USE AN AGILITY SCORE TO BE MORE RESILIENT : THE DEFENSE SECTOR

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Summary

The acceleration, movement and diversity of security issues that France has had to face since 2013 have prompted its political decision-makers to revise the security and defense strategy. Support for innovation, the integration of new technologies and greater permeability between the administration, large defense industries and SMEs with innovative solutions can help ensure a comprehensive, agile and more resilient army model, through the use of collaborative mode and the practice of experiential principles in personnel administration.

We carried out a study by questionnaires with 30 players in the Defense Industry. In the first part, we will present a concise state of the art on agile management, outline the conditions for applying generic constructivism in our field, detail our methodology based on intervention research, and then discuss our results. We will thus highlight the fact that better resilience in the organization of the Defense Industry requires the implementation of a new organizational model and an agile management mode taking into account the importance of collaboration, experiential and iterative principles in order to be quick and responsive to adapt to the nature of the demand addressed to it, or otherwise said to be resilient.

We will then discuss the implementation of the experiential model and the application of the concept of collective mind combined with the iterative mode in time-constrained situations.

Key words : agility, resilience, collective mind, defense industry

INTRODUCTION

The 2008 and 2013 White Papers on Defense and National Security have been adapted, in particular through the publication of the 2017 Strategic Security and Defense Review which highlights nine areas for reflection around a common objective: to ensure the security of the citizens and the interests of France on national territory and abroad. Given the national and international context, some of these points could be optimized.

Among these nine areas of effort and vigilance, three themes stand out. Insecurity and violence on the national territory, manifested through the entrenchment of the jihadist terrorist threat and in the light of the protests that have marked the news since 2018, are growing concerns. In addition, the need recognized by the Minister of the Armed Forces, Florence Parly, to maintain a comprehensive army model aimed at pursuing the development of a dynamic and innovative Defense Technological and Industrial Base (BITD). This requires, among other things, an openness to new technologies often carried by SMEs. Finally, the major international challenges of recent years, such as the beginnings of Sino-American antagonism, the rise of Russia, the complexity of the environment in the Indi-Pacific region or the stagnation and evolution of conflicts in the Middle East (Iran, Yemen, Libya, Syria), must give rise to reflection on France's security and defense policy with regard to its interests in these regions. The latter cannot be freed from a fair questioning as to the human and technological resources required for its implementation.

Thus the proximity and the evolution of the terrorist threat require more collaboration (optimization of communication and better coordination) between the entities in charge of the administration of defense (general directorates, central directorates, intelligence services and others) fighting against this threat. A plan to fight radicalization, based in part on education, experimentation and an increase in the resources allocated to certain key sectors, such as penitentiary intelligence, are key factors of success.

It is also necessary, especially with the COVID situation, to find new solutions to improve security in the neighborhoods of republican reconquest (QRR) by operating iteratively in decision-making processes and in action on the ground. The daily security policy (PSQ) is a good example. Supporting innovation, the integration of new technologies, and greater permeability (collaboration) between large defense industries and SMEs to innovative solutions can help ensure a comprehensive and more resilient military model. Finally, a good knowledge of the capability resources and security challenges of France in a crisis zone can help strengthen a strong and autonomous diplomatic posture.

Our research question is therefore the following: ***To what extent can the agile management mode make the organization of the Defense Industry more resilient and efficient ?***

In the first part, we will present our theoretical grounding, then expose our methodology and our case, then discuss our results.

THEORETICAL ANCHORING & HYPOTHESIS

Since the 1940s, many authors have been interested in the theme of change in organizations. In the 1970s and 1980s, theories of organizational change diversified (taking into account the actors, intentionality, the complexity of organizations, etc.) to focus on organizational change from the 1990s.

With the development of information technologies, the theory of agile management is developing, without however finding real practical applications until now, while remaining very normative. We have, however, identified six characteristics that deserve to be tested on field cases to determine the interest, or not, of using such a method to implement organizational solutions in an institution. The literature and research work carried out in the field highlight the following characteristics concerning agile management :

