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# Understanding Business Process Evolution in Digital Ventures

## Research in Progress

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**Abstract.** Business processes are at each company's core and must be adapted permanently to react to changing markets, substantial growth, or legal regulations. Especially digital ventures have the potential to evolve fast, and consequently, their business processes need to change at the same speed. Two streams of literature have looked into this. Traditional business process management sees business processes, once implemented, as relatively stable. In contrast, digital entrepreneurship literature highlights the inherent flexibility of digital ventures. Based on a multiple case study of five digital ventures, we analyze how entrepreneurs deal with this tension when business processes evolve. Building on entrepreneurial bricolage, we propose two types of resource recombination that we find, namely, usage of existing private resources and re-configuring of resources already being used within the venture. These insights contribute to extending our understanding of the evolution of business processes.

**Keywords:** digital ventures, digital entrepreneurship, business process management, business process evolution

## 1 Introduction

Digital ventures are professionally funded and young firms that work on digital market offerings (Lehmann et al. 2022). They are characterized by their ability to expand their user base at an outstanding pace by drawing on and adding digital infrastructure (Huang et al. 2017). Examples such as Amazon and Google were able to grow to a scale that took industrial companies decades to reach (Huang et al. 2017). However, the rapid scaling of digital ventures presents unique organizational challenges, such as managing rapidly growing revenue and headcount, that incumbents do not face (Tumbas et al. 2015, Lehmann & Recker 2022). To meet their new organizational challenges, digital ventures are forced to formalize and evolve business processes from the ground up (Lehmann & Recker 2022). Traditional business process management (BPM) is based on the careful modeling of business processes (Baiyere et al. 2020). With that, it aims to improve processes' efficiency and quality in a relatively stable environment (Recker et al. 2009). However, this stability contrasts with the flexibility that potentially poses the competitive advantage of digital ventures (von Briel et al. 2017). This means digital ventures are caught between structure (BPM perspective) and flexibility (digital entrepreneurship

perspective). While both perspectives advance our knowledge of how business processes and digital venturing unfold, current research only began to explain the dynamics behind the evolution of business processes in digital ventures (Tumbas et al. 2017b). Moreover, this knowledge would assist entrepreneurs in making informed decisions regarding creating their business processes and aligning them to their rapidly evolving requirements. This advances our understanding of balancing structure and flexibility in business processes to facilitate entrepreneurial growth instead of hindering it. Thus, we define our research question as follows: *How are digital ventures developing their business processes by relying on digital technology in their early phases?* We build on a case study with multiple digital ventures from a startup accelerator to address this question. Our study shows different practices of how early-stage digital ventures improvise to create business processes on top of low-specificity digital technologies.

## 2 Related Work - Business Processes in Digital Entrepreneurship

We investigate business processes in the context of *digital entrepreneurship*, which Davidson & Vaast (2010) define as pursuing new venture opportunities presented by new media and internet technologies. Concerning the current understanding of business process evolution in digital ventures, Tumbas et al. (2017a) find that “born digital” ventures depend heavily on digital technologies during periods of rapid growth. In another study, Tumbas et al. (2017b) report on the importance of digital technologies for various purposes, including establishing knowledge flows, allowing for transparency, reducing redundancies, and formalizing business processes. Furthermore, von Briel et al. (2017) explore how digital technologies enable new venture creation processes and introduce the concept of specificity, which measures a digital technology’s adaptability and malleability. They suggest that highly specific digital technologies increase the potential for compression and conservation mechanisms, which reduce time and resource requirements but decrease the potential for combination and generation mechanisms, which create new artifacts, such as devices, functionalities, and business models.

For our understanding of the phenomenon of business process evolution, we draw on a definition from the BPM literature, which understands business processes as “as a set of activities performed in coordination in an organizational and technical environment. These activities jointly realize a business goal” (Weske 2012, 5). Their management – *BPM* – oversees “how work is performed in an organization to ensure consistent outcomes and to take advantage of improvement opportunities” (Dumas et al. 2013, 1). Notably, Baiyere et al. (2020) analyze how the logics of BPM change when a venture enters a digital transformation. They identify the careful modeling of business processes (process logic), the design of process-aligned IT infrastructure (infrastructural logic), and procedural actors (agential logic) as dominant for traditional BPM.

