Keeping the Momentum: Driving Continuous Improvement After the Large-Scale Agile Transformation

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Keeping the Momentum: Driving Continuous Improvement after the Large-scale Agile Transformation*

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Abstract. The Scaled Agile Framework (SAFe) is currently the most popular framework to scale agile development to large projects and organisations. An organisational transformation to SAFe is usually driven by a Lean-Agile Centre of Excellence (LACE). What happens to the LACE after the initial transformation is over? How does the organisation keep improving? In this single-case study we investigated how the volunteer-driven LACE in a Nordic bank, Nordea, drives continuous improvement long after the organisation's transition to SAFe. We collected data by 10 semi-structured interviews and several observations. We found that the LACE at Nordea drives continuous improvements by working in a Scrum-like fashion: it uses Product Owners, maintains a backlog of improvement features, works in sub-teams to identify and solve issues, and meets once a week to coordinate and share between the sub-teams. The LACE consists of volunteers, which is an advantage as changes are identified and implemented by the same practitioners who experience the need for them. However, this volunteering model is not without challenges: the LACE lacks the formal mandate to implement the needed changes and other work takes priority for the participants.

Keywords: Scaled Agile Framework · Continuous Improvement · Lean-Agile Centre of Excellence · LACE · Large Scale Agile .

1 Introduction

Agile development is rising in popularity. With many companies adopting digital solutions to meet the rapidly changing needs of customers [10], even large organisations are shifting to agile methods to deliver value quickly and cost-efficiently [24]. The reported benefits of agile software development methods include increased flexibility, quality, and faster delivery speed [16]. Adopting agile in a large organisation is not an easy feat, and requires a significant change in the culture of the organisation, which takes time, commitment, and customisation [7, 5]. Several frameworks for scaling agile exist [27], the most popular of

* Supported by Nordea.

which is currently the Scaled Agile Framework (SAFe) [24]. In the 2020 annual State Of Agile Report [24], 35% of respondents reported using SAFe. The SAFe framework is extensive: it describes the required roles, processes, values and an implementation strategy for transitioning to using SAFe [22]. At the heart of this transition is the Lean-Agile Centre of Excellence (LACE), responsible for starting the behavioural and cultural transition across the organisation, and removing impediments for achieving these goals [22]. However, what happens to LACE after the initial transformation is over? How does the organisation keep improving? Continuous improvement is essential to agile, and one of the principles of the agile manifesto [1]. The agile transformation is often called a *journey* that does not end after the initial transformation is over, but will continue in the form of continuous improvement through self-inspection and reflection. The SAFe framework does not specify how the continuous improvements should be driven, who should be driving them, nor what exactly the role of LACE should be. The SAFe lists the typical responsibilities of LACE, which include also *"helping to establish relentless improvement"* [22]. In this study, we investigate how such a continuous improvement journey is driven by a LACE in an international Nordic bank, Nordea [4].Their transformation to SAFe started in 2015, and the first LACE was installed as a part of the second wave. After reaching its transformation goals it dissolved, leaving an open gap for a central change-driving organ. In 2019, this space was taken up by a growing grassroots movement in the development organisation, reinstating the LACE and starting new improvement initiatives necessary to drive the organisation to a higher degree of organisational agility. Thus, the new LACE was formed as a relentless group of volunteers within the organisation insisting on a continuous change in the late state of transition. Without any given mandate, this volunteer-driven LACE is attracting change-hungry people, and raising new questions and opportunities surrounding the role and the boundaries of the LACE. In this paper, this nontraditional take on a LACE will be examined, described, and compared to its traditional LACE counterpart, change management theory, and empirical evidence in an attempt to describe this case-specific phenomenon and identify areas of improvement. The current research on large-scale agile has focused on the adoption of agile, the challenges faced and the benefits gained [5, 19]. However, little research can be found on how "fully" transitioned agile companies keep continuously improving after the initial transition is over. With this paper we start filling in this research gap.

