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## Managing IT Challenges When Scaling Digital Innovations

*Most digital innovations fail when they transition from the exploring to the scaling stage. We describe how freeyou, the digital innovation spinoff of a major German insurer, successfully scaled online-only car insurance, focusing particularly on how it managed the IT-related challenges. The stark differences between the stages required very different approaches to application development, IT organization and data analytics. Based on freeyou's experience, we provide recommendations for successful transitioning from exploring to scaling.<sup>1,2</sup>*

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### Challenges of Transitioning from Exploring Digital Opportunities to Scaling Them

Established companies have seen the role of digital information technologies (such as mobile and cloud computing, machine learning and the Internet of Things [IoT]) expand from enabling more efficient and effective business processes to becoming an integral part of the product or customer service and thus enabling entirely new business models.

Digital innovations go through several stages in evolving from the initial idea to market readiness. For example, Dutch bank ABN Amro recognizes four stages: 1) proving the problem; 2) proving that the solution fits the problem; 3) proving that people are prepared to pay for the solution; and 4) proving scalability.<sup>3</sup> Though the stages differ from company to company, early stages focus more on exploring opportunities whereas later stages shift the focus to scaling the



<sup>1</sup> Blake Ives is the accepting senior editor for this article.

<sup>2</sup> The authors express their gratitude to the members of the review team and, in particular, the accepting senior editor, Blake Ives, for guidance and support throughout the publication process. Their expertise and insightful suggestions significantly contributed to our analysis. The authors are also grateful for DEVK's and freeyou's cooperation throughout the course of this research and their openness in sharing experiences and data.

<sup>3</sup> For information about ABN Amro's approach, see *The Secret behind Successful Innovation within ABN AMRO*, ABN AMRO Developer blog, June 3, 2020, available at <https://medium.com/abn-amro-developer/the-secret-behind-successful-innovation-within-abn-amro-333eee3fbba1>.

innovation.<sup>4</sup> While exploring is about generating and validating ideas, scaling is about advancing the implementation of ideas to a point where they generate material business value.<sup>5</sup>

Published research on digital innovation centers on the exploring stage of innovation and offers a variety of concepts, methods and techniques to support innovation practitioners. Some of these techniques seek to generate new ideas (e.g., Google's 20% rule for exploring innovation<sup>6</sup>), while others aim to generate new products, such as Lego's open innovation community platform,<sup>7</sup> Facebook's internal hackathons,<sup>8</sup> and Philips' open innovation campus.<sup>9</sup> Yet others help improve the relevance of ideas (e.g., iterating in an incremental fashion using agile approaches, employing cross-functional teams, obtaining initial customer feedback as early as possible, or even co-creating with customers).<sup>10</sup>

Most companies are familiar with agile approaches, Design Thinking and lean startup

techniques.<sup>11</sup> However, exploring and validating digital business opportunities isn't the problem: most digital innovations fail when organizations try to scale them up. In one study, 78% of industrial companies failed when trying to turn a validated idea into the expected return on investment.<sup>12</sup>

To provide managers, particularly IT managers, with guidance on how to scale digital innovations we explored three questions: 1) What makes the transition from exploring to scaling digital innovations so difficult? 2) What are the implications of the transition for organizing IT? And 3) What can IT managers do to help manage the transition?

To answer these questions, we conducted an in-depth case study of freeyou, the digital innovation unit of German insurance company DEVK (see the Appendix for more information about the research). Freeyou was established to identify and implement digital, customer-facing innovations that were too disruptive to be developed within the confines of the established DEVK organization because they were expected to threaten DEVK's agent-based insurance distribution channel.

Freeyou explored several digital opportunities and progressed one of them, online-only car insurance, to the scaling stage. In scaling up this innovation, freeyou found that it had to make many changes, compared to the exploring stage. For example, instead of looking for innovative product features, the team had to focus on the efficiency of processes supporting the product. As it transitioned to scaling, changes in requirements entailed changes in application development, the IT organization and data analytics. The development focus shifted from quick prototyping to process automation. Instead of the IT organization comprising a team of equal generalists, specialized skills were needed, such

4 For an overview of possible stages, see de Jong, M., Marston, N. and Roth, E. "The Eight Essentials of Innovation," *McKinsey Quarterly*, April 1, 2015.

5 See, Boumgarden, P., Nickerson J. and Zenger, T. R. "Sailing into the wind: Exploring the Relationships among Ambidexterity, Vacillation, And Organizational Performance," *Strategic Management Journal* (33:6), June 2012, pp. 587-610.

