things are enabling companies to develop state-of-the-art products and services, bring them to the market before their peers, and learn from their errors when they fail. Organizations that embrace digitalisation are building resilient and flexible processes that enable them to quickly reallocate critical resources to adapt to the evolving needs of the customers. This trend goes beyond IT businesses, as more and more companies across all industries are introducing these new technologies in their operating models. In addition, the emergence of digital leaders such as Google, Apple or Amazon, or new digitally native business models such as Netflix, Spotify or Uber, has reshaped customer relationships and customer expectations around quality of product, quality of service and accessibility, enabling these companies to achieve better results while being more efficient, and increasing market competition.

Increased political uncertainty

The recent financial crisis, in addition to some other circumstances, has disrupted the global political framework. The rise of national extremism, coupled with various political events such as the planned exit of the UK from the European Union, have impacted international trade, whilst at the same time increasing overall uncertainty over the future state of global business. As a result, organizations are decreasingly able to plan for the long run.

Changed competitive landscape

The global competitive environment is rapidly changing. Fuelled by factors such as globalisation, easier access to information, and low barriers to entry, new disruptive competitors are emerging at a fast pace. Such organizations can use digital technologies to reach a wide audience quickly, and at the same time rapidly deploy new products and solutions. As such, large, established organizations, often burdened with a complexity that comes with decades of operation, need to be able to adapt and become flexible in order to keep up with the new competitive forces. This is evidenced by the continued growth of the global start-up revolution, with global venture capital funding booming, with over $140 billion invested[3] and creating value at global level estimated to be $2.3 trillion during the period 2015-2017 (a 25.6% increase from previous years[4]).

In the financial services industry, for instance, GAFA (Google, Apple, Facebook and Amazon) & FinTechs have shaken the confidence of leading institutions, right after the major setback suffered due to the financial crisis and the regulatory wave that followed it. Global investment in FinTechs increased steadily between 2014 and 2017; accelerating their growth in the first half of 2018[5] (figure 1).

The fact that these new digital-born competitors do not suffer the constraints that traditional major entities have, such as out-of-date legacy platforms and tighter regulations, has enabled an exponential growth of their influence and market share. And their long-term potential is even greater.
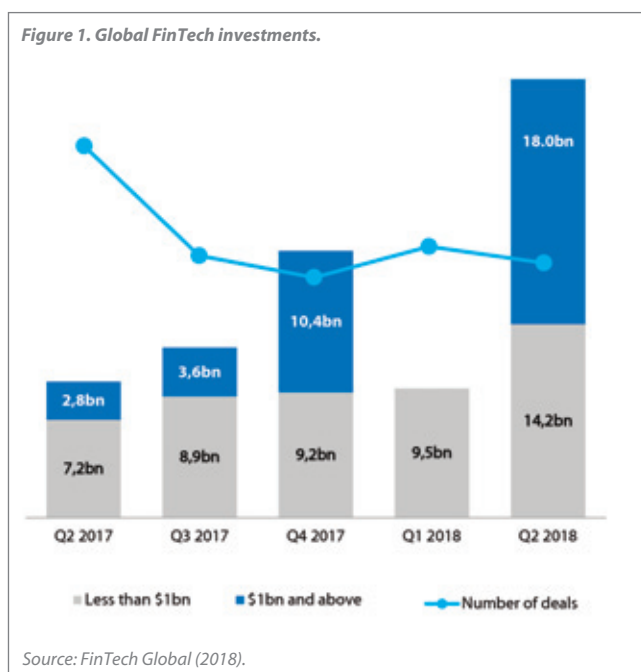
Shift to customer focus culture

Customers' expectations and behaviours are evolving far faster than most companies can address, as they have become much more unpredictable than they used to be, stimulated by increased access to information through channels such as social media and the internet. This has in turn increased customers' expectations of their service providers and limited their tolerance to unfair outcomes. At the same time, increased competition and lower costs of switching providers have amplified customers' bargaining power, making it more difficult for companies to develop and retain a loyal customer base.

As a result, top organizations have shifted their orientation in order to try to meet the changing needs of their clients, placing the customer at the centre of their processes and strategies. Companies need to become flexible, adaptive and receptive to change to succeed in an environment with ever-changing demands.

Increasing relevance of data

The amount and quality of information that organizations are able to gather regarding their customers, products and markets is also changing at a fast pace. The rate of change in information creation is best demonstrated by the amount of data created: 90% of worldwide data was generated in the past 2 years. There are 2.5 quintillion bytes of data created each day at our current pace, and that pace is only accelerating with the growth of the Internet of Things (IoT)[6].

Increased availability of information, coupled with advanced techniques that can be used to analyse it, have led to data becoming a core strategic asset in successful organizations. A successful exploitation of this asset can drastically improve the service provided to the client, reveal ways to make processes more cost-efficient, and enable senior management to make more informed business decisions.

Figure 1. Global FinTech investments.

				18.0bn
2,8bn	3,6bn	10,4bn		
7,2bn	8,9bn	9,2bn	9,5bn	14,2bn
Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018

Less than $1bn $1bn and above   Number of deals
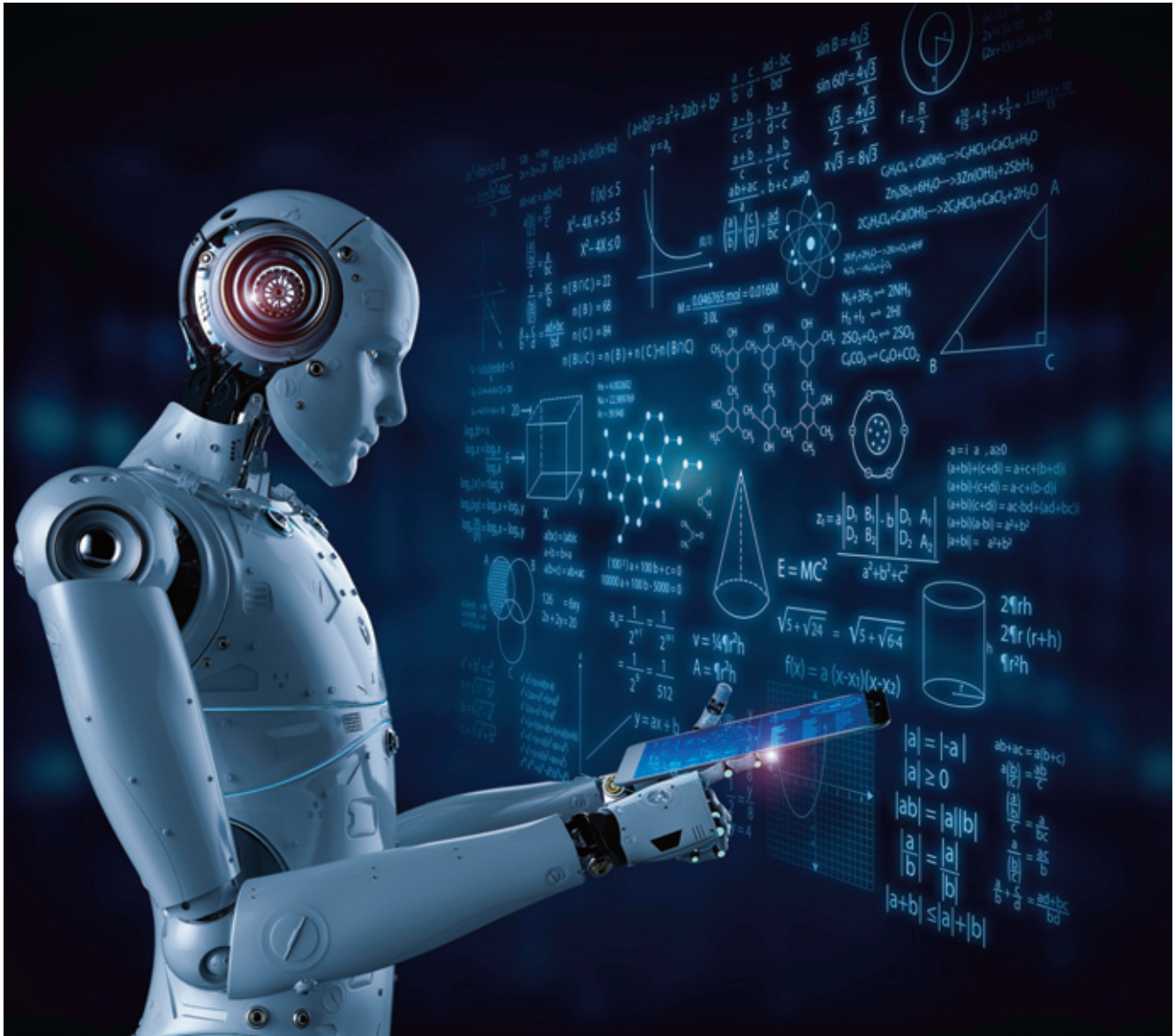
Source: FinTech Global (2018).

[3]This figure refers to the investment in 2017.
[4]StartUp Genome (2018).
[5]FinTech Global (2018).
[6]Marr, B. (2018).

A new way of working

The accelerated pace of change has curtailed organizations' capacity to anticipate the future and make long-term bets. This has resulted in shorter strategic cycles, where companies define their strategy for the next 2-3 years, as opposed to 5-10 years. As such, organizations are required not only to change their strategy, operations and culture, but also to accelerate and transform the way they deliver new products, services, processes and software.

Organizations need to quickly adapt to changes in the market and the behaviour of customers, and owning the latest innovations is not enough. Being capable of quickly designing and building minimally viable products, test them with the clients, refine them in rapid iterations, and finally select the one that meets the customer's and the business's expectations, is a key element to succeed in the current environment. In short, organizations need to become agile. This concern seems to be shared across industries. More than 500 senior executives from

around the world were interviewed in 2018, and 92% of them said they believe organizational agility is critical to business success[7].

Within this context, the present study aims at providing insight into the present and future of Agile organizations. For this purpose, the document is structured in three sections, which correspond to three objectives:

▸ Outlining the journey from traditional delivery techniques to an Agile way of working.

▸ Reviewing the implications and challenges for organizations in adopting Agile methodologies.

▸ Analysing some misconceptions and lessons learned through practical implementation experience, and giving an overview of the upcoming future of Agile methodologies.

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[7]Forbes Insights (2017).

Executive Summary

1. In the last few years, technological advances have disrupted most sectors of activity, providing both opportunities (such as new ways of reaching the final customer) as well as challenges. As a result of this phenomenon, traditional corporations (including largest corporations in regulated industries), have made it a strategic priority to reduce the cost and time of renewing their products and services.

2. The standard paradigm and method of development of new products and services (and, more generally, of development of new business processes, software and technological infrastructure as well as regulatory adaptation), is based on the so-called Waterfall methodology. This method encompasses several sequential phases (including gathering initial business requirements, detailed design, development phase, testing and final deployment), delivered by different teams, with the corresponding hand-overs from one phase to the next.

3. The Waterfall methodology has proved to be adequate for projects where the target solution is not subject to uncertainty, affected by market changes or volatility in the requirements or, more broadly speaking, where the risk of "obsolescence" is low. However, traditional "change delivery" teams in most global corporations have recognised the limitations of this methodology (loss of information at each hand-over, process rigidity or bureaucracy associated with the end-to-end process, etc.). These weaknesses are heightened under changing environments or unspecified requirements. In those cases, when time or flexibility represents a competitive advantage, corporations require a new way of working.

4. A paradigmatic example of the above in large corporations has been their "digital" strategy and the consolidation of business units mandated with the development of a digital value proposition (web, mobile app, digital products and digital servicing). Those business units naturally started to arrange themselves into multipurpose "units of execution", that combined in one team both the business expertise to shape a product or service, the knowledge of the user experience and journey, and the ability to produce the corresponding software and push it into production in a short time window.

5. Those teams have naturally adopted the consolidation of Agile methodologies, which has occurred at different paces, namely one (or combinations and derivations) of: Kanban, Scrum, Extreme Programming, Dynamic Systems Development Method, DevOps, BusDevOps, Feature-driven development, etc. In most of the cases, those teams had to work around the existing governance and processes of their organizations (which was optimised for Waterfall delivery), since neither their format nor their frequency was able to deal with the needs of the Digital business.

6. After some time with this "coexistence", most of the large corporations have recognised that the new ways of working result in quicker delivery of better products: fewer defects, a better client experience, and greater employee engagement and satisfaction. This has triggered a decision to formally recognise and adopt these new ways of working.

7. There have been different adoption models. Market leaders have adopted Agile "at scale", making Agile the dominant delivery methodology. Others have opted for a more organic transformation by progressively adopting Agile methods for "change delivery" teams, whilst also changing their "business as usual" organisations to better serve the transformation programmes. This is usually done by "ring-fencing" specialised profiles that can support change programmes regularly. Finally, other corporations are encouraging the adoption of Agile practices and principles (e.g. empowerment, deployment of the servant-leader role, short term planning, retrospectives, etc.) across the organisation.

8. Whatever the adoption model is, there is recognition that any attempt to adopt these new ways of working to a certain scale requires changes at different levels of the organization. Large corporations have realised that there are critical aspects that have to be reviewed and adapted to the Agile discipline, such as the operating and the people models, the investment process, the performance measurement system, the location footprint or the IT infrastructure, amongst others.

9. In dealing with those implications, there are a number of challenges that most of the large corporations are facing. Inevitably, some of these challenges become evident in those players that have decided to adopt Agile "at scale", but they are somehow present in the other adoption models as well.