2 Background

2.1 Scaled Agile Framework (SAFe)

The Scaled Agile Framework (SAFe) is an extensive framework to scale agile practices to large organisations by expanding on existing team-focused methodologies and adding program- and portfolio layers to provide means to manage

[4] https://www.nordea.com/en

larger delivery organisations consisting of multiple agile teams. The framework provides definitions for various roles and details mechanisms to align and coordinate teams' efforts to develop solutions and maximise business value. On the team level, SAFe agile teams blend agile practices as they wish, typically using elements of Scrum, Kanban, and Extreme Programming [13]. In SAFe, teams use the roles, events, and artefacts of Scrum as defined in the Scrum Guide [23] to deliver working software in incremental, iterative cycles. Teams working on the same solution are organised in Agile Release Trains (ARTs), long-lived collaboration groups between teams and stakeholders[13]. Each ART coordinates development efforts through Product Increment (PI) Planning events.

When transitioning to SAFe, one element of the recommended SAFe Implementation road map is the LACE [22]. A LACE consists of a small team of dedicated, full-time change agents working to implement the SAFe Lean-Agile working methods. The LACE serves as a focal point for activities that power the organisation through the changes [13]. The responsibilities of a LACE according to Knaster and Leffingwell [13] include: 1) communicating the business need, urgency, and vision for change, 2) developing the implementation plan and managing the transformation backlog, 3) establishing the metrics, 4) conducting or sourcing training for all, 5) identifying value streams and helping define and launch ARTs, and 6) providing coaching and training. Knaster and Leffingwell [13] point out that a LACE is one of the key differentiators to look for when determining whether companies are fully committed to practising Lean-Agile. According to Knaster and Leffingwell a LACE often evolves into a long-term center for continuous improvement after the initial transition, as becoming a Lean-Agile enterprise is an ongoing journey rather than a destination. For smaller enterprises, a single LACE may be sufficient to support the development organisation, whereas larger organisations may consider either multiple, decentralised LACEs or a hub-and spoke model where multiple LACEs are organised by a central hub. [13]

2.2 Related Research

In their literature review on agile methodologies, Dingsøyr et al. [6] found that since the introduction of the Agile Manifesto [1] in 2001, significant amount of research has been done in the area of agile software development, while a clear rise in the number of studies took place after 2005. The majority of the studies concentrate on agile practices and methods [11], or attempt to further understand the agile concepts (e.g. [4, 9]). While some progress has been made in these areas, agile software development is yet to find a common standard for the central challenge of combining research rigour with industrial relevance [11], as many important topics have not yet been fully explored. One topic requiring further research is large-scale agile and the different scaling frameworks [27] as their popularity in the industry keeps rising, but research is lacking behind [5].

Recently, several studies have pointed to *organisational culture change* as a challenge when scaling agile practices to large organisations [5, 15, 18, 19]. Inspiration to solve this challenge may be found in change management and organisa-

tion theory. Chia [3] introduces the notion that organisations are constantly in a state of "becoming", to describe the continuous process of defining and redefining organisations as living and constantly changing entities. In this view, change is not an exception but a rule, and thus the approach to change in this view is more concerned with the large impact of small changes over time than changing quickly to a new state. Tsoukas and Chia [26] describe how microscopic change should have theoretical priority for organisational scientists: *"Such change occurs naturally, incrementally, and inexorably through "creep, "slippage" and "drift", as well as natural "spread""* [26]. Feldman [8] similarly argues that routines can be instrumental to continuous change in any organisation as long as humans are doing them because the embodied knowledge from routines is a process of organisational learning. In this view, change, as a constant and never-ending process, bears a resemblance to the *continuous inspection and adaptation* mechanisms agile methods emphasise as means to improve incrementally.

SAFe recommends a transition based on the 7-step process introduced by Kotter [14], a strategy for realising a stated vision by implementing deliberate changes by changing systems and structures supported by a powerful guiding coalition. If we compare the approaches to change of Kotter [14] and Chia and Tsoukas [3] to the change process ideal types introduced by Huy [12], the Kotter-inspired SAFe approach resembles what Huy describes as a *commanding intervention*: a direct, abrupt and rapid change strategy, with little attention to the organisation's internal capabilities or individual issues, driven by a small group of people typically from the top of the hierarchy, aided by external consultants [12]. The remaining intervention ideal types by Huy [12] are *engineering, teaching*, and *socializing*. Each type is compared in 3 temporal, and 8 non-temporal categories, identifying the underlying theories, change agents, and diagnostic models. The SAFe framework has turned out to be popular especially in the finance industry [21]. Experience reports on transformations to SAFe can be found from the SAFe website [22], while academic literature includes, e.g., case studies on transformations [20] and challenges faced [25] in the finance industry. However, to our knowledge no research exists specifically on one of the central elements of SAFe, the LACE. With this single-case study we start exploring the role and implementation of LACE in practice.

