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ABSTRACT

Using action research methodology in a clinical mode, we apply agile techniques to the strategy-making activities of a government organization. This organization faces immediate needs for better digitalization strategies. We modularized their strategy into four modules and constructed an original strategy using five agile-inspired sprints. The results showed that agile management of strategy requires iteration with agile management practices that will execute the strategy. Also, those new to agile strategy management need careful preparation and training to construct their teams. Team members also need the backing of a peer network to succeed. Further, agile management of strategy is a promising management advance for organizations in unstable and disruptive environments; and also an attractive strategy-making alternative for managers who must cope with digitalization among their partners. Overall, it offers organizations the possibility for a higher level of agility.

Keywords

Agile, strategy, digitalization, action research

INTRODUCTION

Much has been researched and written about the nature and achievement of agility in organizations. Recent work along these lines has been driven by the rising importance of organizational resilience in the face of massive disruptions, such as the COVID-19 pandemic. There is a segment of this literature that researches strategies for achieving such organizational agility. There is also a body of research that regards techniques or methods for developing, designing, and managing strategies. But there is a comparative gap in the literature when it comes to using agile principles, techniques and methods to develop, design, and manage strategies.

Perhaps the need for agile management of strategy was unneeded in past business settings where earth shattering changes were rare. But in today's turbulent environments, basic business strategies may be obsolete moments after execution begins. Our practices and theories regarding the formulation of organizational strategies may have become equally obsolete.

The occurrence of disruptions in an organization's environment is by no means a new phenomenon. But the rate of disruptive events is steadily increasing. In response, the need for changes in strategy is growing more frequent. Instead of incurring the occasional shift from exploration to exploitation (March, 1991), organizations began to experience change as a punctuated equilibrium (Lyytinen & Newman, 2008). As imperative change grew more frequent, organizations required balanced capabilities for exploration and exploitation: ambidexterity (Tushman & O Reilly, 1996). Now, in large parts of the contemporary economy, the frequency of disruptions has grown to become constant: the usual rather than the exception. In the context of constant disruptions, organizations must learn to develop dynamic capabilities to rapidly adapt in a continual state of an unstable equilibrium (Fischer & Baskerville, 2023). Today, organizations not only need the capability to be dynamic and agile in executing their strategies, they need the capability to be dynamic and agile in continuously formulating and reformulating their fundamental strategies. We know agile strategy execution; the knowledge gap is agile strategy formulation.

The purpose of this paper is to discover the effects of applying agile project management techniques in the strategy formulation process. We can phrase it as the following research question; How can an agile strategy be formulated? We take an action research approach to introduce agile concepts and methods into the information systems strategy management process in a government organization with needs to rapidly adapt itself to mandated technological change.

STRATEGY AND AGILITY

Research in strategy can be a bit difficult to frame. In common parlance, the OED defines strategy as, "A plan, scheme, or course of action designed to achieve a particular objective, esp. a long-term or overall aim." Mintzberg (1977, p. 28) defined strategy as "a deliberate, conscious set of guidelines developed in advance of the specific decision to which they apply. In common terminology, a strategy is a *plan*" (emphasis original).

The major and direct theoretical assumptions underlying agile management of strategy include fundamental concepts of agility and of strategy, concepts of strategic agility (agile strategy) and management of strategy. These are overlapping concepts that are sometimes difficult to pick apart. The literature usually treats strategic agility and agile strategy as synonyms. Strategic

agility encapsulates the idea that an organization is strategic in its mindful development of an agile organization (Weill et al., 2002). This mindful deployment is itself described as an agile strategy (Qi et al., 2011). Hence the synonymity. Our work here regards techniques and methods for the creation of strategies: their design and development. The term usually applied to creation of strategies is strategy formulation, or more comprehensively such planning and control of strategies themselves is called management of strategy (Munive-Herandez et al., 2004). For the purpose of the theoretical background in this paper we will be as explicit and clear in our adoption of these broadly used concepts.