10. In adopting Agile methodologies at scale, the actual Operating Model that rules how change is delivered needs to be redesigned. Corporations need to create a flattened structure that supports flexibility, self-empowerment and communication, by designing small groups of people. A widely accepted model is based on different levels (squads, tribes and workstreams). It is also important to gather multifunctional capabilities, which usually means pulling resources from different areas. In addition, there are other challenges:

   a. The arrangement of "multidisciplinary units of execution" in order to minimise time to market. This usually involves some sort of organization around customer, employee and provider journeys, and streams of business value.

   b. An arrangement of the "platform teams" that provide service to different journeys, and how to combine "Development" and "Operations".

   c. The creation of "centres of excellence" that develop functionality once and adapt,deploy and re-use them across the organization, in order to capture synergies coming from innovation in areas such as applied sciences or data analytics. A paradigmatic example is the creation of centres of excellence for Risk and Commercial Modelling.

d. The evolution in the culture of "ownership" of change, moving to one where "the business" effectively "owns" the outcome of the delivery teams, and acts as product owner.

e. The reinforcement of the design disciplines, both from a business, data and architecture perspective.

To make things more challenging, all these changes in the Operating Model need to be thought of in such a way that, throughout a substantial amount of time (or permanently), the new Agile ways of working coexist with traditional Waterfall methods.

11. A related challenge is the people model. Delivery of products and services with an Agile methodology "at scale" means a number of changes in the people model of every organization. These include:

a. The creation of new roles and capabilities that did not exist (or were not formalised).

b. The identification of talent to discharge those roles, including internal and external resources.

c. A new way of identifying and acquiring new talent (under a strong demand and therefore scarce), which usually implies a review of the fundamental people processes: recruitment process, career redefinition, and compensation schemes.

d. The need for a flexible organizational scheme in models where Agile and Waterfall methods co-exist to allow people to move from one method to the other.

e. A trend to ensure in-house development and retention of knowledge, and the creation of networks (both organizational and digital) for knowledge management, for people to share knowledge and best practices.

f. Finally, the cultural transformation associated with the new way of delivering change, including the empowerment of individuals and the open discussion of mistakes, as part of the learning process.

12. One of the fundamental transformations associated with the adoption of these methodologies is the required change in the way investment and the transformation portfolio is managed and decided upon. In order to "agilise" the organization, core business processes for managing and prioritising the investment has to be reviewed and enhanced. With different variants, reviewing the investment process usually involves six main components:

a. An explicit drill down of the corporate strategy and investment plan into tangible objectives and key results.

b. A mechanism to ensure alignment across units of execution, and to promptly identify deviations from the original objectives, potential overlaps across teams and / or gaps. This mechanism acts as the natural counter-balance to the inherent autonomy of the delivery teams, and is usually carried out at different organizational levels, and with a well-defined frequency (usually quarterly).

c. A mechanism to regularly review the allocation of budget to teams, discard some initiatives when they no longer add value, and invest in others. This process can happen quarterly or semi-annually, in contrast to standard yearly budget cycles in the traditional cases.

d. An adaptation of the classification of investment into Capex and Opex to a new delivery model based on sprints, minimum viable products and incremental delivery.

e. A "data driven" approach to measure value added and success.

f. As with the rest of impacts, a cultural change is required to be prepared to accept deviations (sometimes significant) in the original investment plans and backlog in order to accommodate new information flows and lessons learned from minimum viable products.

13. In addition to measuring the level of achievement of objectives and key results, a challenge that most institutions are facing has to do with measuring the progress in terms of adoption of the new ways of working, and quantifying the additional value that those new ways of working provide to the organization. Most of the organizations adopting Agile at scale struggle to come up with a framework and a set of metrics that show how they are able, in the new paradigm, to add more value for the same investment, or the same value for less investment.

14. There is also a need to co-locate teams, with the corresponding potential impact on the organization's real estate portfolio, as well as on the workforce.

15. The last main pillar of the transition to an Agile organization is the transformations required in the IT infrastructure and software engineering capabilities, including:

a. The deployment of toolsets to be used by software developers and platform teams in order to increase collaboration and re-use of code. This includes, amongst others, an orientation towards open source languages, object oriented programming, creation of libraries that gather the existing "latent knowledge" of the organization and a specific focus on code design, streamlining and efficiency (even in areas where coding standards used to be less looked after - e.g. some areas of Risk Modelling).

b. The investment in the automation of the route to production of new software updates development capabilities to ensure real front-to-back autonomy within the teams, which could impact strategic partnerships with third parties.

c. A new culture of recognition and encouragement of technical knowledge and engineering.

d. The deployment of tools that allow collaboration and "single view" of change, and enable the delivery community to interact, to have visibility on the backlog of work, to record lessons learned, etc.

e. A persistent focus on automation and digitisation of processes, and a fundamental review of opportunities where software can outperform humans (e.g. complete automation of KYC process, application of machine learning algorithms to enhance the process of the validation of mathematical models, application of artificial intelligence to discard false positives in AML, etc.).

16. It is worth debunking some myths that have been in almost every industry for the last few years:

    a. Agile at scale is not about "creating and dismantling" teams very quickly, to be able to deliver specific projects. On the contrary, Agile at scale means actually the opposite, i.e. the creation of "stable" teams of almost "fixed capacity" put to work together in a frictionless manner. Agility in this context comes from "changing what goes through the pipeline of those teams", not changing the teams themselves.

    b. Agile at scale does not mean that Waterfall disappears. As mentioned previously, in most of the industry leaders there is recognition that for some regulatory driven, prescriptive and cross-geography, cross-business and/or cross-platform transformations, a Waterfall model can work just as well or better than an Agile framework. However, even if that is the case, those large-scale regulatory programmes end up requiring work on business processes or platforms that are managed by "multidisciplinary units of execution" using Agile. Therefore, those projects require connection and interlock with the different value streams and journey teams.

    c. Agile is not only for Digital companies. The reality is that most of the large corporations in the regulated industries are either exploring or decisively moving towards Agile delivery at different scales.

17. Finally, based on the experience in the industry, some trends for the future can be highlighted:

    a. In those players where Agile is currently concentrated on the teams that deliver change for the organization, there is a tendency for progressive "contagion" to the "business as usual" teams, in terms of adoption of routines and business dynamics around people empowerment, streamlining of processes, adoption of new behaviours, servant leaders, etc.

    b. In those players where Agile at scale is already on the radar of the Board, a deeper technological transformation is expected to capture the full benefit of working under the new model, with investment in decommissioning of platforms, scalable code, standardised libraries, automated road to production, etc.

    c. There is also a tendency for organizations to build in-house capabilities and spread knowledge through training as a way to tackle the high cost and scarce availability of market expertise required for certain roles.

18. Most of the large corporations across "traditional" sectors and across regions are somehow rethinking their methods of delivering better new products and services in a quicker and cheaper way. Some more time and perspective is required to fully confirm the actual economic benefits of these methods. However, the results are already visible in terms of employee engagement, attraction of talent, culture of innovation and scientific learning, better and more innovative products and services, industry recognition and brand awareness. This will soon result in increased investors' trust in the company´s capacity of adaptability and sustainability of the business model, balance sheet and P&L. This will in turn impact their market value and financial resilience of those corporations, giving them a competitive advantage with respect to their current peers and potential future disruptors.

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From Agile methodologies to an Agile organization

"Perfection is finally attained not when there is no longer anything to add but when there is no longer anything to take away"

– Antoine de Saint-Exupéry[8]

Brief history of Agile methodologies

Production strategies have been continuously improved over time to provide companies with more efficient ways of developing solutions in all the departments of the organization. In 1948, engineer Taichi Ohno started developing Kanban in Toyota (Kanban & Toyota Production Systems / Lean - Japan). For decades, companies have been trying to come up with ways of working that allow for faster and better production (see figure 2).

Traditional methodologies monopoly

The process of change delivery in large organizations has until fairly recently been largely dominated by what is known as the Waterfall approach. Waterfall methodologies have been broadly used in large corporations since the 70s, when they arose as a response to the unplanned approaches that prevailed in the early days of software development, offering a sense of organization and engineering practice. The concept of 'waterfall', rooted in production models in the manufacturing industries, was used because of its sequential design, and involved the full completion of one step before moving on to the next and, like water not running uphill, previous steps remained untouched.

Under this methodology most of the software or product developments follow a sequential process of design (gathering of business requirements for the target solution, its initial detailed design, and a translation into a set of technical requirements to be handed over to the software development teams), development (that could last for months, depending on the nature of the transformation, and would be governed by a very tight change control process), hand-over to the business for testing, integration, and final deployment. The Waterfall approach relied heavily on predictive planning, extensive documentation, tight controls and final delivery of a product aligned with the original specifications.

The rationale behind such a methodology is that the time invested in planning, documenting and enhancing the requirements, will translate in less time devoted to delivering and testing the solution. This way of working has also had its reflection on the structure of organizations, resulting in a robust, rigid, siloed and hierarchical configuration.
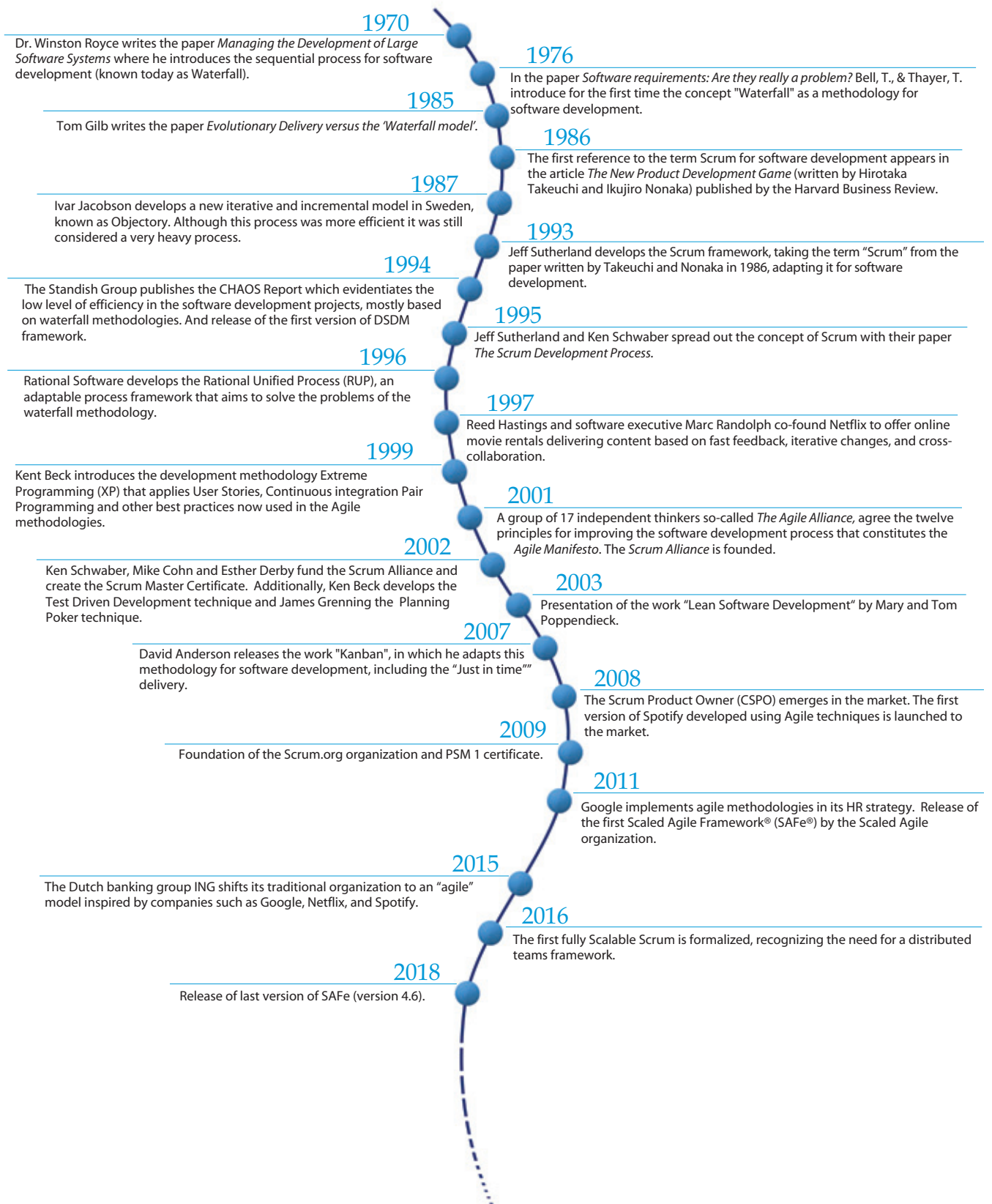
The Waterfall methodology has proved to be adequate for projects where the target solution is not subject to market changes or volatility in the requirements, and where there is little risk that the final solution will become obsolete. Indeed, Waterfall remains the primary delivery model for the majority of companies.

However, there are several limitations in the Waterfall methodology, including the loss of information in the multiple hand-overs between business and IT teams from the specification of requirements to the final software, the rigidity of the process to manage change requests, or the bureaucracy associated to the end-to-end process and the corresponding overhead and waste. In addition, such methodology fails when the environment or the nature (or both) of a new development (a product or a product update) is either "not completely specified" or requires quick development and implementation. In those cases, when time or flexibility represents a competitive advantage, corporations require a new way of working.

This phenomenon is even more evident in the "digital" business units of large corporations, responsible for the development of a digital value proposition (web, mobile app, digital products and digital servicing). Indeed, these business units naturally started to arrange themselves into multipurpose "units of execution", combining in one team both the business expertise to shape a product or service, the knowledge of the user experience and journey, and the ability to produce the corresponding software and deploy it into production in a short period of time.

[8]de Saint-Exupéry, A. (1939). Antoine de Saint-Exupéry was a french aviator and novelist, his adventures as a pilot during World War II supplied him the inspiration for his novels, being the most famous "The Little Prince".