3 Research Method

3.1 Research Goals and Questions

As no other studies describing experiences on using LACE have been identified, this single, exploratory case-study [28] aims to investigate how LACE drives continuous improvement in a case organisation by answering the research questions:

1. How has the LACE changed over time?
2. How does the LACE work?
3. How does the LACE influence the organisation?
4. How can the LACE improve to inspire and facilitate change?

3.2 Case organisation

Nordea is an international bank servicing household- and corporate customers with nearly 200 years of history. Nordea offers personal and corporate banking services such as transaction services, investment services, loans, mortgages, and asset management to customers via online and offline platforms in 20 countries, employing 28.000 people [17]. Nordea started the using agile around 2010 and their SAFe adoption journey started in 2015. Currently[5], the software development organisation operates over 100 ARTs with sites in several countries. Nordea's transformation to agile cascaded from country to country, supported by agile coaches and facilitated by external consultants.

3.3 Data Collection

Interviews: We chose semi-structured interviews as the main data collection method as we wanted to dive deep and explore a new topic [28]. Answering questions of *how* is a known strength of qualitative interviewing [2].

Table 1. Interviewees

LACE role	Role outside of LACE	Years in Nordea	Interview
Product Owner	Line-Manager	35	85 min
Product Owner	Line-Manager	7-8	60 min
Product Owner	Expert in Continuous Improvement	3	80 min
Active LACE Attendee	Scrum Master	N/A	60 min
Active LACE Attendee	Release Train Engineer	4	60 min
Active LACE Attendee	Agile Coach	5	60 min
Active LACE Attendee	Release Train Engineer	7	60 min
Active LACE Attendee	Release Train Engineer	9,5	60 min
Non-LACE Member	Product Manager	6,5	60 min
Non-LACE Member	Business Area Tech Lead	2,5	60 min

We interviewed ten persons as listed in Table 1. As the first interviewees we chose all *LACE Product Owners* due to their central role. The *LACE attendees* were invited to volunteer for the interviews to share their experiences of working in the LACE. To provide an outside perspective on how the LACE work impacts and is seen by other Nordea employees, we asked our Nordea contact persons to identify a few *non-LACE members* having some knowledge of LACE, but not participating in LACE work. Five volunteered LACE attendees and two non-LACE members were interviewed. We created interview guides for all three "roles". The questions common to all interviewees are listed in Table 2. The guides were kept flexible, using preliminary results of the previous interviews to

[5] in July 2021

determine areas of interest worth adding to the following guides. The Product Owner interviews sparked more questions for the later groups, e.g., a Product Owner indicated LACE being empowering, which was added as a question for all attendees. In addition to the general questions, Product Owners were asked about the origins, the goals and the development of LACE, the backlog, and the LACE Product Owner role. The LACE attendees were asked about the LACE features they had been working on and the experienced challenges and successes. Additional interview questions can be found on Figshare[6]. All interviews were conducted online using Microsoft Teams or phone due to Covid-19 restrictions.

Table 2. General interview guide.

Theme	**Question**	**RQ**
Background	Work experience, education, previous roles	
Background	Role outside of LACE	1
Background	When did you join LACE, and what were you hoping to achieve?	1,2
Current work	How do you go about implementing this particular change?	3
Current work	Are there any backlog items you have had for a long time or cannot seem to solve?	2,3
History	What did you think about LACE before you joined?	3
History	Tell me about the achievements LACE has positively impacted the organisation in the past?	2,3
History	Have there been any transformation efforts you have had to give up on because it could not be done?	1,3,4
History	How has the backlog evolved over time?	2
History	How has the way you work in the LACE evolved over time?	2
Improvements	What is the biggest challenge the LACE is facing right now?	1,3,4
Improvements	Do you think you have the right resources to drive the transformation backlog?	3,4
Improvements	If you could change anything about the LACE for the better, what would it be?	4

Observations: As Brinkmann [2] notes, other data sources apart from interviews, such as observations, documents, and objects, are essential when researching social and cultural phenomena to get a complete picture of the object of interest. To understand how the LACE works is a partially observable process in the meetings between LACE attendees. Therefore, nine weekly LACE meetings of 30 minutes with 7-9 participants were observed during a period of two months. Additionally, three other meetings were observed: a one-hour feature sub-team weekly meeting, a one-hour LACE PI planning meeting that established the focus areas and OKRs for the next 3-month iteration, and a 40-minute sub-team feature planning meeting during which 15 participants identified root causes of the observed challenge, planned feature scope and coordinated practical work.

