

Agile: a digital start for yet another retroversion of management foresight

Its past, through factors of its emergence, its present reflected by its principles: a manner to apprehend its future

Mouna HAJJAJ, Houda LECHHEB

Abstract— Globalization is being present. The digital revolution has led to a change in the perception of work and organizational models. The business world has experienced strong transitions in recent years. It is now clear that the theories developed and studies carried out, are no longer adapted to the current context. However, traditional management models have shown their weaknesses. Exploiting new ideas regarding work organization was necessary. Management is seeking completion and nourishing itself from its environment to better face it. It, therefore, turned to the world of software development for inspiration. It has rummaged a whole approach which is agility. This approach is better suited to its expectations. It has fostered flexibility at all levels: one level describing how the company harmonizes its internal activities and a second level focusing on the company's interactions with external actors.

Index Terms— Agile, change management, employees' empowerment, flexibility, globalization, innovation, organizational transformation.

1 BACKGROUND

RECENT history shows the clear link between the socio-economic context and the way companies operate. We are experiencing an unprecedented technological acceleration that increases flexibility through reduced lead times. The availability of information allows for better control of the environment and promotes responsiveness. ICTs contribute to collaborative dynamics both within companies and between companies or towards customers. There are counterparts to these opportunities. The company must face its inability to process information at the rate at which it appears.

The company is a system whose complexity is increasing. This is due to the multitude of elements that revolve around it, their evolution and the connections between them. Information systems create more links, by multiplying the places of interaction and increasing the speed of relationship between all these actors. A new conception of the organization is then required. Large companies are now organizing themselves into a network in a partnership and evolving relationship. The dominant principle is sharing information so that everyone can adopt the right attitude at all times which requires transparency from organizations — these latter need to be more collaborative internally and more cooperative externally.

The company of tomorrow must not only be ready to adapt its strategy according to opportunities and threats but above all, should develop a capacity for anticipation. This capacity concerns both the strategic level and the operational one. Among the notable changes we have to focus on, is the transition from a world of rules to a world of conventions [1], which emanate from tacit agreements between acting individuals, challenged by events. The procedure is only an organization of tasks that lead to individual optimization while the process is reconfig-

ured in a relational logic aimed at optimizing process links.

All these phenomena are so contrasted that we must learn from them regarding the management of our human organizations, particularly companies.

2 THE BIRTH OF AGILITY

Organizational concepts characterize each economic era and reflect its dynamics. The major dominant industry at the end of the 20th century and the beginning of the 21st century is the software industry. His era has passed, but we still live on a dominant concept that emerged from it, which is agility. It is as a strategic posture reflecting a renewed vision of the company. In response to the context where changes are occurring at a frantic pace, regularly requiring rapid reactions from organizations [2].

Agility encourages us to go beyond the formalism of control in favor of a model of autonomy and employee empowerment. The Agile model proposes to overcome the top-down models all for more flexible and contextualized solutions adapted to the realities on the ground and the facts of the situation by fostering the networking of employees. Change planning becomes less theoretical but co-constructed by placing organizations in a state of continuous learning. Collective intelligence is a significant resource for performance, and the techniques are available for its development. Collaborative mode, experiential learning, and digital technologies combine to develop capacities for sustainable and collective change.

All this is at the heart of the *Agile Manifesto* [3] developed in the IT sector. Since then, a kind of conceptual shift has generalized its adoption to several areas. Agility is becoming a survival requirement for companies. The hyper-volatility of the business forces the companies to change their management methods. Predict the future becomes too weak for companies. Customer or supplier failures are omnipresent. Customer breakdowns are becoming more frequent. To face these challenges, Agile methods suits in a world where adaptation to

- Mouna HAJJAJ is a program manager at National Center for Scientific and Technical Research, Morocco. She is a Phd student at Ibn Tofail University, Morocco. E-mail: mounahajja@gmail.com
- Houda LECHHEB is a Professor at Department of Economics, Faculty of Law, Economic and Social Sciences, Ibn Tofail University, Morocco, E-mail: lechheb.houda@uit.ac.ma

change is a crucial competitive factor.