Agile refers to "the ability to react quickly, as well as the ability to adapt to new conditions as a response to surprising and unpredictable changes in the market environment" (Rzepka & Bojar, 2020, p. 383). It is best known in the information systems field because of the massive impact of agile software development in the early era of electronic commerce (Baskerville et al., 2003). But it originated in the field of agile manufacturing, and spread to many business competence areas including business agility, enterprise agility, agile organization, agile workforce, agile supply chains, etc. (Kettunen, 2009)

Agile methods proliferated to serve the needs for high-speed software development; some of the best known include Scrum, Lean Software Development, and XP. These methods are gradually migrating beyond software development as general project management methods; and presented a likelihood of migrating to other management arenas (Almeida & Espinheira, 2022).

Dynamic capabilities are "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al., 1997, p. 516).

STRATEGIC AGILITY AND AGILE STRATEGY

"Strategic agility is defined by the set of business initiatives an enterprise can readily implement." (Weill et al., 2002, p. 61). There is a substantial overlap between strategic agility and dynamic capabilities, e.g., "strategic agility, the ability to remain flexible in facing new developments, to continuously adjust the company's strategic direction, and to develop innovative ways to create value." (Weber & Tarba, 2014, p. 5). Strategic agility is sometimes couched in terms similar to punctuated equilibrium. The scale of continuous disruptions is small or midsize such that responsive organizational changes are operational in scope. Strategic agility arises when there is a periodic "golden opportunity" for significant value creation; seizing "game changing" opportunities embodies strategic agility (Sull, 2009, p. 83).

Sull (2009) describes the three capabilities that characterize organizational agility:
1. Operational agility: a capability to quickly identify and seize opportunities without reorienting the business model.
2. Portfolio agility: a capability to quickly reallocate resources from existing unfavorable business lines to favorable new opportunities.
3. Strategic agility: a capability to identify and rapidly seize powerful opportunities.

Similarly, Wade et al. (2022, p. 108) characterize three capabilities of an organization with strategic agility, a combination called "the Triple A's of strategic agility":
1. Nimbleness: able to avoid the worst impacts.
2. Robustness: able to absorb a lot of the damage
3. Resilience: able to accelerate faster and more effectively than competitors

Management of Strategy

The strategy-making process, *strategy formulation*, has a long history. However, this notion became associated with a process by which strategies were formulated at the top of the organization and implemented at lower levels. Mintzberg (1977) regarded this as a false dichotomy, because strategy formulation is immensely complex and multilevel. Even in the 70s Mintzberg saw strategy formulation as a life cycle: conception, development, decay, and death. But within this cycle was an internal, periodic iteration of change and continuity. In Mintzberg's time, strategies did not commonly exhibit continuous change; rather, change took place in spurts.

In later work, Mintzberg adopted a more critical stance toward strategic planning; an oxymoron because a logic of synthesis is needed to pull together such a plan from the incredibly diverse range of data, stakeholders, visions, etc.:

> "The fundamental fallacies of planning – what we believe to be the real reasons for the failure of strategic planning. We discuss the fallacies of predetermination (predicting the future), of detachment (of strategy from operations and managers from the things they are supposed to manage), and, ultimately, of formalization [(that strategy formation can be formalized)], all of which amounts to the grand fallacy: that analysis can produce synthesis" (Mintzberg, 1994, p. 33)

Despite the false dichotomy and the known fallacies, ABII lists hundreds of papers about strategy formulation, including more than 150 in the first four years of the current decade. (Other terminology includes strategy-making or strategy-setting.) For

example, current practices regard management of an organization's strategy as a long process, thoughtfully based on research, documentation, and extensive meetings with stakeholders. Such a process is necessary because it sets organizational goals, policies, and action sequences (including who makes decisions and when).

