Case Study

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IT & Management

Merkely: Management of The Startup Organization

Group 2 members:

Finn Eivind Aasen, Håkon Nikolai Stange Sørum, Paul Thomas Korsvold,
Rajani Shrestha, Arstanaly Rysbekov

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Table of Content

Introduction

This case study goes through the processes of IT management and strategy in a Norwegian startup, Merkely. The following chapters will briefly introduce the case details, ideas and thoughts about the startup gained from Merkely's co-founder Michael Long, and also observations and analysis of students.

We have chosen to focus our report on the whole Merkely organization. Merkely is small, consciously nonhierarchical and agile. This allows us to take both a broad look at the key management decisions and how they affect the day-to-day operations of IT and development of the business. The interactions within the team and how the leadership of the team interacts with outside stakeholders such as investors are of high interest to the report.

General case description

Method

With the intention to gain knowledge about the practices of IT management in the organization we conducted an interview with the CEO of a progressive startup company known as "Merkely". We have chosen interview as a method of data collection, as this method helps in gathering both qualitative and quantitative data. The interview is semi-structured as we have set a list of questions that were mostly focused on history, current situation and future plans of the company and we planned to ask follow up questions if required. Since we had a limited time to undergo the interview, we sent our interview guide to the interviewee so that he could prepare in advance. The interview was conducted digitally via Zoom. The interview lasted for an hour, we started the interview with an introduction of the interviewee and all the group members. We then gave a brief overview of our assignment and the purpose of the interview. We asked for the interviewee's consent verbally, if we could record the interview and sent him a consent form to sign that includes the term about the rights related to both interviewee and the student group. The conversation was more casual where we gathered open-ended data. This interview gave us a holistic view of how a normal day at a startup company looks like and what kind of strategies they used to manage and minimize the risks and problems.

The organization and the context

Merkely was established in the beginning of 2019 by Michael Long and James Logan. It is a startup creating software development tooling for DevOps-teams. The product helps teams do compliant change management at a DevOps-pace. This approach to help businesses adopt

DevOps-practices is ingrained in the culture of the company. As the founder and CEO said in our interview “We are a DevOps-company!” Merkely is aiming at ensuring that their team is a fully empowered team (*DevOps tech: Empowering teams to choose tools*, n.d.) which is a key principle in DevOps-practices. Aiming to have all employees able to do any technological task at hand is a vital part of the strategy for the organizational structure, as this builds what Michael Long called “empathy within the company”. Even though the current team members are in agreement about current technologies used in the company, this matter is always open for discussion and change if necessary. For example, in the interview Michael Long states that they might switch from Google Cloud Platform to Amazon Web Services in the near future.

The startup-mentality is entrenched in Merkely. They have run their product on a $200 cloud computing bill a month and “fixinging issues that come up, as they come up” resonates well within the Merkely team. Trying to build a scrum-team that feels like a family is what has been the goal of the founder. Moving fast to accomplish key objectives and learning in production are outputs of the internal culture. The trust within the team allows for speed, agility and willingness to experiment.

Some of the apparent problems with traditional software change management (*The evolution of IT change management*, n.d.) is software updates being set into production often in bulk and with long waiting times for approval in the change advisory board. This slows down a development teams’ ability to deliver value to the end-customer, and in turn hurts the competitiveness of a business. This is solved in many ways with a DevOps-approach, but not all businesses can adopt a DevOps-mentality for their software development due to regulatory concerns. This is where Merkely aims their products. Highly regulated businesses such as banks, investment banks, pension funds, fintech, insurance, medical, automotive and payment processors need non-reputable evidence that their change management procedures have been followed when auditors from governmental agencies such as The Financial Supervisory Authority, or certifications such as PCI DSS audit the software development process.