3 CONCEPTUAL FRAMEWORK

A few years ago, information resources about Agile management came mainly from consultants and practitioners in the field. Now conferences on this subject are more and more numerous, and the related articles are multiplying. Researchers use regularly *Agile Manifesto* to introduce the concept. Seventeen experts wrote *Agile Manifesto* and brought together the most practical methods already available from their different backgrounds. *Agile Manifesto*, translated into 59 languages, proposes twelve principles that have efficiently proven their worth for projects that have adopted it.

Its principles help to reduce planning efforts and give work teams more flexibility [2]. Collaboration between stakeholders nuances relationships and positions itself in opposition to negotiation practices [2]. Conversations are the most effective means of communication. In dispersed teams, technologies can ensure maintaining conversations. Their open and horizontal aspect characterizes these communications [4]. In change, these conversations promote a better understanding of impacts, an element that managers often overlook [5].

Agile Manifesto's principles are not the only source for Agile management but also software development tools. The best known are *Build & Run* which combines programming moments with deployment times. This method advocates the decomposition into elementary components that can be designed and tested individually. Traditional methods differentiate and isolate three silos: design (Think), programming (Build) and deployment (Run) [6]. This results in operating in silos with few links between stakeholders. Whereas the quality of a development project lies precisely in the ability of these same parties to exchange and adjust. The Agile methods also propose an organization and governance of projects in a mixed team *Scrum* with users, project owners, and project managers. The *Scrums* are daily with a first team to deal with the development points and with intervals of 3 to 4 weeks to ensure the delivery of components.

The Agile company has a cohesive, well-integrated management team that leads by example. It must be vigilant to discover threats and opportunities, resilient and agile to rely on the resources and skills required to act on their ability to absorb the shock. The company's strategies in coping with change have consisted of anticipate it, control it and accompany it. Agility consists of becoming organized for the changes. This happens thanks to the opportunities arising from the synergy between the external environment and internal capacities to take advantage of [7]. Dynamic capabilities reference model proposes three key steps [8]:

1. Being able to read the market called "sensing": i.e., coupling analysis and intuition, feeling the market by soliciting R&D, suppliers, and customer needs and innovations.
2. Be able to seize opportunities or "seizing": i.e., select business models and promote stakeholder engagement and loyalty.
3. Be able to reconfigure both the tangible and intangible

assets of the company.

Agility makes us aware of a pragmatic approach adapted to the needs expressed by customers. It places the client at the center to adjust the process to their needs [4]. A customer culture is generalized in a process-based organization. In this organization, everyone is each other's customer. The real participation in the organization by customers -in the broad definition- is recommended [4], [9]. Besides, customer's needs are what determine product innovation requirement and not what systems can do [4]. Agile management prefers fast and frequent iterations. It allows a non-linear process that helps to meet changing needs in near real-time [10], [11]. This involves peer and client assessment. The client becomes a co-producer sometimes but also a co-designer, among other things through his evaluation of the product.

The company is therefore Agile when it succeeds to manage the opposition between inertia and chaos. Agility emphasizes operational over documentation. It encourages exchange and collaboration with the ecosystem. This approach also promotes permanent reactivity rather than strict monitoring of a plan. Several companies run online communities to co-create in real time and always ensure customer satisfaction. In this increasingly digitalized environment, innovation cycles are now ultra-fast, with short time-to-market.

Risk taking, uncertainty, and change are no longer feared but integrated into the process. They appear as new opportunities for progress. Agility also deals with the awareness of the unpredictable changes in the world. Strategically, today's company must be more adaptable and flexible than before and evolve much faster. We can consider the company of the 1960s as a single, hierarchical and centralized block. Today's company resembles a set of small operational units belonging or not juridically to the same company. They have the particularity to be close to the customer, permanently reconfigurable and therefore equipped with rapid organizational adaptation processes. These operational units are sensitive environmental sensors and highly interconnected: if one picks up a change in the environment, the signal is sent back directly to the others. All can change direction almost instantly. The networked enterprise is an excellent strategic and organizational response. The company has at its disposal IT tools, for internal management and relations with customers and other environmental stakeholders. These tools enable the company to act quickly, promoting both flexibility and smooth change while ensuring operational efficiency. The Agile company must have the ability to expect the disruptions of its environment but also the consequences of its own decisions and actions.