Figure 2. Timeline of main landmarks in the improvement of Agile methodologies in different industries.

1970
Dr. Winston Royce writes the paper *Managing the Development of Large Software Systems* where he introduces the sequential process for software development (known today as Waterfall).

1976
In the paper *Software requirements: Are they really a problem?* Bell, T., & Thayer, T. introduce for the first time the concept "Waterfall" as a methodology for software development.

1985
Tom Gilb writes the paper *Evolutionary Delivery versus the 'Waterfall model'*.

1986
The first reference to the term Scrum for software development appears in the article *The New Product Development Game* (written by Hirotaka Takeuchi and Ikujiro Nonaka) published by the Harvard Business Review.

1987
Ivar Jacobson develops a new iterative and incremental model in Sweden, known as Objectory. Although this process was more efficient it was still considered a very heavy process.

1993
Jeff Sutherland develops the Scrum framework, taking the term "Scrum" from the paper written by Takeuchi and Nonaka in 1986, adapting it for software development.

1994
The Standish Group publishes the CHAOS Report which evidentiates the low level of efficiency in the software development projects, mostly based on waterfall methodologies. And release of the first version of DSDM framework.

1995
Jeff Sutherland and Ken Schwaber spread out the concept of Scrum with their paper *The Scrum Development Process.*

1996
Rational Software develops the Rational Unified Process (RUP), an adaptable process framework that aims to solve the problems of the waterfall methodology.

1997
Reed Hastings and software executive Marc Randolph co-found Netflix to offer online movie rentals delivering content based on fast feedback, iterative changes, and cross-collaboration.

1999
Kent Beck introduces the development methodology Extreme Programming (XP) that applies User Stories, Continuous integration Pair Programming and other best practices now used in the Agile methodologies.

2001
A group of 17 independent thinkers so-called *The Agile Alliance,* agree the twelve principles for improving the software development process that constitutes the *Agile Manifesto*. The *Scrum Alliance* is founded.

2002
Ken Schwaber, Mike Cohn and Esther Derby fund the Scrum Alliance and create the Scrum Master Certificate. Additionally, Ken Beck develops the Test Driven Development technique and James Grenning the Planning Poker technique.

2003
Presentation of the work "Lean Software Development" by Mary and Tom Poppendieck.

2007
David Anderson releases the work "Kanban", in which he adapts this methodology for software development, including the "Just in time"" delivery.

2008
The Scrum Product Owner (CSPO) emerges in the market. The first version of Spotify developed using Agile techniques is launched to the market.

2009
Foundation of the Scrum.org organization and PSM 1 certificate.

2011
Google implements agile methodologies in its HR strategy. Release of the first Scaled Agile Framework® (SAFe®) by the Scaled Agile organization.

2015
The Dutch banking group ING shifts its traditional organization to an "agile" model inspired by companies such as Google, Netflix, and Spotify.

2016
The first fully Scalable Scrum is formalized, recognizing the need for a distributed teams framework.

2018
Release of last version of SAFe (version 4.6).

Source: Management Solutions.

Therefore, in response to the faster pace of change, numerous large corporations have embraced or are currently adopting new working methodologies as a way of being successful in today's volatile environment.

The Agile emergence

In the early 1990s, some publications made evident the deficiencies of the Waterfall methodology. Jeff Sutherland began collaborating with Ken Schwaber and other software experts from the industry to create more efficient systems. One of the articles that inspired them was a 1986 Harvard Business Review called "The New Product Development Game," written by Hirotaka Takeuchi and Ikujiro Nonaka. This article mentioned for the first time the term "Scrum", borrowed from rugby to underline the importance of teams in complex product development. Their research showed that outstanding performance is achieved when teams are small and self-organizing units of people, and when such teams are given specific objectives, not executable tasks (figure 3). Teams can only achieve their strongest potential when there is room for change in their strategies towards the shared objectives.

While Sutherland and Schwaber were spreading the concept of the Scrum, others also tried to build alternatives to Waterfall, such as Extreme Programming, Adaptive Software Development, or the Rational Unified Process. In 2001, Sutherland, Schwaber and 15 other program managers, engineers and independent software developers met in Utah, convened by Kent Beck, to find the formula for successful software development. Although they did not agree on everything, they established four values and twelve operating

principles that constitute the Manifesto for Agile Software Development (usually called "Agile Manifesto"). Since then, the development frameworks aligned with these values and principles are known as Agile techniques.

The Agile consolidation

While the Agile methodologies were becoming more known and widespread, some companies such as Netflix in 1997, Spotify in 2008 or Google in 2011 started adapting their development methodologies emphasizing the fast feedback, iterative changes, and cross-collaboration across the teams. Google also introduced "failure as part of the process" and the "learn as you go" strategy in its fast delivery culture.

These companies' capacity for innovation, growth and success inspired traditional organizations seeking to grow and innovate in the fast-paced business environment of the time, where rapid-fire consumer demands and continuous cycles of product iteration were on the rise. Some examples are the National Bank of Canada in 2012, and the Dutch banking group ING in 2015. Some other organizations found difficulties adopting in their large scale structures the same methodologies used in smaller and less complex organizations and had to find alternative solutions to streamline their processes. LEGO and Cisco, after trying to adopt the "traditional" and more widespread Agile methodologies, opted for incorporating the Scaled Agile Framework (SAFe) in 2015, which enabled them to increase

Figure 3. Traditional versus Agile approach.

Source: Management Solutions.
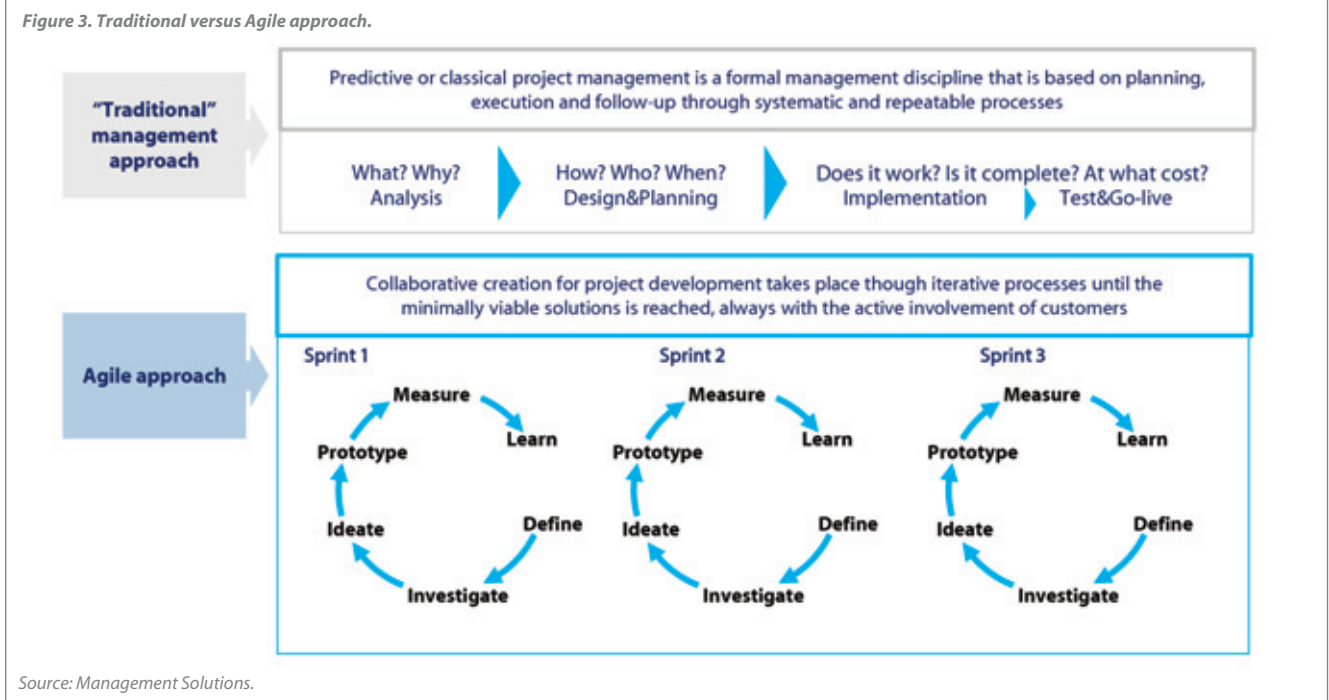
cooperation between their teams, lower down the number of defects in their final products, and achieve timely delivery.

IT development units and digital business units naturally adopted different variants of "Agile" methodologies, namely one (or combinations and derivations) of: Kanban, Scrum, Extreme Programming, Dynamic Systems Development Method, DevOps, BusDevOps, Feature-driven development, etc. In most of the cases, those teams had to work around their organizations' existing governance and processes (which were optimised for Waterfall delivery), since neither their format nor their frequency was able to deal with the needs of the Digital business.

Given the "exploratory" nature of the exercise, the natural learning curve of digital teams and the dependency on external support, the cost was not necessarily lower than their

equivalent Waterfall delivery. However, better employee engagement and satisfaction is a recognised collateral benefit.

Up until now, these Agile techniques have been increasingly widespread across the different geographies and industries (high tech, telecom, financial services, media and entertainment) allowing the organizations to enhance their response to customer needs, to achieve a quicker delivery of better products (less defects, better client experience), to reduce the complexity of their existing processes and to outperform their peers in the market place.
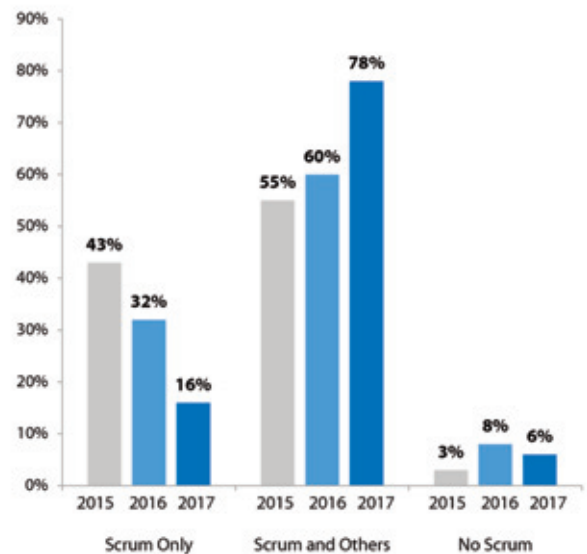
Finally, another strong signal of the Agile consolidation is the emergence and establishment of official and world-recognised organizations, agencies and standards bodies that provide best practices, and support the widespread adoption and effective practice of the different Agile methodologies.
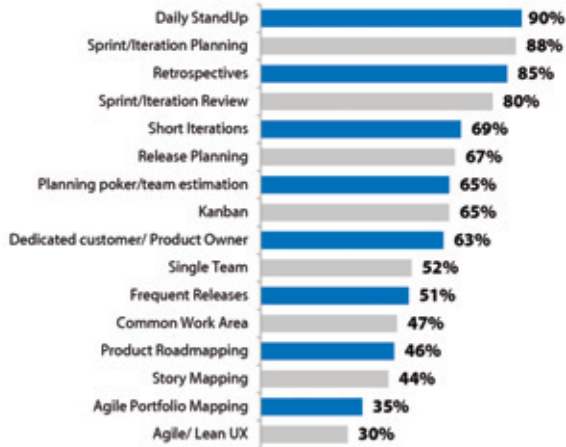

Figure 4. Agile methodologies used.

1% Spotify Model
1% Lean StartUp
1% Extreme Programming
3% Iterative Deveopment
5% Kanban
5% Others
6% Scrum/XP hybrid
8% ScrumBan
14% Hybrid
56% Scrum
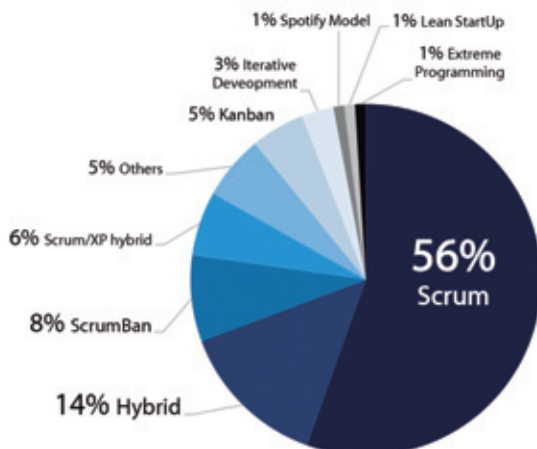
Source: VersionOne & CollabNet (2018).

Figure 5. Agile approaches.

Scrum Only — 2015: 43%, 2016: 32%, 2017: 16%
Scrum and Others — 2015: 55%, 2016: 60%, 2017: 78%
No Scrum — 2015: 3%, 2016: 8%, 2017: 6%

Source: Scrum Alliance. (2018).

Figure 6. Most used Agile techniques.

Technique	Percentage
Daily StandUp	90%
Sprint/Iteration Planning	88%
Retrospectives	85%
Sprint/Iteration Review	80%
Short Iterations	69%
Release Planning	67%
Planning poker/team estimation	65%
Kanban	65%
Dedicated customer/ Product Owner	63%
Single Team	52%
Frequent Releases	51%
Common Work Area	47%
Product Roadmapping	46%
Story Mapping	44%
Agile Portfolio Mapping	35%
Agile/ Lean UX	30%

Source: VersionOne & CollabNet (2018).

Figure 7. Scaling an Agile transformation.