The financial industry has a huge spend on IT and is one of the main markets for Merkely. As CitiGroup CEO Michael Corbat once said: *“In many ways, we see ourselves as a technology company with a banking license.” (Corbat, 2014)* Gartner forecast the spend of the “Banking and Securities” industry on Enterprise Software to rise 11,4% in 2021 to $112 billion (*Gartner Forecasts Worldwide Banking and Securities IT Spending to Decline 4.7% in 2020 Before 2021 Rebound*, 2020). These facts really lament the willingness to invest in tooling to operate as modern technology companies in the market Merkely is aiming their product.

Niche, segment and strategic positioning

Nowadays one of the most common practices used in IT management and software development is Information Technology Infrastructure Library(ITIL) change management. ITIL is a framework of detailed practices for delivering IT services (White and Greiner). And change management is one of its processes which is designed to help control the life cycle of strategic and operational changes to IT services through standardized procedures. The goal of change

management is to control risk and minimize negative impact on associated IT services and business operations. However, unlike software development, this conventional change management process has not changed for past decades. Due to rapid growth of DevOps practices during the recent years, the development evolved and delivery of new features became faster. But change management has remained as time-consuming, manual, and expensive work. Conventional change management can't keep pace with modern software development and slows down the delivery of new features. It still relies on change-advisory board meetings and time-consuming evidence collection for audits. The research done by Nicole Forsgren shows that conventional change management is a bottleneck in contemporary software development:

> "We found that external approvals were negatively correlated with lead time, deployment frequency, and restore time, and had no correlation with change failure rate. In short, approval by an external body (such as a manager or CAB) simply doesn't work to increase the stability of production systems, measured by the time to restore service and change fail rate. However, it certainly slows things down. It is, in fact, worse than having no change approval process at all." (Forsgren)

Thus, the founders of Merkely decided to address this problem and developed their own solution: DevOps change management. Currently on the market there are several tools used for compliance and change management, but none of them can be named as DevOps change management tool. Tools like Servicenow are not real time. Jira's Confluence or MS Excel are expensive, slow, manual and error-prone. DevOps tools for continuous integration and deployment aren't primarily tools for change management. In regards to existing tools, Merkely's competitive advantage is that it is a new approach for change management and compliance, and that is also their strategic positioning.

Merkely's strategic goal is to create a new market niche of DevOps change management and position themselves as a leading company in this field. To reach the strategic goal, Merkely uses a very simplistic approach in its governance. They set five goals for a fixed period of time and aim on results while achieving these goals. When the fixed period of time comes to an end, they analyse their results and set their next 5 goals. Also, as stated in the Customer Centric Approach section of this report, Merkely works in tight feedback loops with their customers. This helps to shape their tool to satisfy customer needs for "accelerated" change management with automated collection of audit trails.

Organization chart

Merkely is a small-sized company with a flat hierarchy which consists of 7 employees and hires consultants on a freelance basis for development of periphery applications. The team consists of four technologists, one salesperson, and two marketing experts. Currently the company is hiring more youth from the next generation to be diverse in their vision and nurture new talents in the industry.

In terms of decision making, crucial decisions in the company are done by it's CEO Michael Keith Long. However, strategy is discussed jointly with investors, and afterwards investors provide all the needed support to reach the set goals. Nevertheless, the company has flat structure and positions itself as a DevOps company/team. Meaning that everyone is responsible for all work related activities and everyone within the team considers themselves as owners of the company. Thus, they work across the whole value stream together. Moreover, the company does not have a formal management process but instead the team members decide and resolve everything through a lot of discussions and work together as much as possible. For example, pair programming is highly used practice in the company. According to Michael Long, they consider such an approach a cultural goal, and as Long says, "Building a start-up is a hard process and that is why the team wants the attention of everyone within".