One specific lens to understand business process evolution in digital ventures is *entrepreneurial bricolage*. Baker & Nelson (2005) describe the concept as “making do by applying combinations of the resources at hand to new problems and opportunities” (Baker & Nelson 2005, 333). Its idea stems from the field of visual arts and describes the creation of works of art from a collection of different resources available to the artist. Lévi-Strauss (1967) took the term bricolage and applied it to the intellectual

realm. In the spirit of improvisation, the bricoleur gathers resources that can be used in a later scenario. Even though the bricoleur does not know how, the collected resources will eventually affect the final solution (Matthews 2021). LeLoarne & Maalaoui (2015) applied the bricolage lens to analyze how high-tech entrepreneurs model their business processes, finding that they rely on a trial-and-error approach. Similarly, Karanasios et al. (2022) applied the bricolage lens to the digital transformation of micro-enterprises with significant resource constraints, concluding that these enterprises utilize techniques such as re-purposing, appropriating, and improvising to make the most of their limited resources. Baiyere et al. (2020) also found this improvisational spirit in the context of business process enactment in incumbent firms. The authors find that employees at companies undergoing digital transformation are implementing processes by improvising with already available tools, such as Microsoft Excel.

### 3 Research Approach - Multiple Case Study

Since the evolution of business processes in digital ventures is a recent phenomenon that should be investigated in its real-world context, we rely upon a multiple case study to investigate the evolution of business processes (Yin 2009). Our cases are startups from an accelerator in their seed phase following a Software-as-a-Service (SaaS)-based subscription business model. Our embedded unit of analysis includes the changing hiring, sales, and product development processes of the startups in which digital technologies presumably play a crucial role. Table 1 gives an overview of the participating ventures.

This study’s primary data collection method is qualitative interviews (Schultze & Avital 2011). We triangulate the interview data with public information and startup-internal materials such as slide decks (Yin 2011). To analyze our data, we rely on the Gioia methodology (Gioia et al. 2013), which means that we coded the transcribed interviews over multiple rounds in which themes emerged inductively.

**Table 1.** Companies participating in the study

<i>Type of product / service</i>	<i>Founding year</i>	<i>Interviewee (and ID)</i>
SaaS and hardware solution for machine error monitoring	2020	CEO (I01), developer (I02)
SaaS app for dementia prevention	2021	CTO (I03)
SaaS solution for product management	2021	CEO (I04)
SaaS solution to book workplaces in hybrid teams	2019	CTO (I05), admin (I06)
SaaS solution to connect music producers and loop creators	2019	Team lead (I07)

### 4 Preliminary Findings

This section presents the preliminary findings of our study on the evolution of business processes – hiring, sales, and product development – in digital ventures.

Regarding the *hiring process*, the digital ventures within our sample relied on different process variations based on the work division of the founding team. For business-related roles, the CEO usually conducted one or two interviews (I01, I02, I04), while

for technical roles, the CTO conducted multiple interview rounds, including coding challenges (I01, I02, I03, I05). Digital tools like Zoom, Microsoft Teams, and Notion facilitated the hiring process, while all ventures used LinkedIn to search for candidates. Only one venture used Personio for its HR processes (I05, I06). One software developer mentioned receiving payslips via WhatsApp (I02).

The *sales processes* of digital ventures are tailored to their target audience. For businesses-to-business sales (I01, I02, I04, I05), a basic sales funnel is in place, typically supported by a customer relationship management system (I04, I05) or Notion (I01, I02). For business-to-customer sales (I07), Notion is used to streamline sales processes. However, I03 is an exception, as its venture builds an app designed for patients, while its sales target insurance funds. Video conferencing tools such as Zoom or Teams are commonly used for customer calls. In one interview (I04), a respondent mentioned using their sister’s university Zoom account, which provides a premium account for free.

The *product development processes* of the ventures in our study were predominantly based on agile software development. All ventures used GitHub for source code version control and relied on Kanban boards to track progress. Some ventures (I03, I04, I07) utilized Notion, while others (I01) used the product management app Shortcut. One venture (I01, I02) implemented a unique communication strategy using WhatsApp to streamline the development process, specifically for merging pull requests on GitHub.

To unpack the business process evolution, we leveraged the concept of entrepreneurial bricolage, which revealed two types of business process bricolage with digital technologies: *usage of private resources* and *re-configuring existing resources within the venture*.

The first type of business process bricolage we identified was visible in two of our cases. Table 2 gives an overview. Interview I02, for instance, provides an example of

**Table 2.** Usage of private resources for business process execution

<i>Context</i>	<i>Quote</i>
Use of private messaging app WhatsApp to send payslip to employees as part of HR processes	"And apart from that, I somehow get my payslip sent via WhatsApp every month. (Laughs)" (I02)
Use of private short messaging app WhatsApp to inform developers about the progress of their developments in GitHub (venture’s source code version control system) as part of the product development process	"Cooperation [is] sometimes a bit difficult, because people are not there full time and logically don’t always have an exact plan of what’s going on. That’s why we introduced at least the other day that [the founder] always writes in our WhatsApp group when any pull requests have been merged, so that we at least have a rough overview of what’s going on somehow at the moment". (I02)
Use of the CEO’s sibling’s Zoom account to save costs	"I’m using my sister’s Zoom account. She still studies and gets the premium account for free." (I04)

the *usage of private resources* in the HR process. A software developer working in a startup told us that he receives his payslips via WhatsApp messages: “And apart from that, I somehow get my payslip sent via WhatsApp every month” (I02). The founders needed a simple way to communicate with their employees, so they chose to use a private messaging app that was widely available and accepted. When hiring the first employee, they needed to send out payslips (making do) and find a solution by re-purposing their existing resources. They could use the app they already had in place (re-combination of

resources) to send out the payslips conveniently and effectively. This approach allowed them to make the most of what they had rather than invest in new tools or processes.