6 In their 2004 IPO letter, Google founders Larry Page and Sergey Brin encouraged employees to spend 20% of their time on projects that do not promise an immediate profit but might be the next big thing down the road. This rule has subsequently been adapted: see Mims, C. *Google Engineers Insist 20% Time Is Not Dead—It's Just Turned into 120% Time*, Quartz, August 16, 2013, available at <https://qz.com/116196/google-engineers-insist-20-time-is-not-dead-its-just-turned-into-120-time>.

7 Lego invites its customers to submit product ideas to an online voting platform. Lego directly connects to its customers, providing engagement and learning opportunities. For more information, see Schlagwein, D. "Organizational Learning with Crowdsourcing: The Revelatory Case of LEGO," *Journal of the Association for Information Systems* (15:11), November 2014, pp. 9-12.

8 Facebook regularly invited external developers to create new solutions together with its own employees. See Weinberger, M. "There Are Only Two Rules" — Facebook Explains How "Hackathons," *One of Its Oldest Traditions, Is also One of Its Most Important*, Business Insider, June 11, 2017, available at <https://www.businessinsider.com/facebook-hackathons-2017-6>.

9 On its innovation campus, Philips connects to over 15,000 customers per year to actively co-create new products and services. For more information, see *Innovation Hub Eindhoven*, Philips, available at <https://www.philips.com/a-w/about/innovation/innovation-hubs/eindhoven.html>.

10 For a good primer that explains different innovation practices, see Pisano, G. P. "You Need an Innovation Strategy," *Harvard Business Review*, June 2015, pp. 44-54.

11 In a 2015 survey, 75% of 235 responding companies had experience with Design Thinking. See Schmiedgen, J., Rhinow, H., Köppen, E. and Meinel, C. *Parts Without a Whole? – The Current State of Design Thinking Practice in Organizations*, Universität Potsdam, October 2015. See also the accompanying website *Design Thinking Study: Parts Without A Whole?* available at <https://thisisdesignthinking.net/why-this-site/the-study/>.

12 Abood, D., Quilligan, A., Narsalay, R. and Sen, A. *Rethink, Reinvent, Realize. How to Successfully Scale Digital Innovation to Drive Growth*, Accenture Research, 2019, available at [https://www.accenture.com/\\_acnmedia/Thought-Leadership-Assets/PDF/Accenture-IXO-HannoverMesse-report.pdf](https://www.accenture.com/_acnmedia/Thought-Leadership-Assets/PDF/Accenture-IXO-HannoverMesse-report.pdf).

as skills for developing individual features within the core insurance system. And, in terms of data analytics, freeyou needed to build capabilities for customer segmentation.

Below, we first provide an overview of DEVK and its freeyou innovation unit as well as the challenges for IT that freeyou experienced when transitioning from exploring digital opportunities to scaling them. We then describe what freeyou's IT leadership did to help manage the transition.

## Overview of DEVK and its Freeyou Digital Innovation Unit

Freeyou is a spin-off from DEVK, one of Germany's largest insurance companies. The decision to establish freeyou in 2017 was driven by a former DEVK IT manager, who saw strong barriers to digital innovation within the parent organization.

Freeyou's mission was to make insurance as lightweight as possible. In exploring different digital offerings, freeyou's management found that online-only car insurance was not only technically feasible but had high market potential because car insurance is the most frequently bought digital insurance product in Germany.<sup>13</sup> By offering an online variant, customers no longer have to visit insurance agencies or call a clerk. Instead, car insurance services can be configured and purchased via a website or app, with customers subsequently having online access to all their insurance documents. They receive their electronic insurance confirmation very quickly and can then immediately use it to register their vehicle.

DEVK and other conventional insurers consider online-only car insurance to be a radical innovation because it represents a paradigm shift away from and a threat to the traditional agent-based business model. Online sales and service cannibalize the existing nondigital business of sales agents, resulting in channel conflict. Moreover, digital infrastructure, data and algorithms substitute for physical offices and require different employee skills.

In 2017, there were few traditional insurance companies offering online-only insurance products in Germany. Those that did include Allianz SE's subsidiary Allianz Direct, targeting young customers with car and travel insurance, and HUK24, with online offerings of parent company HUK-Coburg's product portfolio.