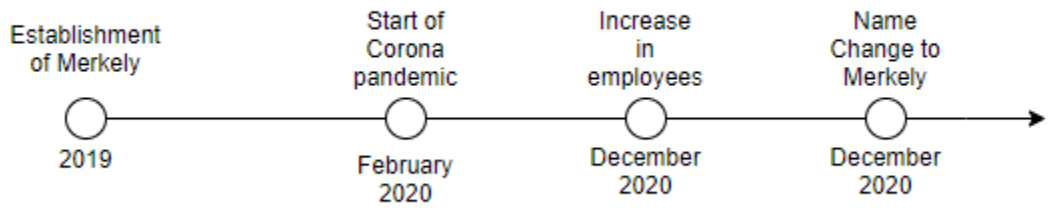
Even though the company doesn't have a formal management process, the tasks and workload of employees are being managed by preserving common vision for the product and the company among staff. Since the team size is small, coordination of work by constant communication and support among team members is working for them. Also the culture of self-organization became a natural thing in the company.

Another practice used in the company is embracing the idea of a cross-functional team. Even though each employee has their own primary domain of expertise, they facilitate working outside of it. For example, software developers would work on DevOps activities, and DevOps engineers would work on software development. They do not want knowledge to be limited only to specific employees and want to share it with each other as much as possible.

The company uses outsourcing and hires consultants on a freelance basis for development of periphery applications such as the company's website and a software library which is used in the product development. All management of outsourcing and the internal point of contact for it is CEO Michael Long.

Timeline of Merkely

The most important events and changes:



As Merkely is a startup its historical timeline is not that long, but the main events in Merkely current timeline are the Coronavirus outbreak, the increase from a team of 2 people to the current number of employees and the company name change to Merkely.

In our interview, Michael Long said that in terms of changes to the IT portfolio it's too early in Merkely's journey to give a good answer to that as there has been no major incidents and no major change to the IT portfolio. He said that probably a year or two into the future they will look back and probably question some of the decisions they made. But at the current point if he had to rebuild the IT infrastructure of Merkely he would make the same decisions and end up with the same structure as their current one.

The outbreak of the Coronavirus affected many, if not all, businesses in Norway including Merkely. As the number of employees in the start of the pandemic was 2 people, the changes needed to prevent spread of the virus at the workplace was not big. Instead, Merkely's main problem was that for the bigger companies which Merkely was in contact with, suddenly got into a new problem on how they would handle the situation created by coronavirus, work from home and how not to spread virus within the workplace. With the implementation of Merkely's DevOps tool into their process sidelined, previous deals with these companies didn't go through and Merkely had to adapt. The solution for Merkely was to change their focus and target smaller companies while waiting for the bigger companies to adapt to their new situation with Covid-19.

Merkely's current focus on smaller companies and cultivating a stable customer base with good customer relations has helped Merkely to expand during the pandemic going from 2 people to the current number of 7 people. This is a significant increase in employees, but from previous experience in work environments Michael Long does not expect a need to implement more formal management methods for the current size of the team.

The most recent event is that the company changed its name to Merkely from ComplianceDB. As the name of the company is everywhere, from in the code, in the communication channels with the customers, in the Brønnøysund Register Centre, in their documentation and so on. With their current workforce the change took 6 weeks to implement, but now Merkely has a name to get behind and they can trademark.

Key systems

The CEO and founder Michael has set up most of the tools himself because he was working alone on software development at the beginning. The two most crucial systems/platforms in the company are:

- Google Cloud Platform
    - Google Kubernetes Engine
- Slack

The company manages all operations of the Merkely system via Google Kubernetes Engine. The backend of Merkely is running in Kubernetes on a Docker image. Kubernetes is an OSS (shared storage system) container orchestrator. And Google Kubernetes Engine is Google's fully managed Kubernetes as a service hosted on the Google Cloud Platform, which provides automated deployment, scaling, and management of containerized applications. It is the most important and crucial system used in the organization from the perspective of operations.

Slack is a channel-based messaging platform and the main tool used for communication in the Merkely. It is used both as an internal communication tool and for customer support. It is the company's strategy to maintain more personal connection with customers, which is elaborated further in the Analysis chapter.

Apart from the mentioned above key systems the organization also uses Google Meet for the video conferencing, and Github with Gitlab for continuous integration and continuous deployment practices as well as for version controlling.