[6] https://doi.org/10.6084/m9.figshare.16729000

All observed meetings were conducted online in Microsoft Teams. The observer took detailed notes, e.g., regarding the current status of each discussed feature, and the challenges discussed.

3.4 Data Analysis and Validation

All interviews were transcribed and coded by the first author after reaching agreement of the coding labels with the second author. The relevance of interview segments and notes were marked to each research question, while RQ2 was split into multiple categories (goals, tools, and resources). To validate our findings, a Nordea representative, active in LACE, reviewed the article and gave a written consent for publication. [7]

4 Results

4.1 RQ1: How has the LACE changed over time?

The First Nordea LACE: Nordea did not create a LACE in the early stages of the transition to SAFe, as suggested by the SAFe road map [22]. Instead, the LACE was established sometime after the initial SAFe transformation, as a part of the move to take the next step, referred to by one interviewee as part of the next wave - *Agile 2.0*. Another interviewee notes that the need to standardise work and run the same cadence across the entire development organisation gave rise to the first instance of the LACE. A third recalls that the LACE was known by a different name in the beginning, consisting of line managers especially from Agile Execution, Architecture, Product Ownership, and the Transformation Office. The improvement backlog, which agile coaches helped to carry out, was kept in this closed forum. Following a re-organisation, the first LACE group dissolved.

The New LACE: A new, less-centralised LACE rose around 2019, initiated by one of the current Product Owners. It was intended to be a community of practitioners consisting of volunteers who would contribute their experience, time, and knowledge to identify areas of improvement and remove systemic impediments. The LACE relies on goodwill to collaborate across teams and ARTs to improve the ways of working and promote organisational agility. Without official mandate or dedicated resources, the practitioners facing day-to-day struggles of agile development band together to gain support to solve them for the good of all. According to a LACE Product Owner the volunteer-based model was a deliberate choice to avoid resistance from the cost-conscious management team with an intention to prove the value of the LACE with results. However, this choice has its advantages and disadvantages. According the Product Owner, one such advantage is avoiding the closed group or *ivory tower* that the first instance of the LACE appeared to be, and that everyone wanting to improve the system has a chance to do so. However, a disadvantage is not having dedicated resources, such as a coach or coaches, to help implement the changes needed.

[7] Due to an active Non-Disclosure Agreement between the researchers and Nordea, all data used for this research project is protected from sharing.

"We were in a position at that point in time where we were cutting costs - cost-conscious. [...] And the plan was to show that the LACE can drive things, that it will, it can implement systemic changes. And then, from there, see if we could get an allocation to drive more. [...] And also, personally, I like the model where you engage people, and where everybody has a chance to be part of it, and it's not just the ones who are appointed to be part of the LACE." — LACE Product Owner

Now that everyone was invited and encouraged to raise their issues, 20-30 people showing up with each their own agenda resulted in a scattered collection of small things with no sense of direction. According to a Product Owner, addressing them all was impossible with the limited capacity of the volunteers and no mandate to impose changes. With plenty of ideas for improvements but little concrete results, this "circle of friends" shrank. All three Product Owners find this time as a significant turning point for the newly re-instated LACE with much to prove. The third PO joined the LACE, leading to the realisation that the backlog of improvements lacked clear direction and was full of disorganised or abandoned ideas. The POs visualised every backlog item as a post-it, grouped them on a large office wall, and were overwhelmed by the amount of work it would take the LACE group to change everything described on the wall. Thus, the Product Owners concluded that a severe *clean-up of the backlog* was needed and a much more directed approach was essential to achieve a sense of focus for the upcoming work. Surprisingly, the backlog clean-up did not result in angry and overlooked LACE participants, as many had left the LACE behind.