Against this backdrop, DEVK decided to spin off freeyou—a legally independent unit—to develop the online-only car insurance product. This decision parallels scholarly recommendations for innovation units—ranging from full integration with the core organization to cooperation between the core organization and the innovation unit to complete separation between the core and the innovation unit. The more radical the undertaking, the more a separated approach, such as that chosen by DEVK, is recommended.<sup>14</sup>

About two years after freeyou was established, its online-only car insurance product transitioned from the exploring stage to scaling. Though the long-term commercial success of this product remains to be confirmed, the decision to spin off its development was considered to be a good one. The volume of customers, policies and transactions has surpassed critical thresholds: freeyou doubled its customer base in its second year to more than 50,000 customers and was selling more policies than its parent DEVK. Moreover, freeyou's customer review ratings across all online platforms (e.g., Google, Facebook, eKomi, Check24) remained stable at around 4.5 out of 5 stars.<sup>15</sup> At the time of writing, however, digital insurance, in general, had not yet reached scale (e.g., in numbers of customers and contracts) comparable to that of traditional car insurance products. Nevertheless, the scale

14 See, for example: 1) Barthel, P., Fuchs, C., Birner, B. and Hess, T. "Embedding Digital Innovations in Organizations: A Typology for Digital Innovation Units," in *Proceedings of the 15th International Conference on Wirtschaftsinformatik*, Potsdam, Germany, March 2020; and 2) Holotiuk, F. and Beimborn, D. "Temporal Ambidexterity: How Digital Innovation Labs Connect Exploration and Exploitation for Digital Innovation," in *Proceedings of the 40th International Conference on Information Systems*, Munich, Germany, December 2019.

15 Facebook reviews of freeyou are available at <https://www.facebook.com/freeyou.ag/>. eKomi reviews are available at <https://www.ekomi.de/bewertungen-freeyouag.html>. Check24 reviews are available at <https://www.check24.de/kfz-versicherung/kfz-versicherer/freeyou>. Also, from October 2019 to December 2019, freeyou's car insurance was regularly tagged as a "price-performance-winner" by Check24.

13 *Techmonitor Insurance 2020*, HEUTE und MORGEN GmbH, 2020, available at <https://heuteundmorgen.de/studien/finanzmarkt-trends/techmonitor-assekuranz-2020/>.

achieved by freeyou is already far beyond anything that could be handled manually; thus, its innovation scaling has been a success.

Though freeyou subsequently extended its offerings to other online insurance products, providing further evidence of successful implementations, in this article, we only describe the transition from exploring to scaling for the online-only car insurance product.

## Changes in Innovation Management When Moving from Exploring to Scaling

The transition from exploring to scaling required significant changes to the emerging business. These changes affected goals, success measures, work methods and customer roles.

### New Goals and Success Measures When Moving from Testing Product Ideas to Making Them Profitable

During the exploring stage, freeyou's goal was to test the feasibility and likely market acceptance of product ideas. In this stage, success was defined through qualitative measures such as mastery of new technologies and individual customer feedback. During scaling, however, profitability became the prominent goal, which required much more quantitative success measures.

The exploring stage tested product feasibility. As René Jansen, freeyou's chief insurance officer, explained "We learned which of our ideas about how insurance should be in our world we can actually implement, and which ones we can't." An example of an unsuccessful freeyou product idea was IoT-based bike insurance. Though this offer was technically feasible, only a small group of "tech-savvy bike lovers" were willing to pay for it. Online-only car insurance was the first product that ticked both boxes of feasibility and market acceptance.

Freeyou then explored different product versions and features. As Chief Insurance Officer Jansen explained: "At that time, we thought we were fancy and integrated all kinds of payment methods like PayPal and so on. Then we added credit cards because we thought we were so mega fancy. Now with our current product, we're back to where it's best to be as an insurer—direct

debit." Fleshing out an idea was considered important to success even if it was later discarded, because it helped freeyou learn about different technologies and better understand customer needs.

Once product viability was assured, profitability became the top priority. Daniel Beiler, owner of the claims component, reflected on the maturing development process: "This youthfulness has slowly been fading, and now we have to look much more at how we can actually align profitability to all areas of the business." Measures such as contracts sold, revenue, cancelation rates and the claims ratio (the percentage of claims costs incurred in relation to the premiums earned) were applied.