While the agile content of strategies has been of intense interest, the process of strategy-formulation, strategy-making or strategy management has generally remained plan-driven, static, and archetypical (Miller & Friesen, 1978). Based on experience in a wide variety of cases, more recent work in lean strategy, which intends toward agility, is not that far distant from Mintzberg's cycle-in-cycle: "The lean strategy process integrates the bottom-up approach of the lean start-up with the top-down orientation of strategic management. In an iterative fashion, the venture builds new capabilities and revises the original strategy in response to what it learns." (Collis, 2016, p. 65) Nevertheless it combines traditional strategy with lean startup practices. See Figure 1.
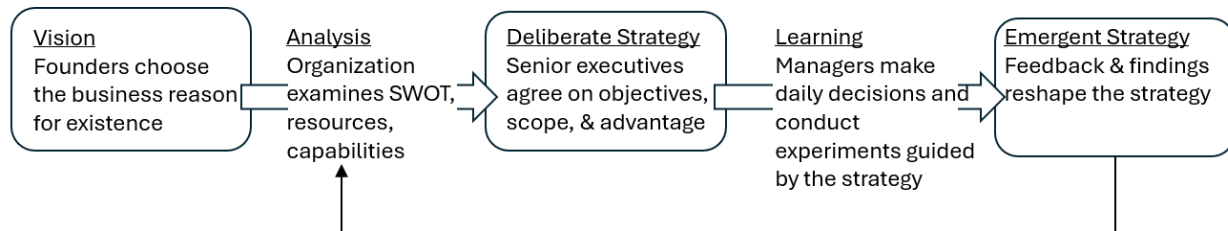

Figure 1. Lean Strategy (adapted from Collis 2016)

While lean strategy is a strong step in the direction of agility, it still suffers from Mintzberg's fallacies because it incorporates traditional strategic analysis. There are however, essential, recent advances. In advances toward agile management of strategy. Based on a comparison of successful and unsuccessful cases, Wade et al. (2022) include a proposal that describes six principles for *making* an agile strategy. While not a full methodology, these are imperatives or design principles for the process; a kind of strategy-making agile manifesto (From Wade et al., 2022, pp. 109-110):

Principle 1: Prioritize speed over perfection.
Principle 2: Prioritize flexibility over planning.
Principle 3: Prioritize diversification and "efficient slack" over optimization.
Principle 4: Prioritize empowerment over hierarchy.
Principle 5: Prioritize learning over blaming.
Principle 6: Prioritize resource modularity and mobility over resource lock-in.

RESEARCH METHOD

We adopted an action research method (Baskerville, 1999; Davison et al., 2004) in response to an invitation from a Danish Municipality to assist the Municipality in rapidly developing their digitalization strategy. The client-system infrastructure included a consulting contract with one of the authors of this paper; the organizational interface was their Digital Steering Committee. The contract engaged one cycle of action research; aligning well with a clinical perspective in field work (Schein, 1987).

Haderslev municipality (hereafter Haderslev) is situated in the southern part of Denmark. Fifty-five thousand people live in Haderslev and the municipality covers 814 km^2. The largest city is also named Haderslev with around 22000 people living in the city. There are 20 other cities and villages in the municipality each having more than 200 inhabitants.

In the fall of 2021, Haderslev had realized that it needed a digitalization strategy. There have been other strategies for the municipality in the past. Most of them have been only partly used; especially because events happened that were unforeseen in the strategy. For example, many of their strategic plans were overturned by the Covid-19 pandemic.

In January-February 2022, two consultants from the Danish Municipality Association ("KL") carried out a maturity assessment of digitalization in Haderslev. The results indicated that the municipality was at a low maturity level. With the help of the consultants, Haderslev formulated a vision of attaining maturity level 4 using Pernille Kræmmergaard's maturity levels (Kræmmergaard, 2021).

The action research engagement with the municipality began in late fall 2022. An author of this paper was the primary action researcher. The express goal was to define a digitalization strategy for Haderslev municipality.