87% Have a daily Scrum meeting

86% Hold Sprint Planning meeting prior to Sprint

81% Hold a retrospective after each Sprint
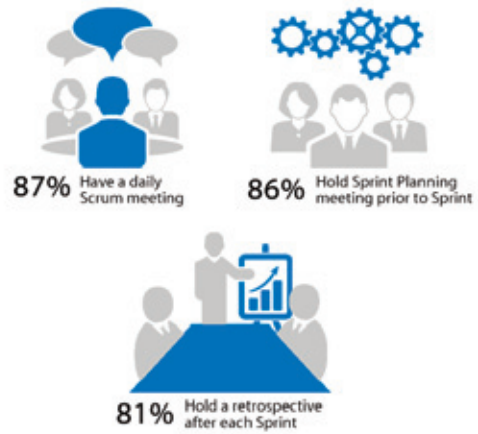
Source: Scrum Alliance (2018).

Landscape of Agile ways of working

Usage of Agile methodologies

After the Agile Manifesto, numerous companies have changed or are trying to change their processes into a more dynamic way of working. According to the 12th Annual State of Agile Report[9] and the State of Scrum Report[10] (Scrum Alliance Organization), within the companies that decided to go Agile, Scrum is the most widespread methodology when adopting an Agile way of working (figure 4). But there are many other possibilities in the Agile landscape that could better fit an organization's needs depending on its characteristics, objectives and strategy (figure 5).

Indeed, most of the organizations do not use a specific methodology but they follow hybrid practices to organize their

development processes. The techniques used can theoretically belong to one specific methodology, but due to their added value they are being used indiscriminately. The predominant techniques are the daily stand-ups, the sprint/iteration planning, retrospectives, sprint/iteration review and short iterations (figures 6 and 7).
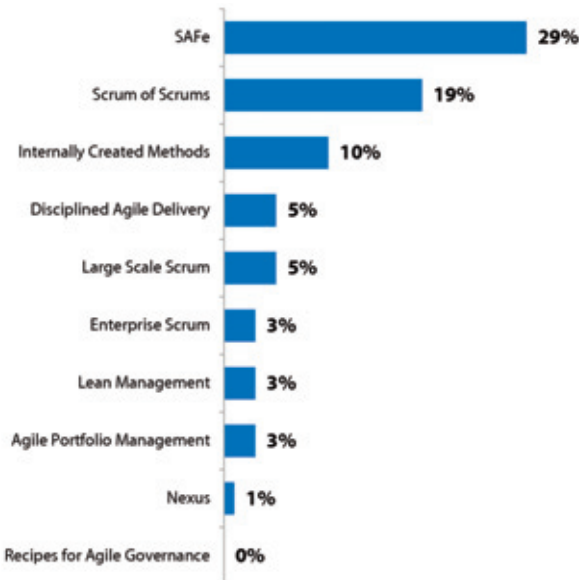
Agile scaling methodologies

Agile scaling refers to the joint work of multiple teams whose task is to deliver a solution developed within the Agile environment. These methodologies are used to develop complex projects, requiring the work between teams to be organized and sequenced, and the dependencies to be resolved to achieve results.

There are various methodologies that can be used (figure 8). Most scaling methodologies are based on Scrum principles, so Scrum knowledge and the company's background regarding project management can influence the decision of which scaling methodology to apply.

Some of the most widespread scaling methodologies are SAFe and Scrum of Scrums. NEXUS is a widely studied methodology (created by Ken Schwaber), although maybe not widely implemented across industries.

These methodologies require a change in the mind-set of the people in the organization and eventually lead to a deep cultural transformation.

Figure 8. Survey showing the percentage of users of some Scaling Methods and Approaches.

Method	Percentage
SAFe	29%
Scrum of Scrums	19%
Internally Created Methods	10%
Disciplined Agile Delivery	5%
Large Scale Scrum	5%
Enterprise Scrum	3%
Lean Management	3%
Agile Portfolio Management	3%
Nexus	1%
Recipes for Agile Governance	0%

Source: VersionOne & CollabNet (2018).

[9]VersionOne & CollabNet (2018).
[10]Scrum Alliance (2018).

An introduction to the main methodologies

The following methodologies have emerged based on the principles of the Agile Manifesto. The methods described are not exclusive, and in most cases complement one another in different parts of the development lifecycle when they are embedded in the organization's development process (table 1).

Scrum

According to the definition of Scrum in The Scrum Guide (by Ken Schwaber and Jeff Sutherland), this methodology can be described as a framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.

The Scrum methodology defines specific roles: Product Owner, Development Team, and Scrum Master. The Scrum workflow is structured around five main events:

- **The Sprint:** the heart of Scrum is a Sprint, a time-box of 4 weeks or less during which a "Done", useable, and potentially releasable Product Increment is created. Sprints have consistent durations throughout a development effort.

- **Sprint planning:** the work to be performed in the Sprint is planned at the Sprint Planning. This plan is created by the collaborative work of the entire Scrum Team.
  Sprint Planning is time-boxed to a maximum of eight hours for a one-month Sprint.
  After the sprint planning, the team needs to be able to understand clearly the scope and workload of the next sprint (Sprint Backlog), and to explain how the Sprint Goal is going to be accomplished and how the anticipated Increment is going to be created.

- **Daily Scrum:** is a daily 15-minute time-boxed event for the Development Team. At it, the Development Team plans work for the next 24 hours. This optimizes team collaboration and performance by inspecting the work since the last Daily Scrum and forecasting upcoming Sprint work.

- **Sprint Review:** is held at the end of the Sprint to inspect the Increment and adapt the Product Backlog if needed. This event is at most a four-hour meeting for one-month Sprints.

- **Sprint retrospective:** is an opportunity for the Scrum Team to inspect itself and create a plan for improvements to be enacted during the next Sprint. This is at most a 3 hour meeting for one-month Sprints.

Kanban

Kanban optimizes customer value by improving the overall efficiency, effectiveness, and predictability of a process following the principles of visualising the workflow, limiting work in progress, managing and enhancing the flow, making policies explicit, and continuous improvement.

- **Visualisation of the workflow:** the team uses the Kanban board to reflect the flow of tasks across the value stream. The work is divided into phases, written on a card and displayed on the wall. Then, the different columns are named to illustrate where each item is in the workflow. By creating a visual model, the team can observe the flow of work, including any blockers and queues, and increase communication and collaboration.

- **Limiting work in progress:** the Kanban methodology assigns explicit limits to how many items may be in progress at each workflow state.

- **Managing and enhancing the flow:** the aim is to achieve a fast and smooth flow by managing and monitoring the speed of the flow using metrics, KPIs and analytics to ensure the transparency of the progress and its active management.

- **Making policies explicit:** to ensure process efficiency, it is essential that team members understand the status of the flow and how they need to do their jobs in order to ensure progress. To that end, the process needs to be clearly defined, published and socialized. This can be done through policies, process rules or guidelines.

- **Continuous improvement:** the teams share proposals for improving processes in order to achieve maximum flow efficiency.

Extreme Programming (XP)

Kent Beck[11] described Extreme Programming (XP) as a software development discipline for medium-size projects and small teams that aims to emphasise productivity, flexibility, informality, teamwork and limited use of technology outside programming. This method emphasizes "business results first" by improving quality and responsiveness to evolving customer requirements.

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[11] American software engineer, pioneer of software design patterns, creator of extreme programming and one of the 17 original signatories of Agile Manifesto.

Table 1. Main differences between Scrum and Kanban.

	SCRUM	KANBAN
Cadence	- Regular fixed lenght sprint. - Both frameworks are focused in a sense of cadence, in a scrum is a cadence of increment (how to regularly deliver increments of working software).	- Continuous flow, no fixed time-boxes - Deliver on demand. - In Kanban is a cadence of flow. How to create a delivery of minimal marketable features.
Release Methodology	- At the end of each sprint if approved by the product owner.	- Coninuous delivery or at the team's discretion.
Roles	- Product owner, scrum master, development team. - The scrum master owns the process and ensures the team is a successful at meeting the rime-box commitments.	- Service Delivery Manager (SDM), Service Requiest Manager (SRM) and sometimes an agile coach.
Key Metrics	- Velocity (amount of work that tents to get done over increments and from time-box and time-box).	- Work-in-progress. - Cycle time.
Ceremonies	- Daily Scrum, Sprint Review & Sprint Retrospective.	- Daily Stand-up, Demo & Restrospective.
Work and change philosophy	- Teams should strive to not make changes to the sprint forecast during the sprint. Doing so compromises learnings around estimation. - Tasking and estimating to determine how much work can be done in a specific timebox in order to continue delivering incrementally.	- Change can happen at any time. - Does not assign task and time estimates, the team pulls the work in and stanrts working on it (only priorized work queue).

Source: Management Solutions.

He presented some ideas that go from broad and abstract values and principles (**communication**, simplicity, testing…) to more concrete practices that can be classified into four groups: Fine-scale feedback, Continuous process, Shared understanding and Programmer welfare. He also suggested that for Extreme Programing to be effective, all these practices need to be working together.

Nowadays all these practices can be seen implemented in other Agile methodologies such as Scrum and Kanban, followed by the developers in the teams.

Dynamic Systems Development Method (DSDM)

The Dynamic Systems Development Method (DSDM) is an Agile methodology based on nine "mandatory" principles that include the active participation of users and a cooperative approach to try to avoid some common IT project shortcomings such as going over budget, missing deadlines, and lack of user participation. This method prioritizes the chronogram and the quality of the functionality by agreeing terms and costs and then modifying the scope to achieve the proposed objectives.

There are three groups of roles in the DSDM methodology: the IT roles (developer and tester), the user roles (ambassador user and advisor users) and the managerial roles (team leader, project manager and technical coordinator). The project manager represents the link between the IT community and the users, and the coordinator is responsible for the more technical aspects such as the quality, or the architecture. The DSDM methodology also includes roles such as the "visionary user" and the "executive sponsor", that ensure the feasibility of the project (via motivation and providing the needed resources).

The DSDM project is structured in seven phases and each phase owns several key tasks: Pre-project, Feasibility study, Business study, Functional Model Iteration (FMI), Design and Build Iteration (DBI), Implementation, Post-project.

Agile scaling methodologies

SAFe[12]

SAFe is the acronym for Scaled Agile Framework, a management framework originally designed to develop complex projects in organizations. This methodology allows for several configurations depending on the size of the organization or the complexity of the projects.

SAFe can also be configured according to the needs of organizations, and has four working configurations: Essential SAFe, Large Solution SAFe, Portfolio SAFe and Full SAFe. This methodology is continuously being updated (as of the date of this publication, the latest version is 4.6, published at the end of 2018).

Scrum of Scrums

The essence of the Scrum of Scrums methodology is to divide large work teams into sub-teams, trying to respect the ideal Scrum team size. The multiple Scrum teams need to work in parallel in a synchronized way, facilitating the flow of information and communication. The creation of sub-teams will usually involve the Scrum Master, Product Owner and Development teams (figure 9).

The Scrum of Scrums meeting is a process that ensures team synchronization. The meeting is coordinated by a Chief Scrum Master and by a representative of each participating team. The main objectives of the Scrum of Scrums meeting are to:

- Update on work progress
- Discuss project challenges
- Coordinate activities

A typical Scrum team is five to eleven people. Rather than scaling by having a large team, Scrum projects scale through having teams of teams. Scrum framework has been used on projects with hundreds of people involved, which makes it necessary to have smaller units of execution.

NEXUS[13]

Nexus is a framework to develop and maintain initiatives for delivering products and software to scale. It consists of roles (a Product Owner, a Scrum Master and members of the Nexus integration team), events ("appended to", "placed around", or "in replacement of regular Scrum events to augment them"), artefacts (Product Backlog, Nexus Sprint Backlog, and Integrated Increment), and rules that bind and weave together the work of approximately 3 to 9 Scrum Teams working on a single Product Backlog to build an Integrated Increment that meets a goal. Nexus is consistent with Scrum and its elements will be familiar to those who have used Scrum. The difference is that more attention is paid to dependencies and interrelation between Scrum Teams, delivering at least one "Done" Integrated Increment every Sprint.

[12]SAFe (2018).
[13]Schwaber & Scrum.org (2018).

Figure 9. Structure of a Scrum of Scrums organization.
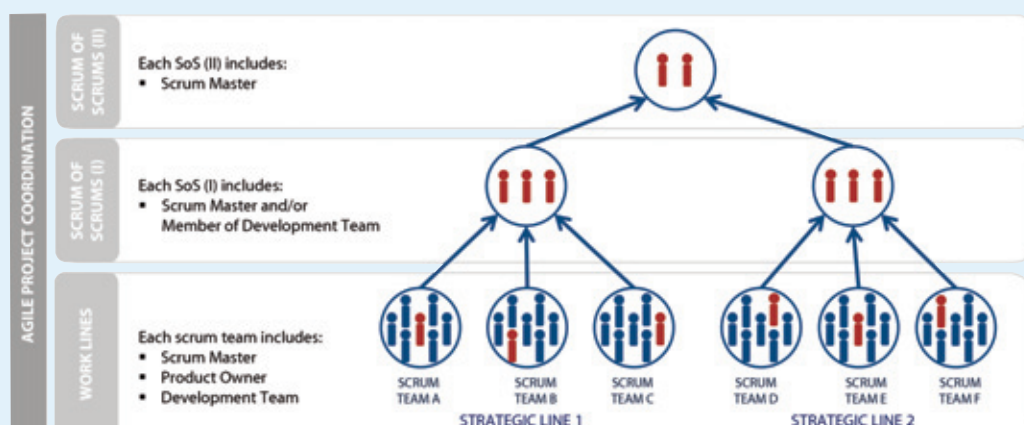
Source: Management Solutions.