Auteur(s)	Caractéristiques identifiées
Weick, 1993 ; David, 1996	Collaboration : Multidisciplinary & transversality
Greenberg, 2013	Study of behavior in changing organizations
Barton L.C. & Ambrosini V.	Engagement and cynicism in contexts of change
Kidd, 1994	Proactive and rapid adaptation
Gunasekaran, 1998	Survival and Growth
Martin, 1991 ; Larman & Basili, 2003	Iteration: Immediate visibility of the work carried out, rapid correction of encountered issues
Alberts and Hayes, 2003	Robustness, resilience, responsiveness, flexibility, innovation and adaptation
Whitworth & Biddle, 2007 ; Desplats, 2009	Socialization / network logic: "Bonding" between the actors, use of new media
Maitlis, 2005 ; Rouleau, 2005 ; Autissier & Bensebaa, 2006	Internalization / anchoring: Accountability, Appropriation of the meaning of the procedures carried out
Charles, 2010	System flexibility: Responsiveness and efficiency
Messager, 2013	Liberalization of leeway: functional governance
Setili, 2014	Experimentation : Testing, acceptance of failure and capitalization
Shaw et al., 2005; Sangari et al., 2015; Chan et al., 2017; Fayezi et al., 2017	Indicators: Characterization of physical performance of the system

These characteristics of agile management make it possible to establish the following propositions regarding resilience :

- Sense-making & social processes

Agile management is first of all a social process which emphasizes the behavior of individuals (Whitworth & Biddle, 2007) and is carried out according to the psychological factors of their motivation (Robert, 2007) given the importance of integration of intuitive processes into rational decision-making (Quinet, 1994). In addition, it must be meaningful (Maitlis 2005; Rouleau, 2005; Autissier & Bensebaa, 2006) for the people who experience it, otherwise they will not adopt the appropriate behavior to ensure the success of the work.

Recent experiences in companies have demonstrated the limits of hierarchical structures and the weakness of majority functioning. The concept of organized cognition (Weick, 1979) makes it possible to make the link between the structural model of an organization and the social interactions between individuals. The behavior of individuals within an organization defines the nature of these social interactions and therefore the degree of flexibility of the organization considered.

For an individual, understanding their existence and mission within an organization is the decisive factor towards organizational reliability (Weick, 1979). Reconciling the control of individual behavior and the maintenance of a stable structural model is the key to sustaining the organization and thus achieving a high degree of resilience and reliability (Hollnagel, Journé & Laroche, 2009).

Our proposal will therefore be as follows:

⇨ **P1. The establishment of a cognitive organization confers a high degree of resilience and reliability.**

- *Collective mind* & experiential approach

Agile methods promote collaboration and interaction between people within an ecosystem, resulting in better resilience & performance for a given organization (Weick, 1993). In addition, these are based on the experiential approach carried out through the organization of participatory workshops and the sustainability of the collaborative mode within and outside the strategic projects of an organization (Vandangeon, 2015).

The concept of collective mind (Weick, 1993) or collective or collaborative mind is implemented through 3 elements essential to the establishment of such a mind: contribution (human exchanges), representation (each human being acts and makes other humans act within their own ecosystem), subordination (interweaving of each person's actions with the ecosystem).

More specifically, the concept of collective mind is developed to explain the performance of organizations in situations requiring continuous operational resilience. This concept is modeled as attentive interactions within a social system.

An increase in the attention paid to social interactions between individuals and the ability to understand them, decreases the errors of the organization within which these social interactions take place.

⇨ **P2. The collective mind is a source of resilient performance.**

- Decentralization of power and "room for maneuver"

The *Information Age* has seen an exponential acceleration of changes and an inevitable transfer of the principle of "Command & Control" to an interoperable and agile management mode (Alberts & Hayes, 2003). The increase in the degrees of freedom or the liberalization of leeway (Messager, 2015), a fundamental concept of agile methods, promotes the spirit of initiative, creativity (Kelley, 2014) and is a catalyst for an intrinsic motivation of teams.

The central point of creative confidence is to believe in one's own ability to change the world around us (here the environment in which the individual concerned evolves). It is about being convinced that you can carry out the project that you have designed. It is this belief in an individual's creative capacity that is at the heart of innovation (Kelley, 2014). Creative confidence can be enhanced and maintained through effort and experience. Creativity is a much broader and more universal notion than what are commonly referred to as artistic fields. Creativity can be defined as the use of the imagination to create something new in the world. It comes into play whenever there is an opportunity to generate new ideas, solutions or approaches (Kelley, 2012). Creative trust is a way of experiencing the world that generates innovative approaches and solutions, and in this regard design thinking can be qualified as an agile method in its experiential and iterative dimensions specific to the process of ideation and prototype of design thinking.

Our proposal will therefore be as follows:

⇨ **P3. Creative confidence promotes the development of a resilient culture.**

- Risk management

Agile management is an excellent method for having a reactive risk management system, from "market agility" to "implementation agility" (Setili, 2014).