THE CLINICAL ACTION RESEARCH ENGAGEMENT

Canonical action research consists of a formulation of the client-system relations and four stages: action planning, action taking, evaluation, and the specification of learning (Susman & Evered, 1978). While canonical action research is typically iterative; when used in a clinical mode, it will sometimes engage in a single cycle (Baskerville & Wood-Harper, 1998).

Client-System Infrastructure

The action research began with a meeting with the Digital Steering Committee in Haderslev. This committee included the majority of key stakeholders that needed to be considered in relation to developing a digitalization strategy. The purpose of this steering committee was defined as follows: "The steering committee must ensure a strategic direction and movement - in cooperation with the administration, so that Haderslev Municipality increases its digital maturity and develops its mindset in relation to using new technologies and developing business models that directly contribute to increased growth and welfare and the goal of being in generation 4 in selected areas in 2025".

At the meeting, the consultancy report from KL was presented. There was a brainstorming session focused on the vision and possible actions to include in a digitalization strategy. The 10-12 different ideas for a vision were voted on using a technique called dot-vote. The results were the following five highest prioritized goals (in order):

1. In Haderslev municipality, all employees have digital training.
2. In Haderslev municipality, it is safe to use digital.
3. In Haderslev, digital technology helps to make the municipality attractive.
4. In Haderslev municipality, we use data wisely.
5. In Haderslev municipality, we offer citizens the option of a digital first choice.

At the same meeting, the Digital Steering Committee entertained a proposal that Haderslev undertake an agile strategy management process. The rationale for the proposal was (translated from slides used at the meeting):

- Traditional strategy relies on exploration, documentation, and long meetings to create intricate plans.
- Agile management of strategy is based on the fact that we cannot possibly know everything in advance, and therefore we should design strategic plans that are intended to adapt, evolve, and respond to new information.
- Some of the basic agile principles used are to only make the minimally acceptable ("minimum viable product"), and to make the strategy divided into modules, so that it is as easy as possible to change a module.
- It may be relevant, for example, to change a "module" (= part of the strategy) because new knowledge has been gained, new decisions have been made—for example in the steering committee.
- There has been influence from outside (laws, executive orders, joint municipal strategies).

This proposal was accepted. A contract for an action research project was signed between the university of one author of this paper and Haderslev Municipality.

Action Planning

An analysis of existing literature on agile management of strategy, with special attention to the Agile Manifesto (Beck et al., 2001) elicited the following principles to follow in Haderslev:

1. A very fast process: 6 weeks from the beginning to a digitalization strategy document was ready.
2. An intensive involvement of users. The Digital Steering Committee became involved through a workshop in November 2022, and all department managers (five in Haderslev) were involved in week 1 of the 6 through interviews focusing on their needs.
3. Co-creation of the strategy document by a group of three, two from Haderslev municipality and the action researcher (author of this paper) from a university. Biweekly working meetings with the manager responsible for IT and digitalization in Haderslev.
4. The strategy document should be portioned into modules with low coupling and high cohesion. Low coupling means that the modules are as loosely connected as possible; it makes a module text simple, flexible, and robust. High cohesion means that within each module all parts have as much in common as possible. This coupling/cohesion characteristic is a venerated principle in structured design (Yourdon & Constantine, 1979).
5. Four modules were planned for the digitalization strategy: (1) Overall strategy and vision; (2) Governance, (3) Enterprise architecture and IT security; (4) Execution of strategy

The first three principles are derived from agile values speed and user involvement. The module content descriptions are derived from simple, tiered agile architectures. These were then used to create a 6-week plan; essentially 1-2 weeks for formulating each module, plus one week to finalize the strategy document.

Action Taking

The rapid development of each module was organized around three meetings. The first was *inspirational:* highly creative brainstorming about possible answers to the interrogatories. The second was *decisioning:* sorting through the possibilities and choosing feasible ideals. The third was *writing*: expressing visions in a formal, concise, and politically sound fashion.