Journey to an Agile organization

Critical aspects for Agile adoption

Agile is becoming a real trend among many corporations. Nowadays more and more large companies are adopting Agile practices, leveraging on the experience from the early adopters. However, every organization is different: the culture, the business objectives, or the background. Therefore, before replicating successful strategies from other companies, an organization needs to identify the right way to accommodate the Agile methodologies and principles to its specific context, and create its own meaning of the Agile Organization.

Experience has shown that there is no right transformation journey, and it needs to be designed from inside, by the organization and for the organization, translating all success cases and best practices into a language that the firm will actually understand.

What is widely accepted today is that adopting the Agile principles it is not just a matter of evolving the way the people in the organization work or think. To become an Agile organization, companies need to go beyond. Organizational changes that will impact key pillars of how the companies do business as well as their own culture are required. Large corporations have realised that changing their working methods is just the tip of the Agile transformation iceberg (figure 10). Below sea level there are critical aspects that have to be reviewed and adapted to the Agile discipline, such as the operating model, the people model, the investment process, the performance measurement systems, the location footprint or the IT infrastructure.

In order to design the transformation journey, an organization needs first to have a clear view of what is the aspirational target to be achieved. In addition, the aforementioned critical aspects need to be considered for the transition to Agile. Finally, it is important to create a path that each of these aspects will follow to complete the journey and establish the interactions between them. There could be multiple paths (see example in figure 11), and the final path has to fit the needs of the organization.

Different corporations have used different adoption models to achieve the transformation:

a. Those currently recognised as "market leaders" have embraced a synchronised adoption of Agile "at scale", i.e. making Agile the dominant delivery methodology for any type of change (with some exceptions where the Waterfall methodology is still used).

b. Others have chosen a less "orchestrated" and more organic transformation, showing some of the following paths:

    -   Some of their "change delivery" teams progressively adopt Agile methods by mirroring the existing Agile teams, with no long term aim of fully adopting the methodology.
    -   Teams with both a "business as usual" pipeline of work and a heavy support to change programs adopt more "fluid" organizations where there is formal recognition of
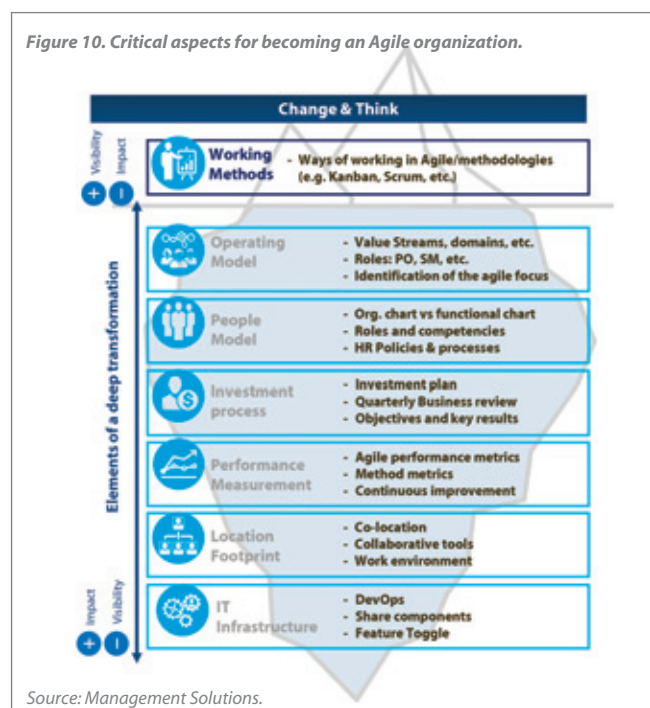
Figure 10. Critical aspects for becoming an Agile organization.

Source: Management Solutions.

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[14]Tolstoy, L. (1869). Leo Tolstoy was a Russian author of acclaimed novels such as "War and Peace" or "Anna Karenina" for which he is considered one of the world's top writers.

Figure 11. Ilustrative example of Agile transformation map.

Source: Management Solutions.

the need to support those changes, with people "ring-fenced" to deliver that support.

- Some of the Agile principles (empowerment of individuals, creation of multidisciplinary teams, deployment of the servant-leader role, short term planning cycles and retrospectives etc.) are also adopted in their "business as usual" teams that run the corporation.

This adoption could also be done depending on the organizational impact on the corporation (figure 12).

Finally, an important element of successful implementation is to define the initial steps, which includes identifying the key areas (figure 13).

Challenges in Agile adoption

In every critical aspect for the adoption of Agile methodologies there are a number of challenges that most of the large corporations are facing. Inevitably some of those challenges become evident in those players that have decided to adopt Agile "at scale", but they are somehow present in any other adoption model as well.

Changes in the operating model

To be successful in this transformation journey and to better accommodate the Agile methods in the organization, it is recommendable for companies to foster flexibility and autonomy in their structures. This will allow them to efficiently and rapidly respond to changes in customer requirements.

Figure 12. Adoption of Agile methodologies, depending on organizational impact. Management Solutions.
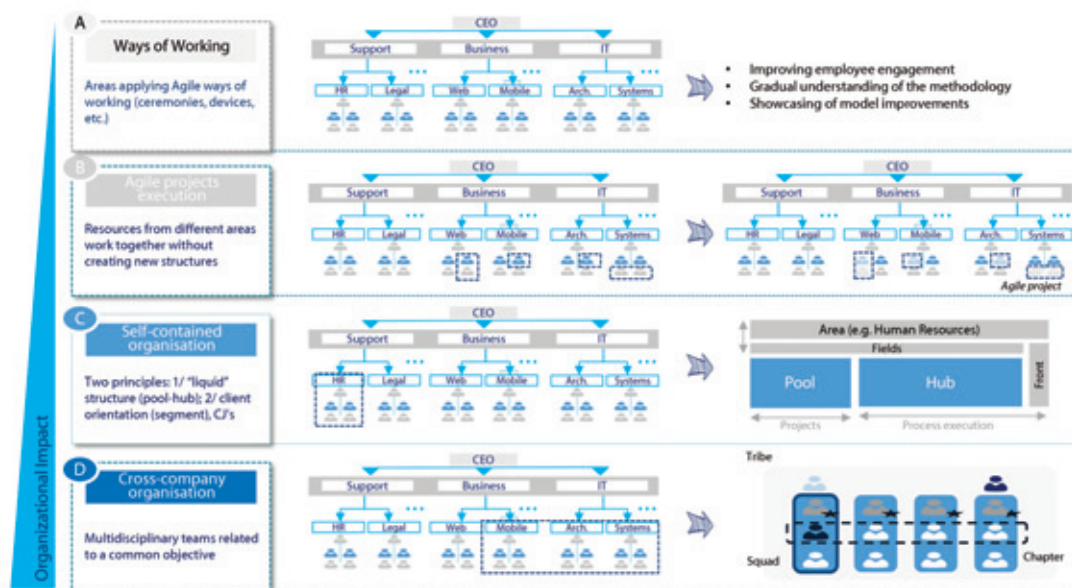
Source: Management Solutions.

Figure 13. Where to start in the Agile Journey.

Where to start?

**Pilot –
Project in Agile**

Development of a project that combines agile elements:

✓ **Organisational:** multidisciplinary team with agile roles
✓ **Methodological:** devices, ceremonies, MVP's, OKR's, etc.

First pilots of methodological testing

**Evolution of
area/function**

Exploration of new working methods for specific areas:

✓ Areas with "self-contained" vision (i.e. Support functions – HR, Internal audit, etc.)
✓ Areas with cross-company vision (i.e. multidisciplinary tribe designs)

*Analysis by area
("self-contained" or cross)*

**Construction of agile
global framework**

Definition and implementation of the Agile Model elements:

✓ Working methods
✓ Operating model
✓ People model
✓ Investment process
✓ Performance measurement
✓ Location footprint, IT infrastructure

Global level

Source: Management Solutions.

This usually means adopting organizational structures that, at a certain hierarchical level, become flat, with multidisciplinary teams able to develop new products, services and software in an autonomous way, and with an end to end view of a given journey.

Some of the challenges in adopting this operating model include the below:

a. The arrangement of "multidisciplinary units of execution" so as to maximise time to market. Organizations that are leading the adoption of Agile at scale tend to arrange their multidisciplinary streams around customer journeys (e.g. an Account Opening journey, Customer onboarding journey, etc. for a financial institution). In the majority of cases, complex organizations bundle those teams up in some sort of logical grouping that makes business sense ("value streams" in those organizations following a SAFe methodology, a concept also represented in other methods such as Scrum of Scrums, or Nexus). For a Financial Institution, an example would be "product" value streams in Retail banking and "customer" segment value streams in Commercial banking.

    In companies where there is a successful organization when adopting Agile (Spotify, Netflix, Google, and ING), it appears that a widely accepted model is based on different levels: squads, tribes and work streams (figure 14).

    The creation of these multidisciplinary teams poses a challenge itself in a classical organizational set up, as it usually means pulling resources from business areas (to act as product owners and subject matter experts), change areas (to act as scrum masters, Agile coaches, etc.), and technology areas (to contribute as software engineers or platform experts that will steer the way to production). This usually creates organizational friction.

    Some industry leaders in Agile adoption at scale have overcome these tensions by undertaking deep

organizational transformation, where for example those profiles are merged into a single C-level role that consolidates both business and IT delivery capabilities. This is usually possible only with a strong and declared commitment from the Board of Directors of the company.

b. The organization of platform teams that provide service to more than one customer journey. The original examples of "Agile units of delivery" were usually quite concentrated in the digital ecosystem and IT infrastructure (web, mobiles app, etc.). When Agile is adopted across the organization, it is common to have platforms (e.g. Risk or Finance platforms, web interface, mobile app, etc.) that need to absorb changes coming from more than one "unit of execution". This means that, in order to keep the "autonomy" of the execution units, and avoid bottlenecks on the road to production, a specific

Figure 14. Organizational model.
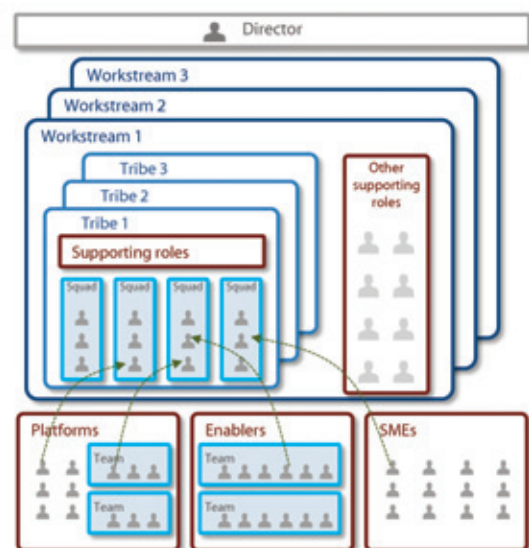
Source: Management Solutions.

operating model needs to be developed. Industry leaders have adopted different models that range from single "platform" teams with a "single backlog" of changes coming from different teams, to platforms with specialists in each delivery team that develop code, and a thinner code merging and road to production layer.

c. The relationship between the teams maintaining the platforms, dealing with incidents, responsible for recovery plans etc., and the teams "changing" the platforms. In other words, whether to adopt a full "DevOps" model where the teams that develop code and those that run the platform are integrated. In some geographies, regulations requiring individual accountability regarding the running of the platforms can interfere with a pure DevOps model.

d. The risk of creating multiple teams that redevelop the same functionality for their own units of execution in innovation areas such as applied sciences (e.g. mathematical modelling, robotics, biometrics, block chain, etc.) or data analytics. Market leaders usually tackle that problem by centralising some of those capabilities into "centres of excellence" that develop the functionalities once, and adapt and deploy them across the organization. Some of those centres of excellence include centralisation of data analytics, risk and commercial modelling, applied sciences, or interconnectivity tools (APIs and Microservices).

e. The evolution of the culture of "ownership" of change towards one where "the business" (understood as the area that ideates the change and usually owns the budget- typically business origination, but also Risk, Finance, etc.) effectively "owns" the outcome of the delivery teams. Within the industry leaders, the business areas effectively act as "product owners", spend quality time and resources in guiding the delivery teams and providing business insight, and eventually act as effective owners of the result.

f. The reinforcement of the design discipline. In most Agile-at-scale adoption leaders, there is an increasing importance of the disciplines of business, data and IT design. Design Authorities play a dominant role in the change lifecycle, and are the gate keepers of a set of design principles that govern the change activity of the organization.

g. The definition of a model where Agile and Waterfall methods co-exist. Most industries recognise that Waterfall methodology can still add value and reliability in environments where uncertainty and business competitive pressure is low (e.g. in certain regulatory adaptations). Therefore, in the vast majority of the cases, the target model ends up being a hybrid one.

Changes in the people model

Creating a new culture of work requires changing people's mindset and behaviours. A new model of roles, capabilities and compensation has to be designed in a way that facilitates the transition not only for the organization but also for the employees, while ensuring a consistent co-existence of both Waterfall and Agile structures. Since new talent will be needed, recruiting processes have to be reviewed and the career path offered has to become appealing. An overall review of HR policies and procedures has to be considered, including:

Roles and capabilities

In order to become more flexible and to easily accommodate customers' needs and expectations, the organization needs to define roles and capabilities that will enable Agile value creation. There are some key roles:

▸ **Product Owner:** responsible for coordinating squad activities, the product owner manages the backlog and priority settings.

▸ **Scrum Master:** ensures that the way of working is understood and ingrained within the Team and in interactions outside the Team.

▸ **Agile Coach**: responsible for coaching individuals and squads to create high-performing teams (this role is important at least at the beginning of the implementation, although the Scrum Master typically assumes this role in mature implementations).

Talent

A new catalogue of hard and soft skills needs to be defined, and new talent (in some geographies in strong demand and therefore, scarce) needs to be identified and acquired to discharge the required roles. This usually means identifying which part of the current workforce can take on those responsibilities (with or without prior training), and which part of the workforce needs to be substituted by new talent from the market.