Indeed, agile methods highlight the importance of performing tests and providing rapid feedback on the work carried out and demonstrate that this operation makes it possible to reduce the costs linked to the late discovery of anomalies (Berczuk, 2007). Our proposal will be as follows:

⇨ **P4. Waves of iterative experimentation make it possible to better control risks and gain resilience.**

The concept of agility applied to management is manifested by the completion of tasks or projects in an iterative mode via self-organized teams and working in close collaboration with end users. In this sense, this concept can constitute a relevant alternative to public management in terms of intelligence, via experiments carried out in a collaborative mode consistent with the notion of room for maneuver.

We wish to demonstrate that the theory of agile management is not a simple reaction to change, but corresponds to a movement of self-organization, where the human factor component is essential to its successful completion. It is therefore also a question of identifying the know-how available and of achieving buy-in and involvement of the staff of the organization concerned.

EPISTEMOLOGICAL POSITION

The epistemological position adopted is that of generic constructivism. One of the researchers has been working as a consultant in the defense industry for over 10 years and knows most of the players, which has allowed them to speak openly with the latter. The researcher developed investigative techniques, presented below, which made it possible to limit subjectivity biases. Collective knowledge was produced by successive iteration to build shared knowledge faithful to the principles of cognitive interactivity.

For each contingent situation studied, in each of the entities visited, generic components were identified, which supported the hypothesis of generic contingency. In addition, following an interactive process, via interactive workshops, a common representation was built which is acceptable to all. Bias were minimized in order to be able to build a knowledge base with scientific intent. The confrontation between the actors and the expert opinions allowed a co-construction of knowledge according to the principle of diagnosis with mirror effect, respecting the principle of contradictory intersubjectivity. The approach adopted is indeed that of intervention research (Savall et al., 1996, 2004, 2007).

METHODOLOGY

We carried out a study by questionnaires aimed at measuring (*scoring*) the agility of 30 defense entities both public (administration) and private alike (industries). We observed the latter over a period of 5 months, between September 2019 and January 2020 on a sample of 30 entities distributed within central or general directorates (10), departments (6) and offices (14).

Data collection was carried out either through physical or virtual appointments, conference calls or electronic message exchanges. Before the questionnaires were sent, all the stakeholders were contacted by phone to clearly explain to everyone the objectives of the approach and its implementation methods.

1. Profile of respondents

The people who answered the questionnaire occupy positions dedicated to the management of strategies and change processes. The very varied panel of people in terms of type of entity, function, seniority, workforce groups and growth rate thresholds, has certainly made it possible to analyze a large majority of agile practices in terms of conducting change in organizations in the Defense Industry.

2. Structure of the questionnaire

The review of the literature, the exploratory study and our experience as a researcher led to the development of an interview guide (see table here after) with the objective of gaining a precise understanding of agile practices in terms of change management in those entities of the Defense Industry.

It has four themes :

(1) Adaptation to change : questions on taking into account the perspectives of customers and their evolutions, the allocation of resources in a flexible way or via the implementation in order to propose innovations, the integration of iterative cycles to processes and the use of automation of tasks identified without added value.
(2) Collaboration : questions relating to the use of collaborative mode as part of the strategic thinking process and within the workspace, the establishment of partnership relations with the external environment, and 'use of collaborative mode in operational and day-to-day activities.
(3) Team consideration : questions relating to the contribution of day-to-day tasks to achieving the strategic vision, taking into account data from the field in defining strategic choices, carrying out evaluation campaigns, the contribution of employees to decision-making, the choice of interlocutors having an impact on the performance of day-to-day tasks and the arrangements made by management to ensure a high level of motivation among employees.
(4) Organizational socialization : questions relating to the setting up of feedback and coaching sessions in the organization of daily tasks, the fluid circulation of information within the organization and anchoring a strong culture within the organization.

Table 1. Structure of the questionnaire

Introduction : présentation par le chercheur de la recherche, présentation par le répondant de son entreprise et de sa fonction	
Etes-vous familier avec la notion de management agile ? Quels sont, selon votre point de vue, les trois termes qui définissent le mieux la notion de management agile pour une organisation (du plus important au moins important) ? Avez-vous déjà travaillé en adoptant un mode de management agile ? Considérez-vous que le management agile puisse être appliqué à toutes les dimensions d'une organisation ?	
PRATIQUES D'ADAPTATION AU CHANGEMENT	
Expérimentation	Les ressources de l'organisation sont-elles affectées à l'avance sur des activités précises ou sont-elles allouées de manière flexible en fonction des actions à réaliser ? Dans quelle mesure l'organisation fait usage des perspectives de ses bénéficiaires pour challenger son action et/ou ses initiatives ? Dans quelle mesure les métiers font usage de processus d'effectuation (identification des objectifs à atteindre à partir de l'évaluation des moyens et des ressources effectivement à notre disposition) ?
Itération	Dans quelle mesure les collaborateurs adaptent leur action en fonction des préférences de leurs cibles ? Dans quelle mesure les décisions arrêtées font l'objet d'actions concrètes et cohérentes ? Avec quelle rapidité les actions sont-elles initialisées à partir de l'arrêté d'une décision ? Dans quelle mesure la réalisation de cycles itératifs rapides sont-ils intégrés aux processus métier ? Dans quelle mesure avez-vous recours à l'automatisation des tâches identifiées sans valeur ajoutée ?