Evaluation

This process took place from 3 January 2023. In relation to the plan the process was delayed by one week because of winter holiday (official school holiday). However, at the end of February the resulting Digitalization strategy was presented to the steering committee by the action researchers. The strategy was received very positively by the Digital Steering Committee. They were impressed that a digitalization strategy document was developed so fast. While the action research project formally ended in March 2023, enduring strategy use by the municipality since then diminished the likelihood of any Hawthorn effects.

SPECIFYING LEARNING

After summer 2023 all key stakeholders were interviewed by two graduate students writing their master thesis. Interview transcripts together with all the documentation were used as our empirical basis for an analysis yielding five lessons-learned. This process provides a form of generalization from empirical statements to theoretical statements (Lee & Baskerville, 2003)

The *first (and main) lesson learned* was that agile management of strategy requires agile management practices that will execute the strategy. Otherwise *bugs* in the strategy will not pop up quickly enough to influence the *second (and subsequent) release* of the strategy. So, the agile management processes ended too early.

The *second lesson learned* was that developing the agile strategy document in only six weeks may be too fast. The Head of IT and Digitalization in Haderslev had the following comments about the 6-week process. "It is positive that you are held to the fire and therefore do not lose knowledge of what you are doing". However, on the more negative side was that it "creates enormous pressure. One doesn't have much preparation time". In relation to that one of the employees engaged as action researcher speculated: "If you hadn't made these sprints so short, it could also have been exciting to involve the regular employee"; suggesting those new to agile strategy management need careful preparation and training to construct their teams.

The *third lesson learned* was that a more active engagement of the Department head level would have been preferable. One of the employees from Haderslev – and one of action researchers – says: "…you can be a bit doubtful along the way because you are kind of showing off … having to decide how people should do things. One may well think that – maybe – there is a director or boss who had some opinions". Another reflective comment from the same employee says: "If managers and directors want to be involved in the process, then it must also be realistic and they must prioritize it. Or the process must be moved so that they can be involved". Especially the owner of the whole process needs to be committed.

The *fourth lesson learned* was that using an agile management of strategy is probably the right thing to do given the circumstances and context given in a municipality. Looking back at the process the Head of IT and Digitalization says: "I became convinced of the right thing to do is an agile strategy - mostly in relation to the fact that we can constantly and continuously do something about new things that turn up, e.g. data policy, digital exclusion, i.e. the topics that are not captured in the first place." It seems that the practice of agile management of strategy is an advancement toward coping with the unstable and disruptive environment that accompanies the use of information technologies.

The *fifth lesson learned* is that everybody would do the agile management process again. "It has been a super exciting process. You also develop personally and gain an insight into the administration, which can be used in the future", says one of the digitalization consultants from Haderslev that worked as an action researcher in the intensive 6-week period.

The process of adapting agile project management techniques to the management of strategy also provided insights into the adaptability and portability of agile techniques. For example, the concept of the sprint worked well in developing each module.

DISCUSSION AND CONCLUSION

We contribute practice-based research that introduces agile strategy formulation into an organization in need of a rapid response to a disruption. It is ground-breaking in the sense that previous work is theory development that is solution-focused, case-based, descriptive, and analytical. Further, it sheds additional light on the applicability of agile-inspired techniques in a government setting. Our results are problem-focused, action-based, interventional, and synthetical. Our theoretical results indicate that the effects of applying agile project management techniques in the strategy formulation process provide an avenue to better

organizational agility. They suggest promising outcomes from using agile techniques, not just as a strategy, but also as a process to make strategy. From the clinical, action research study above, there are initiation issues that suggest organizational learning is required as a startup measure when shifting to agile management of strategy. The study also reveals that such an approach is a possible advance toward a higher level of organizational agility. Such a higher level of agility may be key in coping with the unstable and disruptive environments that are enveloping organizational futures.

Future research may include a case study of agile management in another organization. A deeper analysis of team dynamics and interpersonal aspects in agile strategy-making. And a discussion of what the role of agile management is, especially in the disruptive age/digital age?.

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