4.2 RQ2: How does the LACE work?

Overall Goals: The Product Owners have defined the overall goals of the LACE to be: *1) relentless improvement, 2) cross-organisational scope, and 3) increased customer focus*. At the heart of the LACE work lies continuous improvement for the organisation. The LACE seeks to attract people looking for a positive change for themselves and their colleagues and provides a place to find support and help each other to achieve the changes they want to see. This overarching theme came up repeatedly during the interview process, highlighting its importance. A Product Owner sees the LACE as an opportunity to experiment and solve complex problems in innovative ways, and expresses that other people may have felt compelled to join the LACE after being inspired by the passion the people in the LACE show for wanting to change and improve. A LACE attendee emphasises that it is the practitioners who are enabled to help themselves and implement their own solutions to the problems they face. Currently, there is no other way for the sub-units, such as a team or an ART, to take systemic issues forward. Thus, an explicit goal of the LACE is *making visible and attempting to implement cross-organisational improvement efforts at Nordea, which no sub-unit alone can easily solve*. All three LACE Product Owners highlight this overarching goal emphasising that these changes should be achieved in collaboration across all units.

"We are not interested in sub-optimising problems in some specific area only. And typically, there's not many problems, which are specific to some area only. [...] If

there's no vehicle, these problems stay inside those silos, because there's no way to raise them up. So that's, of course, the way to provide this vehicle where you can raise and then what this vehicle tries to do is exactly, we talk about systemic issues." — LACE Product Owner

Another focus point is a more *customer-centred approach to development*. A strong domain-focus combined with an extensive organisational structure that is still somewhat hierarchical and bureaucratic poses a significant barrier for a few members of the LACE working deliberately to increase the focus on one thing everyone in the organisation have in common: their customers. The interviewees that touch upon this subject recognise that this re-focusing from an inside-out to and outside-in perspective requires a significant change in the mind-set of their colleagues. An attendee speculates that the perceived product may not be the same for the IT development organisation, product development organisation, and the customer, while a Product Owner admits that attempting to change this mindset is bold, but something they are experimenting with and experience a great appetite for in the organisation, albeit not very broadly.

Improvement features: When planning for the following PI, usually two large improvement items, *features*, and a number of smaller, more specific items are included. The number of features being worked on simultaneously is limited to the capacity of people working in the LACE at the given time, and as one Product Owner notes, the rest of the organisation also has a limited capacity to accept and adapt to the changes the LACE is working to implement. Currently, the most important features as identified by the Product Owners are: *"Clear Line of Sight"*, aiming to display the relations between smaller features and strategic projects, and *"Feature Lead Time"*, targeting shorter delivery times of development features by implementing a metrics dashboard. Additional ongoing LACE features include *"Lean Business Cases"*, a tool to clarify the expected value of features, and a *"Team Role-Card"*, describing the responsibilities of an agile development team to align expectations across the organisation.

Process: The interviewees report that the work process of the LACE resembles the process of an ART in SAFe. All LACE attendees share this common reference in their primary roles, making the overall process in the LACE incremental and easy to follow. The three LACE Product Owners from different line-organisations maintain a backlog of improvement features in collaboration with the LACE volunteers. The backlog items match the LACE Objective Key Results (OKR), quantitative metrics set by the Product Owners representing the vision for the LACE to move towards and measure their progress to stay on track moving in the same direction. New features should match these goals that are redefined and shared anew for each PI cycle. Using a 3-month increment for each PI, features are planned in a PI planning meeting, where a number of features are pulled into the PI according to the expected capacity of the LACE team. Since every LACE member is volunteering to work on LACE features on top of their regular role at Nordea, the expected capacity of LACE fluctuates, as some members may have a lot of work outside the LACE for some periods of time, and may be highly available for others. Due to this, the features pulled into