PRATIQUES DE COLLABORATION	
Stratégie	Les orientations et la vision stratégiques de l'organisation sont-elles communiquées aux collaborateurs ? Les collaborateurs sont-ils impliqués dans le processus de réflexion stratégique ? De quelle manière ?
Opérations	Les processus et les outils permettent-ils aux collaborateurs d'apprendre librement du savoir d'autrui (enseignements, échecs…) ? De quelle manière les réunions sont-elles menées au sein de votre organisation ? La prise de décision requiert-elle la tenue d'instances dédiées ? A quelle fréquence les équipes métiers et les équipes techniques échangent-elles ? Dans quelle mesure l'organisation a recours au mode DevOps pour conduire un projet informatique ?
Espace de travail	L'espace de travail est-il organisé en espaces distincts entre les divers personnels et les services de l'organisation ? Les divers personnels interagissent-ils fréquemment entre eux de même que les services ? Les différents personnels et les services sont-ils regroupés au sein d'équipes autonomes de petites tailles en fonction des besoins métiers remontés par le terrain ?
Environnement	Dans quelle mesure l'organisation interagit-elle avec son environnement ? L'organisation partage-t-elle ses pratiques avec d'autres acteurs de son environnement ? L'organisation est-elle partie intégrante d'une communauté de pratiques de plusieurs acteurs qui favorise la collaboration entre les acteurs qui la composent et le fonctionnement en mode autonome d'équipes pluridisciplinaires de taille réduite ?

PRATIQUES DE CONSIDERATION DES EQUIPES	
Ancrage	Les choix stratégiques dépendent-ils des données utiles aux équipes métiers ? Dans quelle mesure les collaborateurs adaptent leur action en fonction des préférences de leurs cibles ? De quelle façon les activités sont-elles coordonnées au sein de votre organisation ? Dans quelle mesure les tâches du quotidien concourent à la réalisation de la vision stratégique ? De quelle manière se déroulent les campagnes d'évaluation ? L'architecture des systèmes d'information est-elle étudiée en fonction des données utilisées et des besoins remontés par les métiers ?
Libéralisation	Dans quelle mesure les collaborateurs peuvent-ils contribuer à la prise de décisions opérationnelles ou sur les projets d'importance stratégique pour votre organisation ? Qui sont les interlocuteurs privilégiés dans la prise de décisions ayant un impact sur l'exécution des tâches du quotidien ? Dans quelle mesure les ressources humaines nécessitent-elles d'être formées pour être opérationnelles ? Quelles sont les dispositions prévues par le management pour assurer et maintenir un niveau élevé de motivation chez vos collaborateurs ? Dans quelle mesure votre organisation favorise-t-elle la mobilité interne ?

PRATIQUES DE SOCIALISATION ORGANISATIONNELLE	
Socialisation	A quelle fréquence des sessions de feed-back et de coaching sont-elles organisées dans l'organisation des tâches du quotidien ? Dans quelle mesure l'information circule-t-elle au sein de votre organisation ? Comment qualifierez-vous la culture de votre organisation ?

3. Analysis process

Our analysis process consisted of several steps and followed a logic of data extraction and concatenation (Savall & Zardet, 2004).
The first step was to extract verbatim from the answers to the introductory questions in the interview guide (see table above), or more than 250 verbatim in total.

The second step was to concatenate the data from the responses to the questions relating to each theme (see table above), ie nearly 1,300 responses in total. With a rating scale of 1 to 5 for each question, the score assigned varies depending on the answer given by the given entity.