Relation between the organization and systems in terms of management and governance

As the founder and CEO Michael Long states in his interview, "Cloud technology and Kubernetes replace the whole IT department". Merkely uses Google Kubernetes Engine which is hosted on the Google Cloud Platform, and this solution frees the organization from developing and maintaining deployment strategies, maintaining virtual machines and owning servers, and so on. Google Kubernetes Engine provides automated disaster recovery, self-expanding, automated data backups services. Moreover, Google Cloud Platform offers affordable pricing, and that helps to reduce costs since it is several times cheaper than maintaining their own servers and team to support it. Due to these platforms Merkely can concentrate more on product development and spend less time on product maintenance.

The main tool for management is the company's communication tool Slack. Slack is the 'heartbeat' of the organization, meaning that the company and its staff is revolving around it. Since the company tries to have as little management as possible, Slack plays a huge role as a platform to control and monitor the different activities within the company. The organization heavily emphasizes the importance of communication and within the company everything is being decided by discussions between the staff. All activities, tasks, decisions, and progress is discussed in Slack.

The company also uses CI & CD processes to allow the organization to make changes, test them and deploy to a production environment in several minutes by automating mentioned above activities. Thus, if something goes wrong in the production environment, the problem can be resolved quickly. Also test automation is implemented on several levels and the Test Driven Development approach (TDD) is used. This can be considered as a part of the risk mitigation process because automated tests help to reduce the severity of risks at early stages.

Additionally CI & CD pipelines in Github and Gitlab are integrated with Slack and notifications about events such as builds, tests, and deployments are automatically delivered to developers.

Analysis

Startup mentality

To understand Merkely's current management practices with regards to IT and strategy, it's important to put into perspective the following:

1. Their product focus on a very specific need only certain IT solution providers consider
2. It's a relatively new company
3. They only have a few clients

The first and second point underlines the fact that, while there is a need for the product Merkely is offering, their approach to developing their solution has required understanding the needs of their customers and how to offer it. This, combined with a lean and agile methodology, has resulted in efforts focused in developing a minimal viable product(MVP), while intentionally keeping a flat hierarchy within the company.

Although the aforementioned might be considered the epitome of an IT startup approach, it became clear through the interview that Merkely's vision did not entail becoming a company oriented around processes and frameworks, but rather the people in the organization. To foster high talent within the company by training employees and exposing them to different roles and tasks. Additionally, allowing team members to weigh in on key decisions and shape the company, enables a sense of ownership culture that is hard to create and nurture in a bureaucratic and stringent management hierarchy.

Michael Long stated "What works for a team of eight people won't work for a team of 30". However, while suggesting there would be a need for managers, their role would be specific areas such as human resources, recruitment and finance, not monitoring people's resources and work execution. This kind of management philosophy and Merkely's current structure share many of the characteristics of a self-managed organization(SMO) defined in Self-managing organizations: Exploring the limits of less-hierarchical organizing (Lee, 2017, 45-48). The article's definition emphasizes decentralization of authority, shifting authority to non-managerial roles and individuals in lieu of managers. Certain "benefits" related to operating as an SMO are discussed in the article, such as empowerment of individual motivation and creativity, speed and innovation, improved labor-management relations. Many of these benefits resonate with the impression of what Merkely currently is and plans to become.

Merkely's most important key system is unequivocally the Google Cloud platform. This platform is what enables them to deliver value to their customers, by providing the functionality and tools integral for hosting and developing their solution. The current size and flat structure of Merkely

is what enables it to rely on separate tools, i.e. IT systems. Although enterprise software systems could deliver the same functionality, utilizing a suite of various tools proves sufficient.

While this IT portfolio proves adequate at the current scale, Merkely would have to adapt in the situation of a growing client list. Until now, communication with customers have been facilitated through “simple” measures, e.g. email, voice and video calls. With no responsibilities tied directly to a role in the organization. To be able to efficiently conduct interactions like customer support, Merkely would then consider a helpdesk system. Customer support is of course just one of several interactions companies usually conduct, to cater to other needs such as sales and marketing, holistic CRM solutions could prove more suitable.