the PI depend on the availability of the *"driver"*, the LACE member committed to drive the feature work. When a feature is moved from the backlog and the LACE work starts, the first step has been observed to be *identifying possible root causes* for the observed challenges. While the LACE participants may have some ideas for what is causing the challenge, it may be deemed necessary to contact more coworkers to grasp the extent and root of the issue and gain allies for the subsequent phases of the change work. The complex issues brought up in the LACE can be difficult to pinpoint and may have multiple causes and thus multiple ways to solve them. When the LACE sub-team working on the feature has examined all possibilities, a *hypothesis is formed*, and an *experiment is set up* to try to solve the problem. Rather than implementing the targeted improvement across the whole organisation, the LACE sub-team typically opts to experiment on a single team or an ART. If the results from the experiment show a positive impact and the hypothesis is validated, *communicating the effective method* of solving a challenging situation is recommended to a broader audience. The work to progress features happens in smaller *feature-specific sub-teams* that a specific person drives. The participants of these sub-teams are invited both from the inside and outside of LACE based on their expected input or interest in the specific feature. The LACE participants use their organisational network to invite persons of interest to work on features that impact them or who are otherwise instrumental to identify the root causes and get the change implemented. One Product Owner reflects that the LACE facilitates the process, but people having the hands-on experience find the best solutions, and thus collaboration is vital. Attendees report that working in small sub-teams is preferable, as too many people and too many opinions may prevent the team from finding consensus and taking action, and that the teams they had worked in were open, willing to collaborate and to do the work needed. The sub-teams meet on a regular basis, usually for one hour per week, to work on their feature, to set goals, to plan a course of action and to evaluate the results. The LACE meets *once per week for a 30-minute online status meeting*, where an acting Scrum Master shares the LACE team's Jira Kanban board for the current PI and asks drivers for updates on features in progress. This role rotates among the LACE members. The drivers give short status updates about the progress since the last meeting and the planned actions for each feature. Attendance at these meetings is open to all and not mandatory. Drivers are asked to send a representative to provide an update if they cannot attend the meeting. According to one Product Owner, several different meeting types and lengths have been tried out, and this format has received the best response. According to several interviewees, the Kanban system helps the LACE group stay informed even though their availability to attend these status meetings varies over time. It provides an easy overview since the board is always accessible and Jira is used throughout the development organisation. During our observation period 7-9 persons participated in each weekly status meeting.

Volunteering: The LACE currently runs on an open, part-time, volunteer-based model, unlike the full-time LACE team described in SAFe [22]. Reflecting on the advantages and disadvantages of the volunteer model, one Product Owner

points out that the LACE work can only continue as long as management allows LACE members to spend time working in it. If other initiatives are pushed the traditional power structures, requiring the organisation to respond quickly, the LACE will no longer be a priority. Several interviewees expressed a need for a full-time coordinating role within the LACE. All interviewees expressed that having "practitioners", i.e. persons working in other roles in the field, involved in the LACE as positive, and that every volunteer brings value to the LACE, no matter what their primary role or department is.

> *"I know how to drive and facilitate, but I need to bring in the needed people in order to get the right and the best solution out. So having this collaboration between the three different PO's I think we have managed to prove, that I mean, joining forces makes us even stronger."* — LACE Product Owner

4.3 RQ3: How does the LACE influence the organisation?

The LACE influences the rest of the organisation by including them in identifying and experimenting with solving *systemic issues*. As the LACE has no official mandate to impose changes to anyone in the organisation unwillingly, it relies on more subtle ways of influencing the peers to reach the goals.

Advisory Role: The bottom-up origins of the Nordea LACE and the official lack of mandate to make the high-level decisions is a well-known contradiction compared to the traditional SAFe-based LACE among the interviewees. Thus, currently the LACE's role is advisory. A LACE Product Owner comments that the LACE is empowering people to influence strategic decisions regardless of their role. However, only one LACE participant fully agrees when asked if the LACE is empowering. Instead, one says that empowerment comes from management and from business results. Another explains that in order to start making an impact, a broader audience is needed in LACE. Three of the interviewed LACE participants would like the LACE being given more support by higher management in order to have a more significant influence.