Cooperation should be both internally, to seek a collective optimum rather than a maximum by function, and externally towards all the actors in its environment thanks to multiple renegotiable agreements. It must reach permanent innovation in customer offer to leave the volume paradigm to enter the relational model. Being Agile is about all these principles. Applying these principles must allow offering a global solution, at the price of a standard offer with a high level of differentiation, including service and information. This offer must be sustainable, not only in the ecological sense but also in the temporal one. The product's life cycle must, therefore, be ex-

tended because its design is no longer the result of a quest for low cost as it was the case with Lean management.

Lean management is to the liking of hierarchical and pyramidal organizations. This paradigm ignores the human being, focusing above all on tools. It is now being analyzed not as a breakthrough, but as sophisticated improvements to the Taylorism. There was a shift from a style based on authority and control to a form based on leadership and collaboration. The manager no longer becomes responsible for organizing and allocating activities to achieve an aim but for creating the conditions for the collective effectiveness of his team. For the real manager of tomorrow, the level of know-how and relational quality of his team will be the accurate measure of his managerial performance [9]. The Agile mode favors the search for collective intelligence from the bottom of the pyramid to the top managerial sphere. This acts in the side of an active horizontality by bringing together populations with different profiles and skills on the same problem aim [2], [4], [9]. The Agile mode puts management in a situation of co-construction with teams [2], [4], [9] and allows employees to adopt and experience from an operational point of view, a humanist approach in the normative world of work management. Unlike lithic routines and constant excitement, the agility model encourages employees to deploy in a network. This explains its rapid development. It allows for active membership, which makes it a powerful lever for sustainable change. Employee motivation and stimulating working conditions appear essential to ensure the smooth running of the iteration process and the effectiveness of collaboration [10]. The critical factors for the success of differentiation and performance of the Agile company will be people.

In the way of reed whose flexibility makes it easier to resist the winds and therefore to survive, an organization must build strategic agility. Indomitable for tactical and operational adjustments, the notion of agility invites us to rethink the triangulation between the constrained scalability of standards, the relative flexibility of processes and reactive capacities of the company. It is a model of permanent reconfiguration that allows a lightened organizational structure to flourish. But let's not believe that there is a turnkey configuration of the organization or Agile management. Above all, there is an agile state of mind to adopt, visionary governance and a strong corporate culture and through employee empowerment.

4 MANAGING CHANGES

Companies need specific practices led by the human resources function to support the development of organizational agility. Among these practices, talent acquisition and development, work organization, performance management, and change management. Steering cycles and participatory workshops are where recipients/beneficiaries and stakeholders/communities can collaborate, experiment, test, innovate and invent the most appropriate behaviors to meet a strategic aim and the benefits of change [12].

Today, organizations are implementing and experiencing many changes. The change aims to reposition the organization in a changed environment. The company's manager could not

lead the move alone, following a thorough environmental and organizational diagnosis. Thus, the strategy is rarely implemented as planned, particularly because emerging phenomena disrupt the implementation of the initial plans [13]. A progressive change built step by step in the company is more benefic [14]. In this vein, change cannot be real unless project actors put it into practice. During implementing a new tool, actors change, alter and adapt their daily practices [15]. Each change in practice creates the conditions for future change, which leads to new changes in practice. Change is no longer approached as a separate event in the organization's life outside the actors but as a continuous process. It is no longer possible to talk about change by referring to the transition from a state A to a state B. The ordinary situation of the organization then is dealing with changes [16]. Agile companies treat change not as an obstacle to be overcome but by developing the capacity to change among actors. This makes up a paradigmatic break because we no longer accompany a change but improve the ability to transform individuals and groups, thus considering change as a factor to be integrated and managed. One of the suggested ways is to set up experiential devices to get stakeholders confident with change's experience. This allows individuals a process of observation provoking reflection that leads to conceptualization. In this model, the concrete experience is to validate, test and review abstract concepts. The change's beneficiaries want to be actors and live the experience to understand it better and integrate it sustainably as it progresses through the exchange of practices with others.