The change in goals and metrics was very evident in meetings of the supervisory board. For instance, early in the exploring stage, freeyou's CEO Philip Knott brought an IoT-equipped bike to a meeting. At another meeting, he showed recorded interviews with customers of online-only car insurance. But, as the online-only product was scaled up, the meetings transitioned from discussing vision and market potential to profitability, with Knott often sharing spreadsheets comparing freeyou's business results with the initial business plan.

### New Ways of Working When Moving from Prototyping to Optimizing IT Systems

The new goal and success measures required new ways of working. Exploring opportunities needed creative prototyping. Transitioning to scaling required employees to focus on efficiency and profitability.

To quickly check whether initial ideas were feasible and marketable, freeyou built prototypes and verified them with customers. This required creativity and the courage to leave out nonessential features. As Michael Knaup, a member of DEVK's executive board and freeyou's supervisory board, explained: "At the end of the day, freeyou was courageous in not doing things. ... Many things were technically not yet implemented. They were courageous and really saying: Great front, nothing behind it yet. Try it out faster, try it out more quickly."

When transitioning to scaling, "courage to leave things out" was no longer appropriate.



The systems had to be bulletproof. With a large number of contracts, even minor shortcomings (e.g., missing customer data that has to be obtained subsequently or a rate that is slightly too favorable) can lead to increased labor costs or financial problems. Christian Böttcher, owner of the pricing component, gave an example: “[We] got money on a PayPal account and still paid out the first claims ... through PayPal via the ‘sending money to friends’ function. That was a great time. But that’s extremely thin ice when you’re an insurance company.”

With the foundational product features in place and meeting customer expectations, freeyou moved on from searching for innovative features. Increasing sales and claims demanded attention to efficiency with back-office processes designed or redesigned to meet profitability goals. Bernd Zens, a member of DEVK’s executive board and chairman of freeyou’s supervisory board, drew an insightful parallel: “You also have to work below the line of sight to make it work above. It’s like competitive athletes: we only see them at the Olympics. That they spent four years in ice and snow to train, no one sees that.”

### Customer Role Changes from Co-Creator to Data Point

During the exploring stage, customers were actively involved in product development, with individual customers’ feedback serving as the litmus test of product acceptance. But, with scaling, the needs of many customers had to be satisfied and done so profitably.

During exploration, the focus was on individual customers’ needs. Employees called aggrieved customers to ensure that their claims settlement went smoothly. They learned from those interactions. Individual customers became co-creators proposing ideas for new or modified features, as Dennis Bosser, owner of the online-only product’s website, explained: “We had small test groups; we invited customers and gave them prototypes—for example, to find the simplest design for our customer portal.” The exploring stage was about getting to know and understanding the market. Each new customer was a success. As Chief Insurance Officer Jansen recalled, “We were happy about every single [new] customer” because they provided a fresh opportunity to learn.

As sales increased, unprofitable customers could quickly lead to significant losses. Freeyou therefore segmented target groups and began to reach out only to categories of customers that were identified as profitable. From that time onward, taking individual customer needs into account was no longer feasible. To increase efficiency, processes were modified to eliminate or reduce one-on-one exchanges with customers.

## IT-Related Challenges When Moving from Exploring to Scaling

The transition from exploring to scaling required a fundamental shift for freeyou’s IT organization. It needed to change the focus of application development, how IT was organized and how data was used. The focus of application development shifted to process automation accompanied by switching the approach to system selection from one-stop-shopping to best-of-breed. The IT organization now needed new, more specialized skills, such as data-design and -analysis experts. It also required a pool of shared software resources such as a car finder component that was used within different parts of the online-only insurance product. As the number of policies reached a critical mass, statistical analysis of customer data became a valuable asset and the basis for business decisions. Providing those analyses throughout the business became a core task of the IT organization. The IT challenges freeyou faced as it transitioned from exploring to scaling are summarized in Table 1.

### Changing Application Development to Process Automation and Best-Of-Breed

Application development during the exploring stage focused on quickly delivering prototypes for trialing with customers. When scaling, however, the innovation team shifted the focus to efficiency by automating key business processes. As CEO Philip Knott explained: “We had to take more care of our processes. ... It’s no longer about making the most creative car insurance.” Freeyou developed a process map that showed the manual effort of all process steps and their respective frequency of use. It then identified where the greatest manual effort was being expended (e.g., in claims handling and collections) and focused IT

**Table 1: IT Challenges Faced by Freeyou When Moving from Exploring to Scaling**

Challenge	Innovation Team's Focus during Stage	
	Exploring	Scaling
<b>Changing Application Development Focus</b>	Enabling quick prototyping of product features with a no-code, one-stop-shop approach	Automating core processes with a best-of-breed approach
<b>Changing the IT Organization</b>	Hiring an initial, dedicated team of IT generalists to explore various technologies	Adding talent for efficient and reliable operations, specialists with deep expert skills, sharing expert IT resources with other teams
<b>Changing the Use of Customer Data</b>	Analyzing qualitative data (e.g., customer interviews)	Analyzing mass data quantitatively (e.g., patterns of customer behavior, segmentation) and sharing relevant insights throughout the company

resources there. Gradually these labor-intensive processes were automated.