> *"We are missing some kind of mandate from the top, I'm talking about C-level management, to have such a LACE, which will provide the standards for all the business areas, because right now you can either follow the recommendations, [...], or you can do it in your own way, and no one will stop you [. . .] However, not having this mandate, it doesn't stop us to still implement Scrum, agile, Scaled SAFe, whatever we'll call that. Because the motivation, the beliefs, I think, it was proved through recent years that it's working."* — LACE Attendee

Communicating the Achievements: One Product Owner and several LACE attendees bring attention to the challenge of broadly communicating the LACE results. The Product Owner's experience is that communicating the value of the changes is easier when the message comes from the same people that have experienced the results firsthand. A tool the LACE uses to raise awareness of the value being generated and the issues they are working with are *pilots*. Instead of deciding on the right path for a change straight away and putting a lot of work into implementing the changes broadly, many LACE projects start

by experimenting on a smaller scale, in a team or a train. The purpose of the pilot is to get preliminary results and use those to gain traction and get people interested in the experiments and their results. For the purpose of inspiration and collectively sharing learning experiences, the LACE hosts a monthly business-line staff meeting, a *Huddle*, which is an opportunity to communicate the experiment results to a broad audience. One Product Owner sees the 15-minute time-slot available at the Huddle as a way to showcase the value of the features the LACE is working on. As this storytelling approach has yielded good results according to one Product Owner, piloting is a tool that is often used in the LACE not only to experiment to find the right solutions, but also as a way to communicate and accelerate the change to the rest of the organisation. One interviewee suggests marketing the LACE involvement in these pilots clearly to strengthen the presence of LACE in the minds of the larger organisation and to give momentum to the increasing influence of the LACE going forward.

> *"You need to have some sort of a track record that you did something that you say, "Well, this is what we did, this is what we're good at and this is how you can benefit from that". And then you need to turn that into something that people want to carry on or get curious about. [...] And I think that's really something that you could advertise and have people ask questions about: "Okay, so how did this happen then?" and "What have you learned and where did the idea come from?". "Well, the idea came from, we have this group of people called LACE and we're actually developing more and more of those sorts of ideas"."* — LACE Attendee

4.4 RQ4: How can the LACE improve to inspire and facilitate change?

Communicating the Achievements & Broader and Earlier Volunteering: Though the majority of interviewees agree that there is enough representation in the LACE currently to support a solid foundation to facilitate changes, expanding the LACE group by recruiting more colleagues is an ongoing improvement item on its own, that one sub-team has been working on. A LACE attendee comments that the network of LACE is extensive, which is an advantage, and that input comes from many different parts of Nordea. We observed that currently, the first three steps of transformation described by Kotter [14] *1: Establishing a Sense of Urgency, 2: Forming a Powerful Guiding Coalition, 3: Creating a Vision* are being done in a small group within the LACE. Establishing a sense of urgency can be seen as identifying features for the LACE backlog and relating them to the overall OKRs. A guiding coalition is formed based on interest within the LACE and the contacts in the network. The vision for change is created in a sub-team by forming hypotheses for how the situation could be improved. In the step four of the Kotter's model the rest of the organisation gets involved. Interviewees noted that communicating the vision for change and getting people outside of the LACE group on board with the changes is difficult at this point. For this reason, a LACE attendee suggested including the broader organisation earlier (e.g. at step one) and recruiting new colleagues based on

interest and identification of a specific change feature. This LACE attendee suggested that the Nordea Intranet could be used to reach a broader audience, to both inform and include. The attendee emphasised the importance of people joining being aware that some work would be required to reach a solution, instead of simply complaining about the faced issue. This could make LACE more visible to the rest of the organisation. Another LACE attendee noted that to take the LACE to the next level, it would have to be so well-known that people in the organisation facing systemic issues would reach out to LACE, instead of the other way around, as they have previously heard about the work the LACE did.

> *"We believe that we are doing this for people, so we would like to change in order to make it a better place to work, easier to communicate and collaborate. [...] those people who are volunteering to be a part of this group, they have this drive, right, so they believe that it's not just about, you know, giving advice it's sometimes about, you know, getting your hands dirty and simply doing some activities."*
>
> — LACE Attendee

Introducing Retrospectives: The internal process of the LACE is a copy of that of an ART in the SAFe framework, that LACE repeats every three months. However, a participant pointed out the lack of retrospectives that aim to reflect on the current processes of an ART or a team to improve. While it is unclear why retrospectives are not currently organised in the LACE, it would be a familiar way to improve the ways of working in the LACE.