Organizations need systemic change. It is simpler to break the change into small projects and mobilize employees around a common goal. Organizations must develop a better understanding of roles, tools, and processes to achieve this holistic vision. This requires a cultural change leading to real feedback practices [4], [9]. Individuals' beliefs and habits must change [9], especially since organizations would be agile through their employees [17]. They must experiment and continually change their ways of doing things [17]. The organization must rely on its resources, its employees. It must ensure that they are engaged [11]. Skills development and underlying learning processes becomes an essential key for creating and maintaining agility [18]. Skills and learning are at the individual level but also at the organizational and inter-organizational one [18]. An Agile environment is in constant transformation and responds positively to organizational learning [17]. The Agile leader develops the ability of his team to live in ambiguity. Rather than trying to protect his team from change, he gives them the resources to welcome the new realities. He promotes improvisation instead of falling into the trap of rigidity. Agile teams have a strong identity and resilience. The awareness implies building dialogical intelligence between the action, the transformations it induces, its projection into the future and the return to the present. A company's agility must deal with the reality of its assets and its wealth.

Becoming Agile requires bringing fluidity to change initiatives by deploying small steps built and rebuilt quickly because it would be illusory to believe that agility comes from above and is smoothly embedded following an aging rational-

ist model [19].

5 AGILE PERSPECTIVES

In the above, we have already mentioned the unpredictability of the environment. As a result, the future of agile management is itself hard to predict. It would be more reasonable to talk about hypotheses rather than fatal statements. Agile is about to reach 20 years. It will probably be active for another twenty years. Among the possible futures of Agile, we have thought of these following scenarios. We have based ourselves on the elements of this study and some elements of the 12th annual state of Agile™ report [20].

A growing gap between companies:

As mentioned above, a significant impact is occurring on companies that adopt and integrate agility into their development cycles. The environment will force companies that have not pursued the path of agility not to follow their peers or even their own requirements. We will see more and more non-agile companies lose weight and back down to make way for competitors who are more attentive to their environment.

A significant rise in Agile certification:

Over the past decade, the popularity of agility increased. The continuation or increase in this trend is plausible. Among its facets, introducing Agile certifications by the widest international project management organizations. There is nearly a level of certification for each actor involved in implementing each of the agile methods.

More focus on teams when scaling agility:

Agile scaling initiatives should not run in a waterfall way. Priority should help the team aligned with the customer, then incrementally evolving the neighboring groups and departments. This will be the dominant practice. That can prove useful in setting priorities.

An increasing combination of management approaches:

A combination of the best tools and philosophy of recent management approaches may remain. This provides organizations with a practical toolbox for managing unpredictability and complexity. There will be integration and synergy to focus on a pragmatic and integrated approach to creating customer value.

Mature teams will grow in strength:

Dependencies are opposed to the values of agile teams. But, it is difficult to avoid it when dealing with complex problems. The challenge is to be agile with the skills necessary to satisfy the client. The formula is to have cross-functional, self-organizing and autonomous teams. These characteristics will emerge regarding teams. This is a step toward producing for less cost over the long term. This may allow teams to mature their processes. This help for leading to less waste and creating more business value.

Extension of Agile scope:

There will be a vision incompatibility if an Agile team works

within an organization that is not Agile. That's why Agile has already spread throughout whole organizations. The Agile movement will continue to expand. Soon its field of application will be extended to many organizations. Its tools will, therefore, multiply to meet the variety of organizational context.

5 CONCLUSION

The history of the company is not a simple succession of models that ignore each other. Companies should always integrate the achievements of the past. It is not appropriate to abandon traditional practices and tools that continue to prove their worth. Combining the agile approach with traditional project management methods is also a very promising approach. By implication, every company should choose its own decision criteria. The framework conditions of the organization and its strategies can influence the choice in consultation with the teams involved. That helps to overcome any resistance to change. The failure of the approach will also result in a mechanical and short-term application. The real transformation is not in methods, tools, processes. It is above all in people. Innovation must be not only technological but also managerial. At the heart of this new approach, companies must have processes shared and built with the people, involved and sufficient resources and finally, iterative and incremental action plans. New agile methodologies still arise with the promise to do agile even better.