More customers meant more exceptions. CEO Knott gave an example: “When closing a contract, our customers receive an electronic insurance confirmation and go to the road traffic office with it. In 93% of cases everything works. But there is always the possibility that the registration clerk entered the wrong license plate number. We went to work on that and found a way to quickly fix those errors.”

In the exploring stage, addressing the concerns of individual customers required significant resources, but the IT organization deployed automation to minimize these one-on-one exchanges. For example, a self-service portal was introduced where customers could report claims or update their contact or bank account data. Ensuring that these digital interactions were attractive to customers required analyzing customer behavior. During the exploring stage, freeyou filmed and analyzed face-to-face conversations, but now tracks user website navigation behavior. Dennis Bosser, owner of the product's website, gave an example: “We found out how important the scroll bar still seems to be for many users. We actually wanted to remove it.” These behavioral analyses delivered results with significant business impact. Bosser explained, “To reduce the bounce rate in the sales process, we created an A/B-test. In one variant we sent the customers first to an info page before the sales

process starts; in the other, directly to the first page of the calculator.”

To rapidly build the first prototypes during the exploring stage, the IT department purchased a comprehensive out-of-the-box framework called “Insurance Platform.”<sup>16</sup> This framework provided ready-to-use modules for all areas that an insurance company needs, from the conclusion of a contract to the collection of premiums and from the dunning process (e.g., when a credit card is declined or a payment portal encounters an error) to the settlement of claims. During exploration, this framework was more than adequate: all the necessary components were supplied from a single “one-stop-shop” source and the IT organization did not have to spend time selecting and implementing different software components and building connectors to integrate them. Together with a no-code editor, the plug-and-play components gave everyone on the innovation team the flexibility to assemble new products and sales channels with little or no programming knowledge.

Even though the framework modules covered a wide range of requirements, each module provided only basic functionality. For example, document management was possible in principle, but several PDF documents could not be opened at the same time. And the search function only allowed keyword search. With the few contracts processed during the exploring stage, such

<sup>16</sup> For more information on this platform, see *Make Insurance Feel Simple*, sum.cumo Sapiens GmbH, available at <https://scip.digital/>.

constraints were tolerable. At scale, however, these weaknesses in the insurance platform led to considerable inefficiencies. As a consequence, the IT managers gradually moved to a best-of-breed approach, replacing out-of-the-box modules with specialized systems (e.g., a dedicated document management system and a dedicated claims management system) that offered more advanced functionality.

A decisive factor in successfully upgrading the IT systems for the online insurance product was ensuring that newly developed modules were integrated with the original “exploring era” framework. Daniel Beiler, owner of the claims component, recalled: “We docked all kinds of specialized applications to the core system [and] also to our new customer portal.”

### Adding More Specialized IT Skills and Organizing for Growth

When freeyou was founded, the CEO asked selected employees from DEVK’s IT department to join him.<sup>17</sup> The employees were mostly young professionals willing to experiment and quickly acquire initial knowledge in various technologies. The CEO explained: “I put a lot of emphasis on the employees canceling their old DEVK contracts and signing new ones. I only wanted people who were willing to take risks. And I wanted to create a full commitment.” The flexibility provided by these eager-to-learn IT generalists was very valuable during the exploring stage because it was unclear which technologies would be used and what the customer product would be.

However, the increasingly bespoke applications that freeyou needed for scaling required specialized skills. For example, to choose and implement a dedicated claims management system, freeyou needed to recruit an expert who had already implemented various claims management systems at other insurance companies. And ensuring that the new modules could be integrated into the out-of-the-box framework used for the initial prototypes required hiring programmers familiar with the programming language used in developing the framework.