Customer Centric Approach

The organization believes that for a startup, its customers are main stakeholders. Currently the customer base is at an adequate size to maintain personal relationships. While the product was conceived as a standalone product without prior customers, ideas for new features and development are discussed with customers, in addition to being planned and conceived within the team. This enables clients to possibly have their desired functionality implemented, while giving Merkely insight into how their product can cater to the market. Synergies like this are hard to establish within bigger companies because decisions and product plans might follow more rigid procurement, and their product and service might not be suitable for bespoke requirements.

Merkely has an open Slack channel to each of its customers where they talk to them regularly. Such approach for startups is also supported by the co-founder of Y-combinator Paul Graham:

> “Tim Cook doesn't send you a hand-written note after you buy a laptop. He can't. But you can. That's one advantage of being small: you can provide a level of service no big company can…The feedback you get from engaging directly with your earliest users will be the best you ever get. As long as you can find just one user who really needs something and can act on that need, you've got a toehold in making something people want, and that's as much as any startup needs initially.” (Graham, 2013)

Thus, Merkely not only increases its customer base and refines the quality of relationships with users, but also receives valuable feedback on its product and ways to improve it.

Strategic changes

Merkely is small and nimble. They adapt to the challenges they face, and grow based on the challenges they overcame. This is a feature seen in many successful companies, but is not maintainable over a long time if it doesn’t have top management focus. Merkely wants to grow its customer base, and has to hire more employees to be able to service all these customers.To maintain the competitive advantage they currently have, they’ll have to adapt their people- and IT management practises. The current operational backbone of Merkely was created ad-hoc,

with little focus on whether or not it would also satisfy far future needs. How Merkely approaches the development of their operational backbone in the future will be a key factor in their success.

Michael Long picked the systems he needed to do day to day operation in Merkely, focusing on what Merkely needs right from when the company was established. But because development and maintaining an operational backbone is never over, problems like their vague goal of being best on the market within their product niche might make problems for their further development of the operational backbone. Startups normally don't have too much business complexity at the founding, but it can grow exponentially with increase in the number of people, locations and technology systems used. For Merkely, complexity is still not a big problem as the team is small, they currently only have one location and the number of systems used is kept low.
If Merkely grows into what they desire to become, or anything close to it, there might be a need for a more standardized approach to managing and developing their operational backbone.

If old operational procedures originating from the early days of a startup persist, they can become real growing pains for a startup, resulting in inefficient use of resources. A report by CB insight (The Top 20 Reasons Startups Fail, 2019) analysed the reasons why startups fail, and found that user unfriendly products accounted for 17%, poor marketing 14%, ignored customers 14%. Certain aspects of their current operational backbone, such as no formal structure to customer support beyond a shared Slack-channel might not scale.

In order for Merkely to grow while fending off potential issues that can cause it to fail, it's important to have an efficient customer relation management and operational backbone. This might result in the usage of enterprise-software like CRMs and/or ERPs, but they should try to keep some of the aspects the same to maintain the same level of responsiveness to customer needs.

Lightweight tools, or heavyweight solutions

An efficient operational backbone would likely optimize time consuming manual tasks such as email marketing campaigns, payroll, customer support workflows, and sales analytics. Relinquishing resources by automating such tasks can reduce the overhead of administration and management, while facilitating growth. Software applications can address many of these needs, but an application addressing the needs of today might not be adequate tomorrow.

There are many lightweight software solutions addressing specific needs of companies, e.g. helpdesk, asset management. These solutions tend to be more affordable compared to the heavyweight solutions such as customer relationship systems or project management systems. The risk of implementing lightweight solutions in an organization is the possibility of siloing data within many separate systems. It is common, even for lightweight solutions to facilitate the export of data stored within the system, however, this in turn requires export of files or fetching of data through API integrations. Building reports and analytics from various sources in this

matter can be a time consuming task. Furthermore if a company starts out with this lightweight approach they might end up with too many tools requiring their own processes and internal training of employees.