REFERENCES

- [1] R. Diaz-Bone, "Classifications, Quantifications and Quality Conventions in Markets - Perspectives of the Economics of Convention", *Historical social research-historische sozialforschung*, pp. 238-262, 2017.
- [2] N.A. Bonner, "Predicting Leadership Success in Agile Environments: An Inquiring Systems Approach", *Academy of Information and Management Sciences Journal*, pp. 83-103, 2010.
- [3] Agile Alliance. "The Agile Manifesto". <https://agilemanifesto.org>, 2001.
- [4] S. Denning, "Why Agile can be a game changer for managing continuous innovation in many industries", *Strategy & Leadership*, pp. 5-11, 2013.
- [5] B. Hussein, M. Hammound, H. Bazzi, and A. Haj-Ali, "PRISM-Process Reengineering Integrated Spiral Model: An Agile Approach to Business Process Reengineering (BPR)", *International Journal of Business and Management*, pp. 134-142, 2014.
- [6] R. Hoda, N. Salleh, J. Grundy and H. Mien Tee, "Systematic literature reviews in agile software development: A tertiary study". *Information and Software Technology*, pp. 60-70, 2017.
- [7] M. Nijssen, J. Paauwe, "HRM In Turbulent Times: how to achieve organizational agility?", *The International Journal of Human Resource Management*, pp. 3315-3335, 2012.
- [8] D.J. Teece, "Explicating dynamic capability: the nature and micro-foundations of (sustainable) enterprise performance", *Strategic Management Journal*, pp. 1319-1350, 2007.
- [9] S.C. Misra, V. Kumar, and U. Kumar, "Identifying some critical changes required in adopting Agile practices in traditional software development projects", *International Journal of Quality & Reliability Management*, pp. 451-474, 2010.
- [10] A. Baird, , F.J. Riggins, "Planning and Sprinting: Use of a Hybrid Project Management Methodology within a CIS Capstone Course", *Journal of Information Systems Education*, pp. 243-257, 2012.
- [11] K. Korhonen, "Evaluating the impact of an agile transformation: a longitudinal case study in a distributed context", *Software Qualitative Journal*, pp. 599-624, 2013.

- [12] C. Loch, M. Mahring and S. Sommer, "Supervising Projects You Don't (Fully) Understand: Lessons for Effective Project Governance by Steering Committees", *California management review*, pp. 45-67, 2017.
- [13] H. Mintzberg, "Organizational structure and dynamics", [Structure et dynamique des organisations] Paris, Editions d'Organisation, 1982.
- [14] J.B. Quinn, "Strategies for change: Logical incrementalism", Homewood, 1980.
- [15] W.J. Orlikowski, "Improvising Organizational Transformation Over Time: A Situated Change Perspective", *Information Systems Research*, pp. 63-92, 1996.
- [16] A. Adamik, M. Nowicki and K. Szymanska, "Openness to co-creation as a method of reducing the complexity of the environment and dynamizing companies' competitive advantages", *Management & marketing-challenges for the knowledge society*, pp. 880-896, 2016.
- [17] M.L. Joroff, W.L.Porter, B. Feinberg, and C. Kukla, "The agile workplace", *Journal of Corporate Real Estate*, pp. 293-311, 2003.
- [18] L. Jin-Hai, A.R. Anderson, and R.T. Harrison, "The evolution of agile manufacturing", *Business Process Management Journal*, pp. 170-189, 2003.
- [19] A.N. Hassner, C. Perkins, "The Agile Change Methodology: a researched organizational change maturité model helping organizations become agile, a proven change management method", *Lambert Academic Publishing*, pp 65-76, 2012.
- [20] Collabnet and VersionOne, "The 12th Annual State of Agile Report: Long Term Survey VersionOne", Atlanta, 2018.

IJSER