Splitting the Feature Size: LACE bases its process on the 3-month PI Planning cadence. Despite this, many features stay in progress for an extended period without much visible progress. At the weekly status meetings, it has been observed how many of the features stay in the same column in Jira for long periods, while the driver of the feature reports progresses nonetheless. One Product Owner explained that while LACE tries to break large features down into medium- and short-term targets, it is not always possible. Some items on the LACE's agenda are very large, ambitious transformations of culture and mindset such as reducing lead-time, thus, it is not surprising that the overall focus on reducing lead-time has been on the backlog for over a year, according to a LACE attendee. However, it is surprising is that this particular item has such a broad and unreachable goal. This feature seems to serve as a reminder of the transformational marathon the LACE is running. A LACE attendee points to this as the LACE's biggest challenge: usually, the large features the LACE is working on are difficult problems to solve, and suggests breaking the large efforts into smaller parts that are easier to tackle and progress is more visible.

> *"I think if that would be a much more bite-sized piece that we could actually immediately start working on and tackle, because we have a clear idea of what we're going to do, a clear idea of how to measure it, be actually Lean, then we can do it and move on to the next item. Right now, they kind of hang there in progress a little bit because they're too big and too ambiguous to really do something about them."*
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5 Discussion and Conclusions

The first Nordea LACE resembled what is described in the SAFe literature. It was dissolved after the initial transition goals were reached, but was re-invented by volunteers within the organisation as a way to facilitate continuous improvement efforts that were still relevant long after the transition. We found that the goals, resources and ways of working of this second instalment were vastly different from the LACE described in the SAFe literature. With the long-term focus on continuous improvement within the agile space of Nordea, cross-collaboration and communication between units is highly valued and achieved by engaging volunteers in making change and compelling their peers in an advisory role. This way of working has the advantage that the practitioners engaged in the LACE work uses their network and experience to identify and implement wanted changes more easily, but a disadvantage of this is that their partial commitment may hinder progress and a lack of mandate to enforce change. We suggested the following improvements for the LACE internal processes and to increase influence to further their work: Working more closely with the traditional power structures in line-management, increasing the visibility of the LACE features by marketing them as such, involving more colleagues in change efforts by calling for help on specific changes, and conducting LACE-specific retrospectives.

While SAFe suggests a strategy resembling the *Commanding intervention* type identified by Huy [12], the Nordea LACE resembles the *Socializing intervention* type [12] in its democratic approach to change, empirical normative tactic, and participatory and experimental approach conducted in continuous work groups, relying more on organic and incremental spread of change similar to the views of Tsoukas and Chia [26] than the top-down implementation of Kotter [14], on which SAFe bases its recommendation. This is likely due to the goal of the post-transition Nordea LACE differentiating significantly from the SAFe documentation LACE; As Huy notes, the Commanding type is likely effective at changing formal structures with fast improvements in the short-term [12], but for the purpose of long-term continuous improvement, the Socializing type appears to be working well for the Nordea LACE. However, this approach has been observed by the LACE Product Owners to have had some of the same limitations Huy foresaw: a splintered, anarchic organisation [12], a challenge which occurred when the LACE was highly popularised and lacked direction, and seemingly mitigated by an increased focus in the direction led by the three POs. Recognising that the results of this study may only be relevant for this particular context and not generalisable, this first study of one instance of a LACE documenting the experiences of participants may serve as an inspiration for other companies looking for ways to implement or improve a community-run organisation driving continuous improvements efforts from the bottom up. Currently, there is little research covering the continuous improvement elements that are at the heart of agile. The results of this case study open up the area of studying how continuous change can be institutionalised, organised, and work incrementally even long after a large-scale agile transition. Studying more cases in the future will enable researchers to compare different contexts and determine if there are

common systemic issues present in mature large-scale agile set-ups. A limitation of this study is the small number of interviewees. Due to the limited resources, we were not able to interview as many non-LACE members nor former LACE members as we would have liked. This poses a potential threat to the validity of this study, as more views from the rest of the organisation, that the LACE is trying to influence, would have been a great addition to the empirical data.

We hope the positive experiences relayed in this paper of this alternative approach to a post-transition LACE may inspire other mature agile organisations to experiment with similar, volunteer-driven LACEs, as a means of facilitating continuous improvement efforts on an organisational level. It may also serve as grounds for more case-studies and comparison of the experiences from other post-transition LACEs attempting to keep the agile continuous improvement process going. We argue that the current body of organisation and change management theory present useful devices for doing so.

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