The heavyweight IT solutions can alleviate many of the potential issues that can arise from the lightweight approach. Heavyweight IT usually provides comprehensive features, addressing many needs within a domain, and facilitates the use of application data for multiple functions within the IT solution. The flipside of heavyweight solutions like CRM systems is that they usually require intermediate experience with the system and processes you have to adhere to rigorously. Heavyweight IT is also prone to siloing of data, with the possibility of added complexity and limited integration possibilities.

For Merkely, there isn't an absolute choice of proceeding with either lightweight or heavyweight solutions for its future needs. So far the company has utilized many different solutions from different vendors. These solutions have been integrated with each other where it was deemed valuable, e.g. the posting of events from Github on their Slack channels. Picking IT solutions that have such out-of-the-box integrations, or integrations available in workflow automation tools, can minimize the risk of vendor lock-in, data siloing, and time-consuming integration tasks.

Agility, innovation and digital platform

Michael Long founded Merkely based on his experiences as a consultant. He saw that large organizations were struggling to fully realize the benefits of DevOps-practises due to deficiencies in the traditional way of doing change management. He had the data from his consulting engagements that this caused bottlenecks in development. He rapidly aligned the lack of technology in the space, his knowledge of how this process should be done and business needs into a digital offering based on SMACIT-technologies to solve this problem.

The product is delivered to customers as a SaaS-solution, and they are tightly integrated into their customers development environments as a part of their DevOps-pipeline or code-repositories. This enables Merkely to gather large sets of data on how their users are interacting with the service. This data can then be used to optimize the efficiency of Merkely; reduce spend on cloud computing by optimizing and right-sizing, reconfigure pricing model to better suit current and potential customers and uncover operational issues such as bugs, or it can be used to innovate and develop new features or offerings based on customer usage. Merkely has a digital platform without having taken a strategic decision to develop one, it has organically evolved. It might not be the perfect digital platform, but it has all the key characteristics of one. Data components from their customers are generated directly in the application, business components to interface with the components of the tool for the customer and the infrastructure services are in part consumed as services from other providers or

self-written. Merkely would need a strategic goal to focus on streamlining the digital platform and reaping the benefits.

Merkely is a born-digital company, founded and built on agile principles, DevOps practises and SMACIT technologies.The software was at first written following the principles of microservices, but a decision was made to approach more of a monolithic structure to their application. This might be seen as an archaic way of developing software, especially for a company applying DevOps practices to their internal processes. They found that this let them get a MVP to the market faster, and increased their agility. First; the team is small and there is only one team, and a commonly applied principle is to have one team own one service. This isn't achievable for an organization with only one team. Microservices can add unnecessary complexity to the lifecycle of software development (Fowler, 2015) and with Merkely having to move really fast to adapt to the wants of prospects they can't afford this overhead of complexity. To fully embrace the benefits of the digital platform they rather chose to refactor to a monolithic structure and focus on development speed. In the future they are considering refactoring again to optimize cloud usage and move their workloads to Functions-as-a-service, AWS Lambda, with an attached network-based storage.

Merkely isn't tied down to a single provider of services. All that is needed is a compute-instance and network based storage. This lets them be flexible in how they host and run their service. The flexibility is also due to being a new company without any legacy infrastructure, services, code or management practises to slow them down. Merkely has chosen to only focus their developmental efforts towards core business objectives, and has decided to integrate infrastructure services such as authentication from other identity providers. This is part of a decision to maintain speed in the process of developing their differentiators. The offering has a API that lets customers programmatically interact with the service, and this API could in the future be used internally as well.

Merkely is small and currently has no intention of developing anything outside of their core business, DevOps change management. A startup has to align their use of resources with the strategic goals in a very dedicated way as the room for error might be significantly smaller than that of an established organization. It might not be the optimal way forward to focus on developing their digital platform beyond what has evolved over time. All employees in Merkely are talented technologists and on the cutting edge of the industry. This allows them to focus on their current key objectives, which is creating a new market segment, while not hampering the future ability to focus on extending the capabilities of the native digital platform to further innovate on.