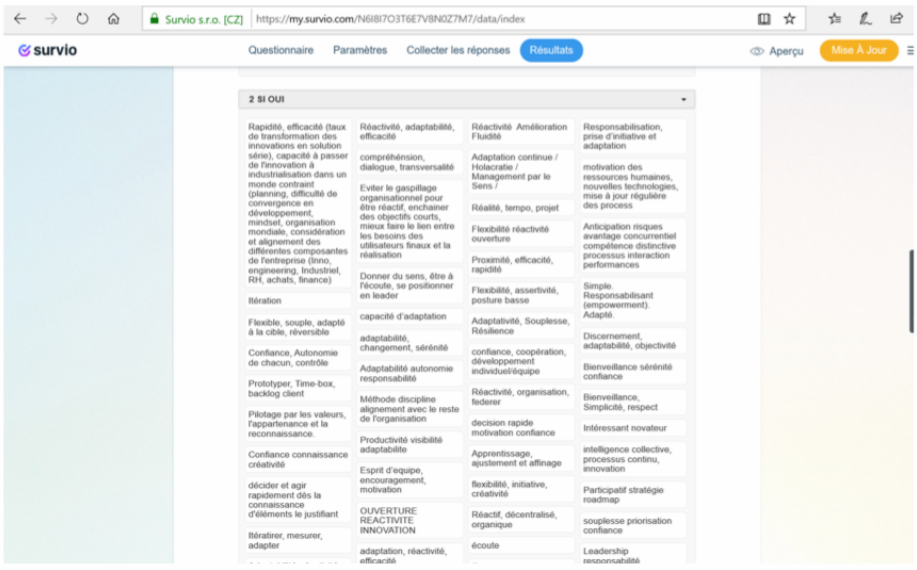
On the basis of this rating scale, a grid for reading the scores was defined, as follows :
- 0 to 1,5 : very low
- 1,51 to 2,5 : low
- 2,51 to 3,5 : average
- 3,51 to 4,24 : high
- 4,25 to 5 : very high

By counting all the scores for each question, it was possible to establish an **overall agility score** for each organization that responded to the study. By counting the scores of the questions associated with the variables relating to the concept of agile management, it was possible to establish a **score per variable** for each entity in the study.

4. Choice of selected software

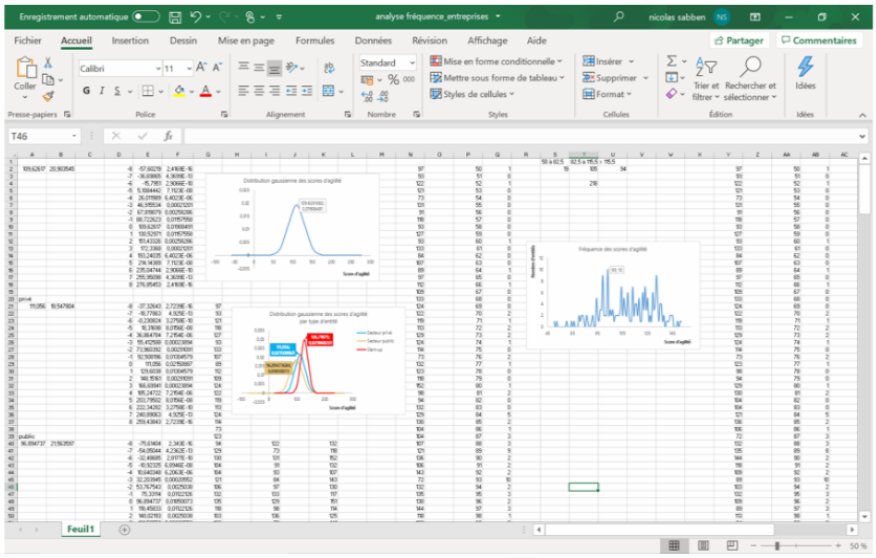
The choice of software was made according to the amount of data to be analyzed in order to be efficient in their processing. The option of having a concatenation tool (Survio) and a data analysis tool (Excel) seemed relevant here.
In terms of data concatenation, Survio software provides descriptive statistics and generates simple descriptive graphs.

Table 2. Extract from the qualitative study after concatenation using the Survio software



In terms of data analysis, given the volume and nature of the concatenated data, we opted for the Excel spreadsheet (see table here after).
In particular, it makes it possible to identify and build typologies from raw data, to build complex functions and to establish correlations.