Recruitment, career and compensation

A new way of identifying and acquiring new talent (as has been stated before, in some geographies in strong demand and therefore, scarce) has to be implemented, which usually implies a review of the fundamental people processes:

Different roles in the operating model

I. Squad

Squads are high-performing execution teams that have end-to-end responsibility for ensuring that the delivery process is autonomous, self-steering, flexible and multifunctional.

A squad typically consists of the development team, the product owner and the Scrum master.

II. Tribes

A tribe is a collection of squads within a shared journey or product, and can include between 100 and 150 people depending on the number of squads.

Tribes need to act as a mechanism of alignment to ensure that there is a single view of the Journey or capability they look after. They also act as knowledge hubs, ensuring that the right methodology and best practices are shared through the entire tribe and the teams understand how to efficiently adopt them in order to deliver value.

Additionally, the tribe's workforce is organized and distributed, allocating colleagues to the roles required by the squads, providing them with the most suitable capabilities available at each time.

III. Workstreams

A Workstream is a group of tribes that own the activities across several E2E journeys associated to a given business concept (e.g. a Product, a Customer, etc.). The workstream takes a helicopter view of requirements across tribes and coordinates the resources available to procure optimised service for the tribes and squads.

Workstreams are not common to all the companies, but they are recommended when implementing the model in large corporations since they equip the structure with a greater level of support and guidance, balance objectives and opportunities, while setting priorities with a global perspective of the organization.

IV. Chapters

Nurturing the shared knowledge philosophy of Agile, chapters are groups of tribe members with a shared area of expertise or knowledge background, that share knowledge and lessons learnt from each other in order to identify best practices and decide how things should be done in the tribes, avoiding silos within the organization.

A chapter is not a hierarchical structure, the chapter members can belong to different tribes and workstreams and they can join or leave at any time.

V. Enablers

Additionally to the typical Agile structure, organizations usually need centres of excellence that help members of the organization at any level (workstream, tribe and squad) in their development activity, providing support related to new functionalities that will be required by the business.

VI. SMEs

Subject Matter Experts (SME's) are people with specific knowledge or skills that provide external advise to a tribe or squads on a concrete matter (legal, risk, platforms, cyber, operations…). They are involved in the E2E process, being aware of how the team evolves regarding a specific domain, and provide support when required, but they are not permanent members of a squad.

VII. Platform teams

Platform teams ensure that operational and support activity is aligned with the tribe's progress, supporting them when required and ensuring the squads' developments are aligned with the platform cycles. Control of the platforms and IT infrastructure remain with the platform teams.

▶ **Recruitment:** finding the best talented people implies changes in the recruitment process (e.g. employees more involved, peer-to-peer hiring approach).

▶ **Career planning:** developing a motivational career path that allows people to advance in the organization but also to acquire new capabilities and a more cross-functional profile, where technical ability can provide as much career progression in the organization as functional and people management abilities.

▶ **Compensation:** new model based on OKRs (objectives and key results), with a greater focus on collaborative structures, and a higher weight on non-financial compensation and recognition.

Organizational flexibility

Models where Agile and Waterfall methods co-exist tend to require fine tuning of the people model and the "permeability" of the membrane that separates both methods, since it is common for people to move from one to the other, and performance measurement, incentives and career paths need to be synchronised accordingly.

Knowledge management

The creation of empowered multidisciplinary teams usually means that a "chapter" of experts in a given domain (e.g. pricing, data science, modelling, etc.) are now scattered across multiple teams with little or no contact. In order to counterbalance a potential sense of "orphanage" in the workforce, and to ensure that the "collective knowledge" of specific disciplines is maintained, Agile transformation leaders are formalising the

creation of knowledge (disciplines, chapters, etc.), which are both organizational structures and digital spaces where people of the same background and areas of expertise come together to share knowledge and best practices.

Cultural transformation

The transformation associated with the new way of delivering change goes beyond the standard adoption of a new leadership style (servant-leader) to include:

▶ The active empowerment of individuals so they can make decisions.

▶ Open discussion (and embracing) of mistakes as part of the learning process (scientific method), recognition of technical ability, etc.

Changes in the investment process

On the way to becoming an Agile organization, many companies struggle to find solutions that can increase their flexibility to continuously adapt their strategic goals and priorities to the customer's preferences. Budget allocation and strategic prioritisation are conceived as annual processes in most of the institutions which provide little room for manoeuvre during the year.

To become fully Agile, the investment budget management process needs to be adapted to shorter cycles of review, where decisions on budget allocation can be revisited to incorporate the new information coming from competitors, regulators and lessons learned from the delivery teams, among others. The investment process usually involves four main components (figure 15).

Investment plan

The investment plan informs about how the strategic objectives of the organization cascade down into specific objectives for a workstream, and eventually tribe, as well as how they are going to be met. It also provides financial and metrics information that enable regular monitoring and assessment, in order to make allocation decisions and select priorities for the Workstream.

In an Agile organization, the investment plan is a governance tool that will enable the organization to define the Strategic and Financial Plan and communicate it both to the Board of Directors and to colleagues.

Unlike what happens in traditional organizations, the investment plan does not only come from the executive level, but Workstreams also participate including their strategies and defined working lines, deriving the objectives, financials,

outcomes and dependencies (internal – from other teams, and external – markets, regulations, etc.).

The key most valuable characteristic of an Investment plan in an Agile organization is its flexibility. This does not mean that it can be changed on a daily/weekly basis, but rather that it can be adjusted if the Workstreams'/Teams' outcome and value out of certain project(s) is not what was expected.

The Investment plan is also built around Objectives and Key Results (OKRs), which allows connecting the daily activities of the employees with the company's overall strategic plan. To this end, the overall strategic objectives at a corporate level are progressively decomposed into their lowest components or "objectives" and corresponding "key results". These are, at every level of the organization, fed back up one level to ensure adequate understanding before continuing their way down the organization, which results in a network of objectives and key results for each multidisciplinary unit of execution that, if achieved, ensures the delivery of the strategic intent.

Quarterly Business Review

QBR is a process that allows prioritisation between initiatives and ensures alignment between teams, whilst establishing the method for performance review based on Objectives and Key Results (OKR). A strong "alignment" is needed to ensure that the autonomy of the different teams or "multidisciplinary units of execution" does not interfere (but contributes towards) the achievement of the overall objectives.

QBR is not to be understood just as a committee but as a process (i.e. performance review, planning, prioritisation and alignment process) where teams at all levels help to understand and analyse their performance, how this performance has

impacted on objectives and, based on this analysis, reconsider priorities and redefine the investment plan for the next period if necessary. This analysis is usually made bottom-up, with intermediate layers consolidating the information, adding their point of view and submitting it to the upper layer.

Funding Request

When the QBR process is concluded, Workstreams need to estimate the costs of the initiatives and accommodate the budget to better accomplish the priorities that have been established. The funding request is the official process to do so.

The aim of the funding request is to explain how the resource and budget that were assigned to the Workstreams have been efficiently allocated as well as to demonstrate to the Committee how the requested budget is needed to achieve the delivery of value and fulfil the objectives.

The funding request for the next period is submitted after each QBR session, and includes the official funding request (budget that the Value Stream is asking for); the strategic context (summary of the Investment Plan allowing the Committee to understand the request's background and the financial statements supporting it); previous budget expenditure (which provides a clear view of how efficiently the Value Stream uses the budget); and the allocation plan (the Value Stream plans for allocating and delivering on the requested based on the initiatives, objectives, resources, license, property, trainings, etc.).

While the strategic context and previous budget expenditure is to be captured from the Investment Plan, the rest of the request is usually based on the decisions that the QBR has made for the next period.
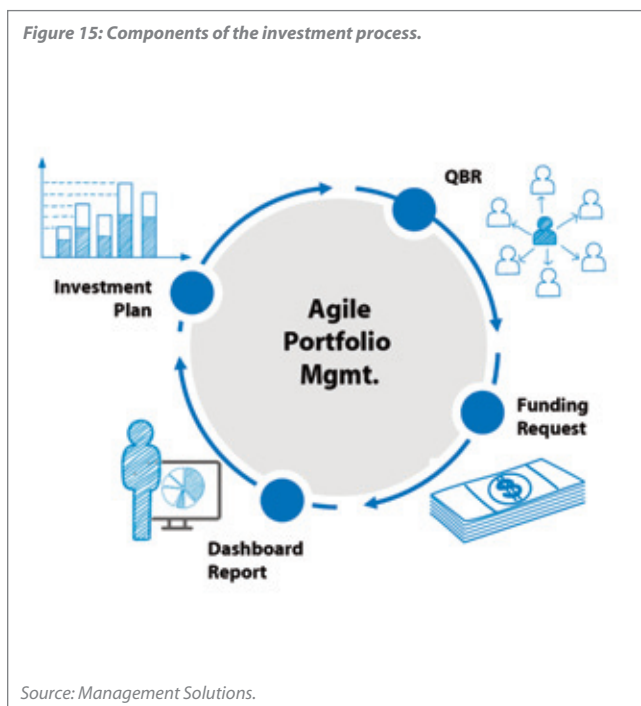
Dashboard report

Traditionally, Key Performance Indicators (KPIs) have been used as a way of measuring how successful organizations are in achieving their objectives. However, KPI's do not provide a communication channel between the Board's objectives and the current performance of the teams. To this end, a data driven approach needs to be implemented, using quantitative indicators to assess the level of accomplishment of the qualitative objectives or aspirational goals. This will allow the organization to move away from the "gut feeling" level into the level of completion of objectives and analysis of the root cause of failures. This data driven approach is usually supported in a new data infrastructure to allow near real time Customer Journey Analytics, and is usually centralised to provide independent measurement.

Figure 15: Components of the investment process.

Source: Management Solutions.

Changes in performance measurement

When an organization decides to adopt Agile, its ability to measure its performance becomes critical, as this will allow it to better manage and monitor progress towards its strategic goals while several many changes are happening at the same time. A performance measurement framework needs to be established (figure 16) including the following main components:

Objectives and Key results

The first thing to focus on is the organization's strategy and the OKR' definition, as this will have full impact on other elements to be measured within the performance measurement framework.

Logically, the OKR' metrics are derived from the organization's strategy and are developed at executive level.

These metrics are directly related to the business, as they are the organization´s maximum expression of what it wants to achieve (Objective) and the key results it expects (Key Results) given the market scenario and expected outlook as well as other factors.

These metrics serve as a tool to monitor the organization's progress towards the defined strategic plan and also to know how the market/environment is responding to the defined strategy, as there are many external and internal factors (competitors, new technologies, organization less mature than competitors, etc.) that affect the organization's strategy, which means the results might not be as expected.

The QBR is also a useful tool for this purpose, as it provides a quarterly assessment of the level of achievement of OKRs, by comparing what the organization wants to achieve with the company's performance in the market, which might result in OKRs being refined to better accomplish the organization's strategic goals.
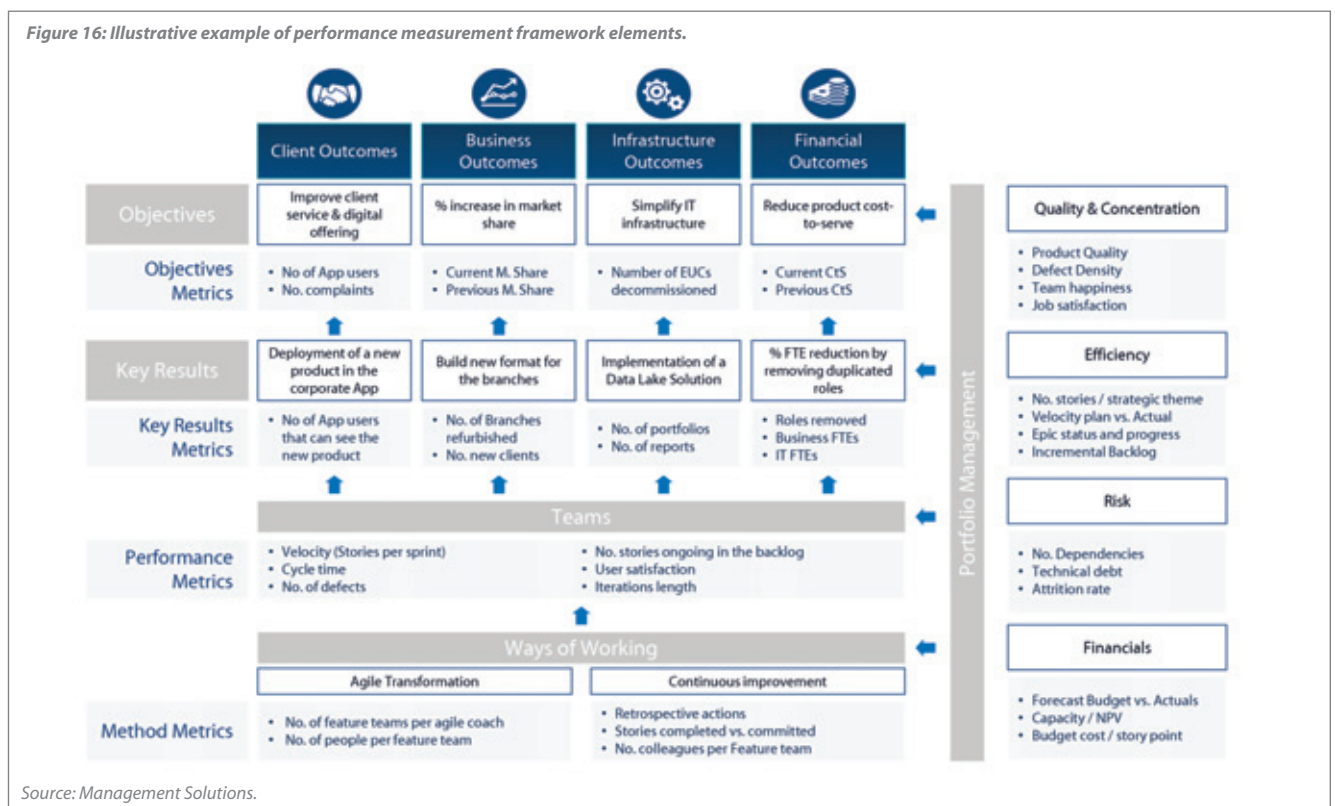
Teams

The second element to be measured is team performance. One of the challenges of going Agile is to adequately and effectively measure team performance, as many performance measures defined for Waterfall projects are not entirely appropriate for an Agile team.