The new and more structured operational tasks that came with scaling, like automating

existing processes and implementing mature corporate systems, demanded a different mindset. Karl Assing, a freeyou board member, explained: “For this type of work ... I need completely different people. ... On the one hand, I need characters with this innovation mindset. ... And, on the other hand, I need people who simply spend eight hours a day working through issues in a structured manner.” Freeyou management had to be aware of this new requirement when recruiting.

When freeyou was established, the company comprised just one team. Chief Insurance Officer Jansen described the working arrangement at that time: “We were a small team. We sat in one room. We were eight or ten employees. There were no teams; we were the team. There were no meetings among a few people because everybody discussed everything with each other. We were sort of a little commune developing an insurance product together.”

However, new employees were recruited to support the scaling of the product, and a tipping point was reached where the original way of working was no longer suitable and a new organizational structure was required. As Christian Böttcher, owner of the pricing component, stated: “That was the biggest break we had so far. ... We did a whole series of workshops—first [with] the management [team] and then with the individual teams. At that time, we were closely accompanied by external coaches.” The main challenge was to find a suitable team structure.

Initially, there was only one product, online car insurance, so teams were formed for individual components such as pricing and the website. IT employees were allocated to different teams so that each team could autonomously develop and continuously refine its component. However, it soon became clear that the teams had to share expert resources. As a result, a few central teams were established outside the component teams. For example, a dedicated “data platform” team was set up to take care of data collection, analysis and provision. This team operated as a shared service provider.

<sup>17</sup> Before freeyou was founded, Philip Knott, freeyou’s CEO, had headed a department within DEVK’s IT unit.



## Implementing Data Analytics to Identify Profitable Customer Segments

During the exploring stage, freeyou solicited feedback from all customers to learn as much as possible about the market. During this stage, customer segments were created by integrating data from different sources such as the core system, customer portal, website, telematics and external sources. As claims component owner Daniel Beiler explained, “At the beginning, we based our pricing on GDV’s regional segmentation.<sup>18</sup> But that was not very granular. We saw in our data, for example, that the claims rate in metropolitan areas is significantly higher than in rural areas. So, we used our data for our own model.” To encourage target customers to renew their contracts, freeyou offered them individualized incentives according to their predicted needs (e.g., additional tire insurance, legal advice in the event of a claim or a discount on the existing contract).

During the sales process and throughout the entire customer lifecycle, the analysis of customer data became increasingly important. Initially, in the exploring stage, freeyou employees called each customer after an accident claim had been settled to gauge the customer’s satisfaction. As the number of claims grew, this was no longer feasible. CEO Philip Knott explained that “we now send customers digital surveys after certain occasions.” As the product was scaled it became less important to understand the problems and needs of individual customers because their potential contribution to further product improvement was only marginal. Instead, customers became one of many data points, as Chief Insurance Officer Jansen explained: “We had 32,800 customers [at that time] and we didn’t know a single one personally except for those who complained. ... But statistically, of course, I can say exactly how much horsepower the cars have that are insured with us, how old they are and when they were last damaged.”

The challenges and opportunities lay in spreading the knowledge of what customers needed throughout the company. Though the individual product component teams had

knowledge about customer data related to their specific components (e.g., the website team knew exactly which button was clicked how often and the pricing team knew how much customers were willing to pay for different offers), there was no overall view of customer data. To remedy this, the data platform team created an automated report and shared it with everyone at freeyou (and also with some at DEVK). This report included the number of sold contracts per channel, the number of claims, their causes and so on. The component teams discussed the report on a weekly basis, using it to inform decisions such as discounts in regions with a low claims ratio. Later, the data platform team provided the different product component teams with direct access to more mature data analytics tools.

## IT-Related Recommendations for Successfully Transitioning Digital Innovations from Exploring to Scaling

Based on freeyou’s experience, we provide three recommendations for addressing the challenges IT organizations face as digital innovations transition from the exploring stage to scaling.

### 1. Prepare for a Cultural Shift

Exploring digital innovation ideas and the subsequent scaling of chosen ideas are radically different processes. The first is about understanding what problems customers have and developing new creative solutions. The second is about delivering these solutions profitably. The transition from exploring to scaling has significant implications for IT organizations because they must pivot from rapidly creating prototypes to careful design of platforms that enable reliable and efficient processing of large volumes of data. To ensure successful scaling, the attitudes of, activities performed by and skills required by IT staff must change. The need for these changes must be explicitly communicated.