Table 3. Extract from the qualitative study after quantitative processing in an Excel spreadsheet



RESULTS

We were able to deduce the following results:

1. Highlighted variables

Aiming to measure (*score*) agility, this questionnaire study revealed the following variables for the respondents who obtained the highest scores :

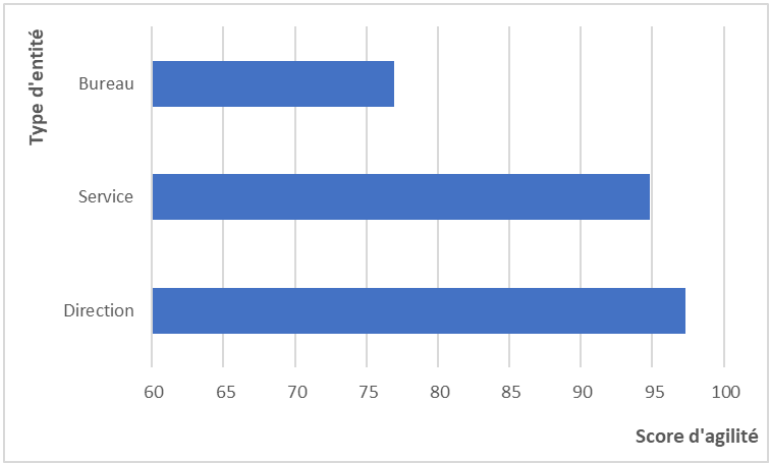
- Adaptability in the allocation of resources and the choice of actions / initiatives to be carried out
- Trust in individuals and encouragement of group dynamics
- Flexibility of decision-making and execution through subsidiarity and automation
- Openness to the environment and collaborative mode
- Adherence to the strategic trajectory via daily tasks
- Exemplarity and life within the units

2. Main results

Beyond the variables highlighted, this study by questionnaires made it possible to establish the following results from the measurement of the concept of agility.

It turns out that the respondents with the highest scores in the sample are the strategic level entities, namely central and general directorates as well as departments.

Table 4. Agility score by entity



- Adaptability in the allocation of resources and the choice of actions / initiatives to be carried out

68% of the most adaptable entities, through the use of the perspectives of their beneficiaries and the establishment of an implementation process, are directorates. Conversely, 61% who did not opt for this configuration and who are therefore among the least adaptable entities are offices.

- Trust in individuals and encouragement of group dynamics

63% of the most confident entities, having chosen to position their employees as privileged interlocutors in decision-making, in the organization of daily tasks and on projects of strategic importance for the company, are directions.

Conversely, 67% who did not opt for this configuration and who are therefore among the least confident entities are offices.

- Flexibility of decision-making and execution through subsidiarity and automation

77% of the most flexible entities, which manage to initiate actions as soon as a decision is reached through the realization of rapid iterative cycles integrated into their processes and having recourse to the automation of tasks identified without added value, are directorates (54%) or departments (23%). Conversely, 71% who have not opted for this configuration and who are therefore among the least flexible entities are offices.

- Openness to the environment and collaborative mode

86% of the most attentive entities, having chosen to be open to their environment through the contribution of employees to orientations and strategic vision and the implementation of processes allowing employees to freely learn from the knowledge of others, are directions (57%) or departments (29%). Conversely, 67% who have not opted for this configuration and who are therefore among the least attentive entities, are offices.

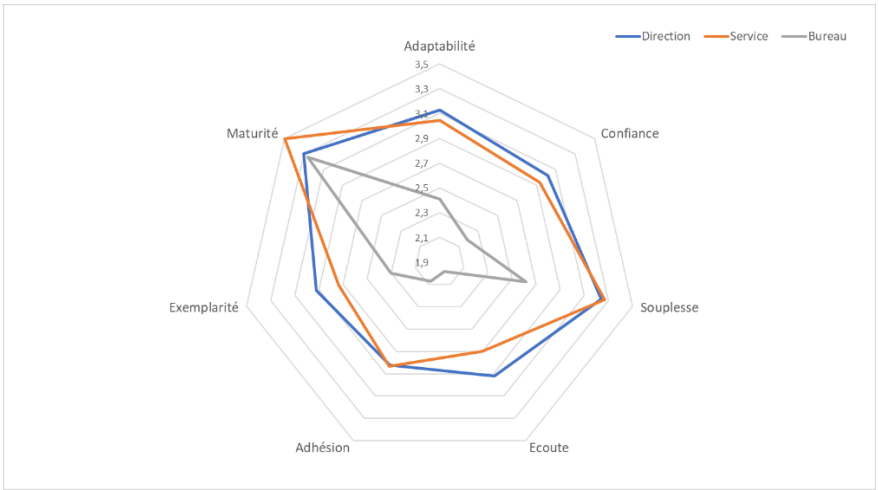
- Adherence to the strategic trajectory via daily tasks

80% of the entities where the membership is the strongest, having made the choice to determine their strategic choices based on data useful to the business teams, to coordinate their activities based on the key issues encountered by the business lines and to enable their employees to adapt their action according to the preferences of their targets, are directorates (50%) or departments (50%). Conversely, 75% who have not opted for this configuration and who are therefore among the entities with the lowest membership, are offices.