Merkley focuses largely on its product, and doesn't have any formal management practices in place. The CEO feels that project-based work for a product-focused company isn't a suitable way of work as there is no end-state in product development. Sometimes the most important task of a manager is to choose the management framework or method that is the least disruptive of productivity. Michael Long mentioned his experience with Prince2 as a

project-framework and it's unsuitability for Merkley. These are some of the drawbacks that was discussed:

1. Bureaucratic and controlled nature
   Prince2 is the most bureaucratic example of project management used mostly in government organizations and projects where the decision is made by those in higher positions. Whereas Merkley has free flow of information with flat hierarchy and any important decisions are made jointly.
2. Expensive method
   As Prince2 requires heavy paperwork and it is an expensive method to implement. Merkley uses Pre-built platforms and systems like Google Kubernetes Engine and Slack as they are cost effective, have efficient accessibility which seems sufficient for the company at present.
3. Focuses on project completion and is plan driven:
   As already mentioned above Prince2 centered itself around project completion and followed a pre-set plan during the project life. Within this approach, every step is predetermined, and everyone is restricted to follow the plan, but Merkley does not seem to have a set of defined guidelines to perform each day, the daily activity might differ for different positions as their short-term goals change constantly. They have several targets to accomplish parallelly rather than a single project, thus cannot stick to a single plan for a long time and must update them according to the situations.

Merkely and their place in the digital platform of customers

One of Merkely's main competitive advantages is the low friction integration into the digital platform of the customers. Merkely enables their customers to maintain and develop digital offerings at a rapid pace even when the customers are in highly regulated industries. Any company that wants to be a truly digital company, and is in a regulated industry, will need a solution like Merkely to be able to innovate, experiment, develop and offer digital offerings at the rapid pace needed to keep up in today's world.

Andreas Røe, CTO at ZTL Payment Solution AS, a customer of Merkely: "(...) What Merkely provided was governance and processes that didn't put any delay on our development. We needed a novel solution for this because if we'd gone along with the industry standard we would be going much slower today and we'd be a lot further behind in our journey." (Johnston, 2021). This is just one example of how Merkely will truly be beneficial, maybe even necessary, to be able to be a digital company within a regulated industry or with strict demands to change management. The tool enables these companies to be competitive. Merkely is API-enabled and can seamlessly be integrated into the other tools or systems that make up the digital platform of Merkely's customers. Their API can be considered as one of their digital offerings to facilitate better development experience for their customers. API is documented and documentation can be easily accessed by all customers.This way Merkely provides two digital offerings for their customers:

1. Docker image

2. API

Merkely has an RESTful API that customers get access to. The API openly provides most of the endpoints that Merkely uses for its own client application. API enables developers to work with the following entities:

- Projects
- Artifacts
- Evidences (for audit trail)
- Approvals
- Deployments
- Project environments (for example, production, staging, testing, development)

And Docker image can be used directly in a customer's digital environment as an off-the-shelf solution instead of Merkely API.

Conclusion

Merkely is a startup still in its early stages of development. Many decisions have been made and some, if not all, might be subject to change as Merkely grows and expands beyond its current size. The business complexity of Merkely is low and its current solutions reflect that. The most notable benefit of Merkely's current size is in how everybody on the team has the opportunity to affect decisions and how they can have a more familiar relation to their customers than you would get for automated solutions. Merkely is selling a specialized product for something they found to be missing in the current market. As the first to attempt to fulfill this niche, Merkely is pathing the future for DevOps Change Management, they are the leading product for this niche, but we don't know how the future for this field would look like and what solutions future competitors might bring. If Merkely takes actions to profit off their current advantages, and prepare for a future where they get competition and might have to pivot, they will be more resilient to the ever changing landscape of their market. This might also reduce any growing pains as they expand beyond their current size.