At freeyou, scaling the online car insurance product was perceived as a more monotonous and potentially frustrating task. Christian Böttcher, owner of the pricing component, reflected on the transition: “I think back about

<sup>18</sup> Every year, the German Insurance Association (GDV) calculates the claims records of the approximately 400 registration districts in Germany and divides the districts into 12 regional classes. An index indicates whether a region’s claims record is better or worse than the average.

where we started and with what aspirations; then we said goodbye to it [the creative process of innovation for new insurance products and features] over time. I personally regretted that very much and got to a point where I said, 'I don't want to do that anymore.' Now, I can understand it." To lessen frustration, freeyou's CEO made the change explicit. He made it clear that he recognized and understood employees' frustration. He explained that the change was necessary for digital products to scale and affirmed the IT staff's special responsibility to make the scaling successful. He told employees, "IT is becoming more and more important for us and that is also our focus and where we differ from traditional insurance companies. We are looking for digital and automated solutions to grow efficiently. We have become an IT company that sells insurance."

In contrast to the tangible prototypes and concrete new features developed during the exploring stage, the process automation developments necessary for scaling were more abstract. That made it increasingly difficult for IT staff to see that their work was contributing to company success. Management worked with the product component teams to develop a key performance indicator system to show each individual how their activities contributed to freeyou's vision. For example, the ratio of website users to concluded contracts was measured. It revealed the points in the closing process at which most customers dropped out and where further improvement could contribute to the company's growth.

Companies often identify explicit stages that any innovation passes through. Once "stage-gate" criteria have been satisfied, the next stage's funding is approved.<sup>19</sup> Our research demonstrates that deciding to shift from the exploring stage to scaling must not be based solely on financials: preparing employees for the implications of moving into scaling is essential.

## 2. Rearchitect Systems for Scalability

As a digital innovation matures and its user base expands, the demands on the underlying

IT systems change substantially. Early on, when building minimum viable products and exploring various ideas, the focus is on speed and flexibility. With scaling, the focus shifts to the ability to handle large volumes of transactions efficiently and reliably. Startups typically do not begin by building a scalable platform. They are focused on building a product as quickly as possible to verify its market and technological viability. When market success is uncertain and large parts of the required functionality are still to be determined as the exploration of user demands continues, investing in the additional effort to ensure scalability is seen as just not worthwhile, especially when initial resources are limited. Once demand increases, it will be necessary to adapt the IT systems for scalability, even though such an effort typically requires rearchitecting the systems.

Initially, freeyou's systems for the online-only insurance product were typical of a small and nimble startup. Once transaction volumes increased and profitability became a focus, it had to adapt its architecture and began to rely on systems provided by DEVK, its corporate parent, which met the reliability requirements and provided financial savings through corporate-wide licenses. Alexander Erpenbach, head of product development and operations at DEVK and a member of freeyou's advisory board, provided a striking example: "I've been offering freeyou our document management system for two years now, because I know that we have a company license. So, it wouldn't cost freeyou a cent. But they didn't want to hear about it. Then they got in touch and said: 'Listen. You claimed that we had a corporate license there.' ... So, all of a sudden, they were finally ready to take on help, because they were scared of the size and the complexity of the task."

There are compelling reasons not to build for scalability from the start. But, delaying rearchitecting for scalability for too long can have detrimental effects on customer experience, security and efficiency. Thus, having the courage to rearchitect systems early on is essential. That task grows ever more insurmountable with each new feature is added.

<sup>19</sup> See Fonstad, N. O., Mocker, M. and Salonen, A. *Scaling at Scale: Realizing Big Value from Digital Innovations*, MIT Center for Information Systems Research, December 2022, available at [https://cistr.mit.edu/publication/2022\\_1201\\_ScalingatScaleRepsol\\_Fonstad-MockerSalonen](https://cistr.mit.edu/publication/2022_1201_ScalingatScaleRepsol_Fonstad-MockerSalonen).

### 3. Be Prepared to Change Successful Exploration Teams and Bring in New IT Skills

Current literature and best practices suggest setting up permanent product teams (instead of temporary project teams) that accompany a product throughout its entire lifecycle, including from initial exploration to scaling.<sup>20</sup> Product architects, in particular, play a crucial role. If on board from the beginning, they can pass on learnings from early exploration to the later product scaling stage.<sup>21</sup> In contrast to the “development vs. operation” handover, product architects ensure that product and customer knowledge built up in early stages do not get lost and that necessary skills are present to continuously develop and maintain the product. But it is also clear that:

1. Scaling requires skills that are not known and perhaps not available from the beginning (e.g., mastering a programming language for a system not relevant early on)
2. Not all of the initial employees might be willing to go along with the change from more organic, innovation-focused exploration to more mechanistic, efficiency-focused scaling.