- Exemplarity and life within the units

80% of the entities where exemplarity is more implemented, having chosen feedback and coaching sessions in the organization of daily tasks and in fact have developed a cohesive culture, are directorates (50%) or departments (33%). Conversely, 60% who have not opted for this configuration and who are therefore among the entities where exemplary behavior is little implemented, are offices.

Table 5. Agility variables score by entity



DISCUSSION

Improving **resilience** in the organization of the Defense Industry requires the implementation of a new organizational model and an agile management mode taking into account the importance of **collaboration** and the use of **iteration** in order to be fast and responsive enough to adapt its operation to the nature of the request addressed to it.

We can discuss the following :

1. Highlighted variables

The synthetic model of variables from the literature used (see context) is confirmed by the variables highlighted in the study by questionnaires.

Correspondence of identified variables

Questionnaires study	*In the literature*
Adaptability in the allocation	Experimentation (Setili, 2014)
Flexibility	Iteration (Martin, 1991)
Openness to the environment	Collaboration (Weick, 1993)
Exemplarity and life	Socialization (Desplats, 2009)
Adherence to the strategy	Internalization (Maitlis, 2005)
Trust in individuals	Liberalization (Messager, 2013)

2. Main correlations

The proposals P1, P2, P3 and P4 established from the identification of the characteristics of agility from the literature used are confirmed by the results of the study by questionnaires.

Discussion P1 : The establishment of a cognitive organization confers a high degree of resilience and reliability

Questionnaires study	*In the literature*
80% of the entities where the membership is the strongest, having made the choice to determine their strategic choices based on data useful to the business teams, to coordinate their activities based on the key issues encountered by the business lines and to enable their employees to adapt their action according to the preferences of their targets, are directorates (50%) or departments (50%). Conversely, 75% who have not opted for this configuration and who are therefore among the entities with the lowest membership, are offices.	Agile management is first of all a social process which emphasizes the behavior of individuals (Whitworth & Biddle, 2007) and is carried out according to the psychological factors of their motivation (Robert, 2007) given the importance of integration of intuitive processes into rational decision-making (Quinet, 1994). In addition, it must be meaningful (Maitlis 2005; Rouleau, 2005; Autissier & Bensebaa, 2006) for the people who experience it, otherwise they will not adopt the appropriate behavior to ensure the success of the work..

The proposition (**P1**) that the establishment of a cognitive organization confers a high degree of resilience and reliability is confirmed.

Discussion P2 : The collective mind is a source of resilient performance

Questionnaires study	*In the literature*
86% of the most attentive entities, having chosen to be open to their environment through the contribution of employees to orientations and strategic vision and the implementation of processes allowing employees to freely learn from the knowledge of others, are directions (57%) or departments (29%). Conversely, 67% who have not opted for this configuration and who are therefore among the least attentive entities, are offices..	Agile methods promote collaboration and interaction between people within an ecosystem, resulting in better performance for a given organization (Weick, 1993). In addition, these are based on the experiential approach carried out through the organization of participatory workshops and the sustainability of the collaborative mode within and outside the strategic projects of an organization (Vandangeon, 2015).

In addition, 80% of the entities where exemplarity is more implemented, having chosen feedback and coaching sessions in the organization of daily tasks and in fact have developed a cohesive culture, are directions (50%) or departments(33%).

Conversely, 60% who have not opted for this configuration and who are therefore among the entities where exemplarity is little implemented, are offices.

The proposition (**P2**) that the *collective mind* is a source of resilient performance is confirmed.

Discussion P3 : Creative confidence promotes the development of a resilient culture

Questionnaires study	*In the literature*
63% of the most confident entities, having chosen to position their employees as privileged interlocutors in decision-making, in the organization of daily tasks and on projects of strategic importance for the company, are directions.	The information revolution has seen an exponential acceleration of changes and an inevitable transfer of the principle of "Command & Control" to an interoperable and agile management mode (Alberts & Hayes, 2003).
Conversely, 67% who did not opt for this configuration and who are therefore among the least confident entities are offices.	The increase in degrees of freedom or the liberalization of room for maneuver (Messager, 2015), a fundamental concept of agile methods, promotes a spirit of initiative and is a catalyst for intrinsic team motivation.

The proposition (**P3**) that creative confidence promotes the development of a resilient culture is confirmed.