It is generally accepted that Agile teams design and use their own metrics in response to identified needs, rather than using pre-defined metrics. Although metrics can be defined within the team, they (or at least a large proportion of them) need to be scalable to the rest of the organization in order to provide the organization with a clear view of how the progress of teams contributes to strategic goals.

To sum up, the right set of team performance metrics would need to allow the organization not only to have a clear view of how the progress and efficiency of Agile teams is impacting on the achievement of objectives, but also to early identify inefficiencies, blockers and behaviours that facilitate collaboration and innovation.

In general, and in line with the 12th Annual State of Agile Survey[15], these are considered the most relevant performance metrics:

Figure 16: Illustrative example of performance measurement framework elements.

Source: Management Solutions.

- **Customer/User Satisfaction:** usually includes looking at the sales figures, number of support calls vs. number of features delivered over a period of time, or usage statistics on product or site capabilities.

- **On-Time Delivery:** generally measured in the context of expectations about what will be delivered. A Burn-up chart helps to visualize the trend of work done, as well as the impact of scope changes.

- **Business Value:** several principles of the Agile Manifesto recognize the importance of delivering business value. Business value can be explicitly measured when the work is totally and clearly defined (e.g. contract). If this is not the case, however, measuring value might be more complex and subjective in the sense that market inputs drive decisions and value is often a best guess. Having a business value score applied to the features to be delivered can be highly helpful to measure value.

- **Quality:** while agile development is similar to RAD (Rapid Application Development) in terms of speed and flexibility, there's a big difference when it comes to technical cleanliness. Agile approaches emphasize quality of design, because design quality is essential to maintain agility.

- **Productivity:** in an Agile world it is measured by outcomes, not output. Using a burn-up chart to count stories or features over time is a great way to understand how much the team is actually delivering.

- **Predictability:** the growing unpredictability of the future is one of the most challenging aspects of the new economy. According to the Agile Manifesto, predictability is no longer about seeing the change coming but instead, being able to adopt changes even at the last stages of a project.

Ways of working (WoW)

This element is measured from two different perspectives: Agile Maturity and Continuous Improvement.

Agile Maturity is directly impacted by the transformation strategy, as this determines the organization's actions and associated timeline to become fully Agile.

In order to assess the organization's progress towards becoming fully Agile, as well as to identify and manage any blockers or inefficiencies, a set of Maturity metrics needs to be defined. Some examples of Maturity metrics are the number of feature teams working in Agile vs. the total number of teams, or the number of feature teams per Agile coach.

On the other hand, measuring the continuous improvement of the WoW is especially relevant in an Agile organization, as this capability is at the centre of Agile success.

Senior Management need to be able to know not only how much the organization is benefiting from adopting Agile, but also how much things are improving in the organization as a whole.

In this sense, defining an adequate set of Continuous Improvement metrics (such as retrospective actions, stories completed vs. committed, or number of people per feature team) enables an organization to continuously identify more efficient working formulas, as well as providing a tool to monitor, report on (preferably in a lightweight and streamlined manner) and finally manage the improvement processes identified.

Portfolio Management

After considering the OKRs, Teams and WoW (ways of working) as items to be measured and managed, the Portfolio Management perspective is introduced, as it is broadly dependent on the other ones.

The portfolio management metrics can be categorized in four main groups: Quality & Concentration, Efficiency, Risk and Financials.

Some examples of Portfolio Management metrics for each of the above groups are:

- **for Quality & Concentration:** product quality, defect density, team happiness, job satisfaction
- **or Efficiency:** nº stories/strategic theme, planned vs. actual velocity, epic status and progress, incremental backlog
- **for Risk:** nº dependencies, technical debt and attrition rate
- **for Financials:** forecast budget vs. actuals, capacity/NPV and budget cost/story point.

Changes in the location footprint

The need for a new location strategy is introduced in the sixth principle provided in the Agile Manifesto: "The most efficient and effective method of conveying information to and within a development team is face-to-face conversation".

In the Agile community, co-location of teams is considered as very beneficial and many people see co-location as a necessary condition to working in an Agile way. Co-located teams have proved to be more efficient regarding performance and productivity, but they also bring some other advantages, such as team building (creating the identity and culture, and enforcing the commitment), a higher performance (since people can focus their collective energy on creating the product and they are aligned from the beginning), and an adequate environment for collaboration and decision making, which increases efficiency and coordination.

To redefine the location footprint, it is important to consider the following elements:

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[15]VersionOne & CollabNet (2018).

Location strategy definition

The first step is to assess the organization's current location footprint with the aim of identifying the baseline from which the transformation will start as well as identifying the pain points and barriers to going Agile.

A relevant aspect to consider when assessing the current location footprint is the early identification of SMEs, the areas/topics they are experted in and their criticality. This would help to avoid additional pain points in the new location strategy.

As a second step, it is important to identify the requirements that can support an Agile operating model from a location strategy perspective. This typically involves the co-location of teams and the design of new collaborative spaces to facilitate the new ways of working, moving away from the "FTE per Desk" philosophy.

Based on the previous analysis and future aspirations, the natural next step would be to define the location strategy, including the properties that would make sense to be kept, the ones that shall be sold and the new properties to be acquired and/or rented.

Use of collaborative tools

Although co-location yields many benefits, it is not always fully feasible. In such cases, collaborative tools can be used to overcome the challenges caused by non-co-location.

Collaborative tools can be grouped into three categories depending on the nature of work they facilitate:

▸ **Instant communication tools**: technology is progressing in the field of connecting people as if they were in the same room. For enterprises, there are several market solutions that foster communications, such as Real-time chats and Internal Social Networks.

▸ **Conferencing tools**: video and voice conferencing tools are widely used by companies with distributed teams to overcome the disadvantages of not being co-located.

▸ **Task Management tools**: these are software tools that help to effectively organize and manage tasks through functions such as task creation, planning and assignment, tracking and reporting. The reports generated assist the management in analyzing the overall efficiency of an individual, team or organization (figure 17).

Changes in the IT Infrastructure

To implement Agile development in a large company, it is necessary to have adequate software architecture. Agile states that each team must have end-to-end control of the software component it is developing, without dependencies on the work of other teams. This way of working poses the challenge of how to control versions that are jointly developed by several teams, as well as the overall project. To ensure that infrastructure developments and changes are not affected by the Agile way of working, teams needs to have broad authority to make decisions and to develop their own processes in order to create, deliver and operate the software.

Leaders in the adoption of the Agile way of working usually deploy:

a. One or several tools that allow collaboration and a "single view" of changes. Tools that enable the delivery community to interact, to have visibility on the backlog of work, to record lessons learned, etc.

b. Tools to perform automated testing (unit testing, regression testing, etc.)

c. Tools to enable the software engineering community to publish and re-use code and libraries, merge code, etc. This is particularly relevant in areas of the organization where, despite being intensive in terms of coding have historically been more prone to siloed programming (e.g. certain Risk modelling areas). Part of the transformation to an Agile way of working includes, among others, an orientation towards open source languages, object oriented programming, creation of libraries that gather the existing "latent knowledge" of the organization and a specific focus on code design, streamlining and efficiency.

d. A persistent focus on automation and digitisation of processes, and a fundamental review of opportunities where software can outperform humans. Some of the early adopters of Agile way of working have been able to think very differently about some of their core processes, finding opportunities for streamlining and automation in areas that were deemed to require heavy human intervention. Some successful examples include the application of machine learning algorithms to enhance the process of the validation of mathematical models, providing challenger models that help identify potential problems with the models currently in use and / or help explain their structure. Other examples include full automation of KYC processes, or the application of machine learning algorithms to help filter anti-money laundering alerts and reduce the number of false positives, hence reducing the amount of effort required to validate them manually.

e. A new culture of recognition and encouragement of technical knowledge and engineering.

To achieve optimum performance, the software architecture tends to be loosely coupled and focused on services, since a service approach allows different software components to be developed independently. In other words, goal-oriented development is usually adopted, for which some of the recommended practices are:

▸ Unique responsibility, assigned to a specific team.
▸ Minimize the degree of coupling between software components.
▸ Avoid designing with very extensive codes.
▸ Unrelated functionality shall be treated separately.
▸ Design the application so that most processing functions are in the database.
▸ Design and implement the software package in a structured, modular and hierarchical way.

How a team's development work is integrated in an Agile environment will depend on multiple factors, so it is necessary to design a development architecture where the tools provide the broadest functionality and facilitate the implementation of Agile methodologies. There could be a need for some software development capabilities to be developed in-house to ensure real front-to-back autonomy within the teams, which could impact strategic partnerships with third parties.

Figure 17. Task management tool providers.

Trello
- Interactive platform that imitates the convenience of sticky notes.
- Easily organize project cards, assign tasks and share documents. Option to hold discussions.
- The team gets email notifications any time a change is made on a project card.
- Compatible with mobile usage.

Evernote
- It allows the sharing of handwritten notes, small comments, and all kind of documents.
- Powerful search and discovery features.
- It has administration controls as well as data ownership that gives control to the company regardless of team composition.
- Compatible with multiple digital platforms.

Flow
- Simple interface with numerous features in order to plan, monitor and prioritize tasks.
- Online chat option and direct messaging service for interacting with team members on a more personal level.
- Activity notification is sent to email with customizable settings.

Azendoo
- It allows to monitor progress status (real-time) and makes task delegation simple.
- Emails can easily be converted to tasks and it allows you to syncronize your timetable with the calendar.
- Team discussions can be located in one open and accessible place.

JIRA
- Mostly used to plan, track, and release effective software.
- Highly customizable and feature-rich solution to adapt to each user scenario.
- JIRA collects and unites all historic data in a single, searchable hub, and provides access to it at any point of time.

Asana
- Users can monitor completion of tasks and delegate assignments.
- Document sharing is possible, and users can start conversations on a particular task, share images, attachments and links, and sign up for email notifications.
- Focus mode feature to boost concentration.

Wrike
- Ability to put an item/task in different folders without duplication.
- Powerful analytics for Easy Reporting.
- Audit Reports for Enterprise-Grade Users.
- Panels for tracking individual and overall Progress (you can attach files, show pictures or tables, and cross-link to other tasks).

Projectplace
- Provided with real time communication features.
- Allows you to share files straight from your Google, Box, or Dropbox accounts.
- Security is confirmed by the presence of a Single Sign-On mechanism (SSO).
- Offers open developer API, allowing powerful integrations.

Source: Management Solutions.

Lessons Learned, misconceptions and trends for the future

As has been discussed, "going Agile" is not a straightforward process. It requires cross-cutting changes to be applied in organizations, impacting aspects ranging from their people model to their IT infrastructure and location strategy. Such a transformation does not guarantee success. In fact, it is often the case that Agile transformations face several obstacles that impede them from meeting their original objectives. There are some lessons learned from Agile transformations in order to overcome such obstacles. It is also worth considering some of the principal myths and misconceptions surrounding Agile transformation.

Lessons Learned

Different organizations have varying levels of complexity, requirements and objectives. It follows that the way different organizations approach an Agile transformation (and the hindrances associated with it) will differ. However, there are some common factors frequently experienced by organizations which act as barriers to successful Agile transformation. The list below outlines the main lessons learned around such barriers:

Culture is a key component of Agile transformation

The decision to "go Agile" is most commonly made in the higher ranks of an organization, where executives agree on Agile as the way forward. However, organizations may not be ready for such transformation, often because their culture is not compatible with the Agile principles. For example, a survey conducted for the 12th State of Agile Report[17] indicates that 53% of organizations claim that their culture is often at odds with Agile values. Particularly in large organizations, which are used to operating through long-established processes, there is often a culture of resistance to disruptive change – the same survey found that in 46% of organizations there is a general organizational resistance to change. This type of culture may prevent effective cascading down of Agile change to middle and lower levels of the organization. As such, senior management needs to ensure that the organization is ready for Agile transformation from an operational but also a cultural perspective.

Agile leadership

An Agile change should be reflected not only in the way the organization delivers change, but also in the behaviours throughout the organization. This includes a new leadership mindset that embraces continuous learning, and recognises that teams will require a further level of autonomy. In this sense, Agile leadership evolves from mandating to enabling. Driven from the top, this change in mindset and behaviours is more likely to effectively cascade down throughout the organization. For example, when the engineering multinational Bosch decided to adopt Agile ways of working, the company's leadership developed new leadership principles to be embedded throughout the company, focusing on Agile being at the centre of the company's culture[18]. In doing so, the company's strategy evolved from an annual project to a continuous process, and the members of the management board divided themselves into small Agile teams and tested various approaches for solving different problems.