Management must therefore anticipate the need to adjust team composition as scaling begins. At freemyou, the transition to more mature applications required deeper expertise and a more structured mindset than needed for the initial exploration. It was crucial that freemyou’s management realized this before hiring new employees, as freemyou board member Karl Assing, explained: “For claims automation, I need completely different people.” Not all employees can be taken along on this journey. To prevent employees who do not accept the new ways of working from disheartening other employees, it may be necessary to let employees go.

Companies regularly change personnel in top leadership positions as they move through stages or crises. Someone leading the company through a growth phase might not be the best person to lead it through a phase of productivity gains or financial stress. Similarly, the skillsets required of CIOs change as the role of IT expands. It is not unreasonable to think that changes at the team level and in IT-related skills will also be necessary as digital innovations transition from the exploring stage to scaling,

## Concluding Comments

In this article, we have described how freemyou, the digital innovation unit spun off from German insurance company DEVK, successfully transitioned from exploring a digital innovation (an online-only car insurance product) to scaling it to a profitable product. The case shows how scaling affected the innovation team’s goals, how the team measured success and how its ways of working changed, and illustrates the changing role customers played. We have also described the implications of these changes for freemyou’s IT organization, which needed to change its application development approach, its skills and data analytics.

Our analysis revealed three broad guidelines that freemyou’s management followed to scale a digital innovation: 1) make the necessary cultural change explicit; 2) rearchitect the systems implemented during the exploring stage; and 3) don’t shy away from replacing members of successful exploration teams. We also identified management practices for following through on each of these guidelines.

We believe the challenges we identified and the management guidelines we distilled are relevant for companies using spinoff innovation units. More fundamentally, we found that the digital innovation process, and research on digital innovation, should include transitioning from exploring to scaling. Thus, digital innovation should not be seen just as idea generation and execution, but should be treated as an entrepreneurial endeavor.<sup>22</sup>

<sup>20</sup> For a practical view on the benefits of product orientation see, for example, Kersten, M. *Project to Product: How to Survive and Thrive in the Age of Digital Disruption with the Flow Framework*, IT Revolution Press, 2018.

<sup>21</sup> For information on the role of product architects during the scaling stage, see Cagan, M. *Build Products Customers Love*, Silicon Valley Product Group, July 10, 2023, available at <https://www.svpq.com/the-architect-role/>, and <https://www.svpq.com/product-core-competencies/>.

<sup>22</sup> Entrepreneurship literature emphasizes that startups need to make significant shifts to grow successfully. See, for example: 1) Maurya, A. *Running Lean. Iterate from Plan A to a Plan That Works*, O’Reilly Media, 2022; and 2) Maurya, A. *Scaling Lean. Mastering the Key Metrics for Startup Growth*, Portfolio, 2016.

Alexander Erpenbach, a member of freeyou's supervisory board, believes that after succeeding in scaling the online car insurance product "freeyou has to come back to creative innovation again." His view is that the exploring-scaling shift is a cycle rather than a one-off.

The optimal structure to enable a spinoff like freeyou to simultaneously manage both the exploring and scaling stages for different digital innovations remains a topic for future study. However, we acknowledge that different forms of organizing digital innovations might also be appropriate in other businesses and sectors. One possibility would be to assign digital product and service innovations to dedicated product teams comprising a product owner, designers and engineers, with additional talent and new ideas also brought in from external partners.<sup>23</sup> Such product teams may also be capable of adapting to shifts in culture and talent over the complete innovation cycle from idea generation to market supply at scale.

## Appendix: About the Research

Data for the freeyou case was collected through 17 hours of interviews with 10 employees at freeyou and DEVK. The interviews, which followed semi-structured guidelines, took place in February 2021 and November 2022, and ranged in length from just under an hour to more than three hours. We also spent over three hours with freeyou's CEO. Due to the COVID-19 pandemic, all interviews were conducted online.

All interviews were transcribed and coded. The content and all quotes were verified by interviewees before publication. Minor edits in quotes were made only to enhance readability.

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<sup>23</sup> Product management guru Marty Cagan, for example, describes how cross-functional teams can accompany a product throughout its lifecycle. See Cagan, M. and Jones, C. *Empowered: Ordinary People, Extraordinary Products*, Wiley, 2021.