Discussion P4 : Waves of iterative experimentation make it possible to better control risks and gain resilience

Questionnaires study	*In the literature*
68% of the most adaptable entities, through the use of the perspectives of their beneficiaries and the establishment of an implementation process, are directorates. Conversely, 61% who did not opt for this configuration and who are therefore among the least adaptable entities are offices. 77% of the most flexible entities, which manage to initiate actions as soon as a decision is reached through the realization of rapid iterative cycles integrated into their processes and having recourse to the automation of tasks identified without added value, are directorates (54%) or departments (23%). Conversely, 71% who have not opted for this configuration and who are therefore among the least flexible entities are offices.	Agile management is an excellent method for having a reactive risk management system, from "market agility" to "agility of implementation" (Setili, 2014). Indeed, agile methods highlight the importance of performing tests and providing rapid feedback on the work carried out and demonstrate that this operation makes it possible to reduce the costs linked to the late discovery of anomalies (Berczuk, 2007).

The proposition (**P4**) according to which iterative waves of experimentation make it possible to better control risks and gain resilience is confirmed.

Also from these same data, we have identified 5 levers of change management :

1. **Define the change first, then the organization**

The awareness that change has primacy before the organization makes it possible to examine precisely how the process of change is unfolding and therefore to assess the momentum of the change that has been accomplished. The implementation of a new organizational model is only the result of one or more change processes.

2. **Identify what needs to change and what needs to be abandoned**

The ability to foresee and capitalize on the new opportunities offered is the key to agility because it too believes that change is a natural part of the life of an organization and without demonstrating it, the organization will cease to exist.

The challenge then is not to constantly change but to be able / able to do so with agility at the most opportune moment, and instantly identify what to change and what to abandon. The interest is in being able to predict or select the types of personalities that match the needs and culture of the organization, as well as in fostering teamwork and productivity.

3. **Integrate change into your daily life**

Change is a natural part of the life of an organization. In view of the generational issues encountered in companies, it is useful to underline that change is, on the contrary, an inherent part of an individual's expectations and of his willingness to learn and evolve, and it must be the same for organizations in which individuals operate.

4. **Determine metrics to monitor and guide**

The definition and monitoring of indicators or metrics, through the use of tools for traceability and monitoring of current and future implementations, make it possible to identify investment opportunities and therefore prioritize actions in the management plan change, through the establishment and use of dashboards.

The use of metrics is the central element in the evaluation of the efficiency of the implementation of the change because this practice is at the same time factual and precise, allowing to follow the attitudes and the behaviors of the individuals vis-a-vis the change in course in order to make any adjustments to its implementation.

5. **Build a cohesive culture**

The establishment of partnership relations through the identification of converging interests in order to promote mutual assistance makes it possible to alleviate the fear of change of some managers, unable to accept change when the mode of operation has been proven.

The notion of social process should be understood here as a means for an individual to extract a particular meaning from the interactions he maintains in the context of a social activity before reintroducing them according to their understanding and perception within the system. This process of interactions or interactive repeats itself over and over again regardless of the individuals involved.

The prerequisite for the implementation of the collective mind remains that special and equivalent attention must be paid to social processes and the principles of micro dynamics (or dynamics of individuals) than to structure, strategy and population indicators.

CONCLUSION

Following the findings previously established, our participatory observations have also highlighted that the implementation of an agile organization can improve the resilience of entities in the Defense Industry, on three distinct levels. Still the use of hybrid modes ought not to be generalized in a standardized fashion but rather more via a targeted approach matching specific business needs.

First, from a structural point of view, the implementation of an agile organization constitutes an opportunity in front of the inequity of treatment not taking into account the specificities of the services and the lack of interaction between all the stakeholders such as 'it was tackled. This makes it possible to move from a silo structure to a circular organization placing users at the heart of the device. Thus, the principles of co-responsibility and autonomy will ensure that everyone accepts their share of responsibility and will in fact ensure more efficient management, which is a major deficiency in the conduct of Defense Industry projects. The implementation of an agile organization can finally transform the links between the entities in order to adapt them to the changing reality on the ground and allow them to evolve at the rate of the evolving needs of the users.

In addition, in terms of information, the implementation of an agile organization allows the passage from a posture of passivity of the administration to the establishment of an active network of relays of change management: be agile it is being reactive and proactive to learn quickly through rapid and iterative cycles. Faced with the evolving and multifaceted nature of threats, the implementation of an agile organization is essential to experiment more and more quickly with new modes of action.

Finally, on a collaborative level, the foundation of the agile approach, collective intelligence, is a useful means of dealing with the cultural compartmentalization resulting from the institutional DNA. Indeed, adopting the collaborative mode by mobilizing all stakeholders from the start of the project (departments, users, representatives, etc.) is essential to drive innovation, bring resilience, value and overall consistency between the constituent entities / departments of the Defense Industry.

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