Merkley might not be a "large, well established" company as depicted in Designed for Digital, but even if they are a new and Agile organization they have further work to do to be fully digital. Even as Merkely isn't directly comparable with many of the case studies in the course material there are still lessons to be learnt and applied to the startup context. As a startup the history, changes and previous challenges are few and baggage from old systems, processes or company culture are not there. Merkley's approach to strategy, and strategic positioning, while simple is effective. They have concrete goals, with board buy-in for each quarter, and work to implement them. By capitalizing on knowledge from the failures and successes by other organizations, both "large, well established " companies and unicorn startups such as Netflix and Spotify, in transitioning to a digital approach, Merkley can get it right the first time. This will give them a bigger chance of success.

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Appendix 1. Interview Questions

Introduction and History:

1. Can you tell a little about yourself, your position, and responsibility in the company.
2. What does your daily routine look like?
3. Can you tell a little bit about Merkely and its history.
4. Please show us a demo or tell us about the product

General question about the company:

1. Who are the stakeholders, their responsibilities, and do all of them participate in the board of management?
2. Which Organizational structure do you have in the company and how effective is it?
3. How many people are there in the company now? How many people were at the beginning?
4. How was the company conceived and how did it get its funding?

Question for info on organization chart :

1. What are the different roles of your employees and can you tell us about how Merkely is structured with its different roles?
    a. Do you have certified professionals or experts in the field in your team?
2. Do you have specific roles for IT management and how many are working on IT management? Is there a central IT-dept(person), or are the IT capabilities distributed within the business?
3. How are decisions made and who participates in decision making?

Questions about key systems:

1. Can you tell us about the key systems/platforms used in Merkely? If they are connected to each other, how are they connected?
2. What are the most critical systems/platforms that you use?
3. How does your internal IT infrastructure support your business objectives?
4. How do you do customer support? Eg. Are certain systems used internally, and used to host customer functions? Interconnections?
5. Is there anything lacking in terms of used systems?
    a. Missing functionality
    b. Need for ad-hoc solutions for integration
    c. Siloed data storage <- do you have a comprehensive data storage strategy?
6. If you were to rebuild your IT infrastructure from scratch, would you do it the same way your systems are now?

Questions about product development and its change management:

1. How does the organization change its product? How risks are being calculated and how change is being prepared and actually performed?
2. Why do you prefer CI & CD practices for change management? Are these practices enough to maintain quality control and change management in your opinion?

Questions about the evolution of the company:

1. We want to learn about the evolution/development of the business in terms of current and past changes with a main focus on the IT infrastructure.
2. For past changes in the IT portfolio, how was it planned to be done and how was it actually done? Were there any differences between expectations and actual results?
3. How has the company changed in terms of management and structure over the years? What management/business problems have you faced for the past years?
4. Recently, you have changed the name of your product. Did you face any problems during this change and how have you solved them?

Financial questions:

1. Is there a dedicated IT Budget?
2. Is the same person responsible for IT deliveries and its budget?
3. Do you have external funding? And how do you manage the development and maintenance costs?

Questions about strategy:

1. Do you out|source any part of your IT-portfolio?
    a. If yes: who is responsible to follow up with the service provider?
2. Do you have a long-term IT Roadmap or business plan?
3. Who are the stakeholders involved when planning the company's roadmap on IT infrastructure? How does it support the business goals?
4. Who is responsible for the implementation of the above-mentioned plan/roadmap and its goals?
5. What is the company's overall vision for the future? And how do strategy and management practices support it?
6. Do you think that there are any strategic goals that require a significant change in either your IT portfolio and/or your IT management practices?

    a. Plan significant changes: What are the methods/tools applied by Merkely to achieve the desired goals? Do you see any risks when implementing the desired changes – and if so, how are Merkely going to address them?
    b. Plan, maintain status quo: Who and what do you consider the key reasons behind Merkely's current success, and how did Merkely get there?
7. What methods/tools are used by the organization to achieve the desired goals?
    a. Is there any specific methodology that the company uses for governance?
8. Who and what do you consider the key reasons behind the current success, and how did you get there as a company?