Going Agile is not a simple process

Many decisions taken by organizations encompass a certain degree of planning fallacy – a report on the state of software development[19] found that the number one cause of project failure for most project managers was unrealistic expectations; Agile transformations are often not an exception to this rule. Companies that embark on a large scale Agile transformation expecting positive results in the short run may find that such a transformation may require time for its full impact to become visible. Just as the very first projects delivered in an Agile approach in an organization are likely to take longer than expected and/or go over budget, Agile transformations are likely to create some disruption in the short term. As the organization becomes more mature in Agile ways of working,

[16]LIFE (1955). Albert Einstein was a German mathematician and physicist, winner of the Physics Nobel Prize in 1921. He developed the special and general theories of relativity, being considered the most influential physicist of the 20th century.
[17]VersionOne & CollabNet (2018).
[18]Rigby, D., Sutherland, J. & Noble, A. (2018).
[19]CodingSans (2018).

the impact will be more and more evident. Organizations need to understand that this is a process that cannot be performed overnight, as reaching Agile maturity takes time.

Scaling Agile is particularly difficult in large organizations

As could be expected, the larger an organization is, the more difficult it becomes to implement a transformation that involves changes across the entire value chain, from processes down to behaviours and cultures. Agile relies on principles of flexibility, close collaboration, small autonomous units, and clear communication. Scaling this in organizations whose sheer size and complexity require multiple different units involved in individual decisions is a challenge. Furthermore, organizations need to recognise that going Agile is not simply a change in how software is delivered; rather, it requires a shift in behaviour that needs to be evident in delivery teams and other peripheral units alike, such as Finance, Risk, HR, etc. Without the buy-in of the entire organization, scaling Agile is likely to reach a halt. For example, the transportation and logistics company C.H. Robinson first started injecting Agile elements in its delivery practices in 2011[20]. The benefits started appearing, but scaling an Agile approach across the business was a challenge, and the Agile approaches introduced were hindered by established practices and procedures. In scaling Agile across the board, the company decided to embed Agile practices in areas other than delivery, such as HR and Marketing. Lastly, other operational aspects of Agile transformations are increasingly challenging for large corporations; for example, co-locating teams in large companies with a wide property portfolio may be costly to implement and result in loss of key talent. Therefore, large organizations need to be aware that implementing Agile at scale will involve many complications that are not as evident when applying Agile methodologies in individual projects.

Maintaining a balance between Agile transformation and ongoing operations

It is already evident that embarking on an Agile transformation is a taxing process, which requires significant investment and dedication of effort. It has also been argued that Agile transformations are likely to cause some disruption in their early stages, before the organization reaches a certain level of Agile maturity. These two factors often hinder a good balance between delivering an Agile transformation and continuing BAU operations. To minimise disruption on ongoing operations, organizations may elect to deliver an Agile transformation in a phased approach: this involves commencing the transformation in selected units, typically in delivery-focused teams such as Change Management and IT, where people are more likely to already have some exposure in Agile practices. This can then be progressively extrapolated in other units, applying any lessons learned in previous phases in the process. Test and learn is one of the key principles of an Agile way of working; there is no reason why it could not be utilised in the Agile transformation itself. This way, organizations are able to better balance their transition to an Agile model with their ongoing operations.

Agile is not a panacea

For all the benefits that an Agile way of working encompasses, it is recognised that there are some aspects and/or units for which Agile is not fully applicable. In the case of change management, there are certain types of projects that may be difficult to fully deliver via an Agile approach. This is particularly the case for long-term projects with stable requirements, where potential errors in delivery can have a detrimental impact on the whole organization (e.g. large-scale regulatory or remediation programmes). Furthermore, when considering an Agile transformation at scale across the different areas of an organization, it is worth keeping in mind that the core function of some units (such as Risk, Compliance, Legal, etc.) dictates

[20]Denning, S. (2016).

that they need to have a certain degree of independence from the rest of the organization. Such cases may be required to be left out of scope from an Agile transformation. However, this does not mean that they cannot adopt any principles of an Agile way of working, but rather that such principles may be applied differently across distinct units.

Delivery based on capacity

Traditionally, organizations have been planning their delivery of change based on demand prioritisation, followed by the adequate sizing of the workforce. In that sense, change teams were rapidly created and dismantled on a project-by-project basis. In contrast, an Agile organization operates more as a "fixed capacity organization" as units are divided across different teams with a greater degree of autonomy whose capacity remains fixed, and it is the priorities that change depending on this capacity. In that sense, their focus shifts from "how much capacity do we need to deliver change" to "what can we deliver with our current capacity".

Execution risk in Agile

Agile organizations still have to face a certain degree of execution risk in change delivery. In fact, Agile ways of working do not reduce overall execution risk; rather, they allow organizations to act quicker upon emerging execution risks by applying lessons learned in each delivery cycle. Nevertheless, Agile organizations still need to ensure that they capture and address execution risk. In particular, in the case of Agile such risk can arise in different ways:

▸ Increased autonomy of delivery teams may lead to misalignment in the objectives of different units.

▸ Ongoing initiatives and programmes could be disrupted by new ways of working introduced mid-way through delivery.

▸ New ways of working and changes in the people model may drive some talent to leave the organization, causing skillset gap. Furthermore, training on new ways of working may require some time to become evident in delivery, thus impacting delivery performance in the short term.

▸ Disruptive changes may lead to some inefficiency in the early stages of Agile adoption, before the organization reaches a certain level of Agile maturity.

▸ Costs are likely to increase in the short term, due to lack of effective controls on incremental costs emanating from shorter delivery cycles.

Furthermore, the effective management of execution risk in Agile is often hindered by inadequate or lack of risk and monitoring methodologies. This is because the control framework used to manage execution risk in so-called "waterfall

organizations" is not aligned to the new ways of working. As such, Agile organizations need to ensure that they adapt their risk monitoring and control processes, in order to ensure they minimise execution risk.

These lessons learned will allow organizations embarking on an Agile transformation to become more aware of the impact such a transformation entails, as well as actions that can be taken to ensure any negative consequences are minimised.

Myths and Misconceptions on adopting Agile

In spite of its increased coverage over the past few years, there remains a plethora of misconceptions surrounding Agile as a concept. These misconceptions may often mislead practitioners about what Agile may actually entail; as such, this section will demystify some of the most common myths around Agile.

"An Agile organization is an anarchical organization"

Agile transformation does not refer to losing control of teams and people. In an Agile organization, key control elements such as governance, reporting and line management are adapted to co-exist with self-organised and autonomous teams.

Agile does however entail changes in traditional governance practices, removing the number of layers decisions need to go through in the organization, and incorporating clearly defined parameters within the lower layers that they can make use of their decision-making power. Thus, the governance process becomes fast-paced to enable the making of decisions that are outside the teams' remit.

The role of managers is also deeply transformed, as working teams become more horizontal. In the new organization, managers are essential, as they need to ensure that the goals, visions and limitations of a project are adequately defined and aligned, in order to enable teams to be self-organized and achieve their targets.

"An Agile organization does not require a lot of planning"

Planning is as essential to Agile as it is to Waterfall and, if not performed properly, can diminish considerably the effectiveness of a successful transformation. The difference between the two approaches lies mainly in timing; in Waterfall, there is an extensive planning activity upfront, while in Agile there is an incremental planning approach throughout the project lifecycle.

In an Agile organization, high-level planning is completed at early-stages and, and the beginning of each sprint consists of a planning meeting to agree the requirements and timelines. During the sprint, activities for the day are detailed at the daily stand-up and, later, at the end of each sprint, the lessons learnt enable the plan to be shaped for the next sprint, making it possible to review prior decisions as the project progresses.

"Agile does not require any documentation"

As stated in the Agile manifesto ("we value working software over comprehensive documentation"), this approach places less emphasis on the need for documentation than traditional methodologies, but it does not mean that documentation is not required altogether.

Agile aims at avoiding an excessive amount of time being spent on upfront preparation of detailed documentation likely to be refined at later stages. However, it is still necessary to produce comprehensive and value-driven documentation that will contain executable specifications focused on the actual needs of the consumer of the document, instead of creating multiple static documents with speculative ideas as it frequently happens in delivery teams working with Waterfall approaches.

"Agile means the end of Waterfall"

As previously mentioned, there will be some projects that require a more structured process with stable requirements and clear deliverables; especially in sectors were the pace of change is slow. Therefore, the much-foreseen end of waterfall is not as close as expected by some.

A vision for the future

Based on the current level of adoption of Agile ways of working (and digitalisation, more broadly) in large corporations, we dare to anticipate some potential trends for the future:

‣ Progress in the adoption and contagion of the Agile way of working in the teams in charge of change delivery, as well as the adoption of Agile principles in business as usual. One of the first collateral benefits of adopting practices such as daily stand ups, sprint planning, etc., and the co-location of teams in open spaces prepared to encourage collaboration is the increase in employee satisfaction and engagement levels. This provides organisations with a strong short term incentive to extrapolate these practices outside the "change" disciplines.

- Organisational alignment to Customer Journeys, including "run" as well as "change" teams. Most of the industry leaders, irrespective of sector, have incorporated in their strategy the ambition to become "customer centric". From an organisational perspective, the areas in charge of change delivery and those responsible for the creation of new products and services have already done it (the tribes mentioned in this document, as an example). However, other organisations are working on the next evolution of the model, where the business itself aligns to those journeys, with a P&L account per product / service / journey and empowerment to manage the full proposition (though capturing obvious synergies in terms of physical product distribution, servicing, etc.).

- Strengthening of the partnerships with Start-ups, FinTechs etc. In the last years there has been a certain cultural change and increased awareness in large corporations of the fact that the ability to offer innovative products and services to customers should not be restricted to the talent and ideas that currently exists in the organisation. More on the contrary, there is a trend to leverage upon external talent (through either funding, equity investment or partnership agreements) in order to improve customer experience and service.

- Structural changes in technology. Some of the leaders across different industries are already considering the possibility of shifting their technological infrastructure to one that can leverage upon the benefits of Cloud Computing and Big Data Analytics, and that provide an almost "real time" view of the current activity and customer interactions. Even in those corporations that have adopted Agile at scale, there is a limiting factor in technology, in terms of the efficiency and robustness with which new developments can be incorporated into production environments.

- Integration of products and services. Ever more frequently, large corporations start to visualise all-encompassing digital platforms were their clients can contract and consult all their products and services, with a seamless and single Customer Experience. These processes of integration (that in certain cases involve the integration of services provided by third parties, such as the above-mentioned start-ups) require relevant changes in the infrastructure.

- Progress in the development of the disciplines associated to "design". Following the lead of digital leaders like Apple or Amazon, large corporations across industries are investing in talent capable of designing attractive and sustainable products and services. Profiles such as technological architects, but also UX designers or graphical designers are increasingly prominent in large corporations across sectors.

Final remarks

As a final conclusion, most of the large corporations across "traditional" sectors and across regions are in one way or another rethinking their methods of delivering improved products and services in a quicker and cheaper way. And there is convergence in those approaches towards some type of Agile methodologies.

Despite that intense activity there is recognition that some more time and perspective is required to fully confirm current economic benefits of those new ways of working. However, those market leaders that adopted the new ways of working at scale earlier than the rest start to see (and measure) a virtuous cycle of stronger employee engagement, corresponding attraction of talent, evolving culture of innovation and scientific learning, better and more innovative products and services, industry recognition and corresponding brand awareness.

It is to be expected that such virtuous circle soon incorporates increased investors trust in the company´s adaptability to new disruptive events (whatever those might be), sustainability of their business model, balance sheet and P&L and a corresponding reflection on the market value and financial resilience of those Corporations, giving them a competitive advantage with respect to their (current) peers and potential future disruptors.

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Glossary

"Agile" methodologies: Kanban, Scrum, Extreme Programming, Dynamic Systems Development Method, DevOps, BusDevOps, Feature-driven development, etc.

Agile scaling: The joint work of multiple teams whose task is to deliver a solution developed within the Agile environment.

Dynamic Systems Development Method (DSDM): It prioritizes the chronogram and the quality of the functionality by agreeing terms and costs and then modifying the scope to achieve the proposed objectives.

Extreme Programming (XP): A software development discipline for medium-size projects and small teams that aims to emphasise productivity, flexibility, informality, teamwork and limited use of technology outside programming.

Kanban: It optimizes customer value by improving the overall efficiency, effectiveness, and predictability of a process following the principles of visualising the workflow, limiting work in progress, managing and enhancing the flow, making policies explicit, and continuous improvement.

Nexus: A framework to develop and maintain initiatives for delivering products and software to scale. It consists of roles, events, artifacts and rules that bind and weave together the work of approximately 3 to 9 Scrum Teams working on a single Product Backlog to build an Integrated Increment that meets a goal.

Quarterly Business Review (QBR): Allows prioritisation between initiatives and ensures alignment between teams, whilst establishing the method for performance review based on Objectives and Key Results.

SAFe: It stands for Scale Agile Framework, a framework that provides organizations with guidance on core competencies that need to be developed to become an Agile Enterprise and adopt Agile across the delivery of change.

Scrum: A framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value emphasizing the fast feedback, iterative changes, and cross-collaboration across teams.

Sprint: Time-box of 4 weeks or less during which a "Done", useable, and potentially releasable product Increment is created.

Sprint planning: Time-boxed to a maximum of eight hours for a one-month Sprint to understand clearly the scope and workload of the next sprint.

Squads: High-performing execution teams that have end-to-end responsibility for ensuring the delivery process is autonomous, self-steering, flexible and multifunctional. It consists in a team, a product manager and the Scrum master.

Subject Matter Experts (SME's): People with specific knowledge or skills that provide external advise to a tribe or the squads on a concrete matter.

Tribe: A collection of squads within a shared journey or product, and can include between 100 and 150 people depending on the number of squads acting as knowledge hubs.

Waterfall approach: Waterfall methodologies have been broadly used in large corporations since the 70s offering a sense of organization and engineering practice. It involved the full completion of one step before moving on to the next.

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