The second type is *re-configuring existing resources within the venture*. Table 3 lists our findings. An example of this approach is a venture using the collaborative

**Table 3.** Re-configuring existing resources within the venture

<i>Context</i>	<i>Quote</i>
Use of Microsoft Teams (team communications app) to track working hours as part of the payroll process	"And Microsoft teams we still use sometimes, for the stand-ups, and we have this, yeah, timesheet-like thing in there, so you kind of record how much you work." (I02)
Use of Notion (note-taking app) to create and host educational content for employees as part of the product development process	"[...] because people have often asked me, hey, how do I do this now, I don't know how to do it. And before I sit down with people every time for a meeting and explain to them for three quarters of an hour how it works, I thought, you can just make a video explanation of how you do it. And then you have automated it a bit. It's actually working quite well so far, [...] a bit of an education tool." (I03)
For all new business processes: If a new process needs to be added, Notion and existing Notion templates are used and adapted to support it	"Notion is our operating system." (I07), "Notion has templates that we adapt to our needs." (I07), "Notion's functions are not narrow, like Word or PowerPoint, but rather broad." (I07)
Use of Notion (note-taking app) to guide employee onboarding as part of the HR process	"The entire [company] intranet is hosted on Notion. [...] When you start here, all the steps are described. But also the individual teams, Tech, Customer Success, Business, Commercial, for example, all have their sides plus input. FAQs, for example, are also on Notion for the individual teams." (I06)

note-taking app Notion since its inception (I03). As the company expanded and hired more employees, it faced the challenge of teaching new employees how to use its content management system (CMS) to upload content for display in its app (making do). This became too time-consuming for the CTO. Since they face resource constraints, he decided to leverage their existing Notion workspace and created a page with a short video tutorial explaining how to manage content using the CMS to address this issue (re-combining existing resources for a new purpose): "[...] people have often asked me, hey, how do I do this now [...]. And before I sit down with people every time for a meeting and explain to them for three quarters of an hour how it works, I thought, you can just make a video explanation of how you do it. And then you have automated it a bit. It's actually working quite well so far, [...] it's a bit of an education tool" (I03). This solution allowed the company to make the most of its existing resources and re-purpose them for new use rather than investing in new tools or training programs.

## 5 Discussion and Outlook

Our findings indicate that digital ventures use bricolage to create business processes using digital technologies. This involves (1) *usage of existing private resources* or (2) *re-configuring existing resources within the venture*.

Regarding (1), we can confirm the findings of Karanasios et al. (2022), stating that entrepreneurs are using private resources such as micro-loans to afford business

purposes. Regarding (2), however, we noticed that digital ventures seem to use digital technologies with low specificity to arrange business processes (von Briel et al. 2017). Entrepreneurs in our sample utilized versatile tools such as Teams and Notion for various purposes. While Teams is primarily intended for video calls and text messaging, it is also used to track employees' working hours (I02). Notion, a note-taking app, on the other hand, serves as a Kanban board for product development and as a tool for onboarding employees during hiring (I03). Following the argumentation of von Briel et al. (2017), such tools should have a low potential for enabling compression and conservation mechanisms, which might affect their potential to improve organizational efficiency. However, low-specificity digital technologies have a high potential to enable generation and combination mechanisms, making them appropriate resources for the bricolage of business processes. Hence, according to von Briel et al. (2017), early-stage ventures rank efficiency below flexibility when choosing low-specificity tools. Building on this, we conclude that low-specificity technologies are enablers of business process bricolage in early-stage ventures: *The lower the specificity of digital technology, the higher its potential to be used in business processes bricolage in early-stage digital ventures*. This proposition is particularly interesting given that the literature on BPM emphasizes how technology provides a structure for organizing business processes, as exemplified by IT infrastructure alignment (Baiyere et al. 2020). However, in many cases, implementing new digital tools may require actors to adhere to a pre-determined process imposed on them through the use of new technology. In contrast, early-stage digital ventures appear to operate differently. Thanks to the low specificity of digital technology and its editability (Yoo et al. 2010), digital entrepreneurs can leverage digital tools to design and re-organize their business processes in a flexible and improvisational manner. This approach enables them to manage the tension between structure and flexibility. By embracing bricolage, digital ventures construct loosely-structured business processes (BPM perspective) by experimenting with editable technologies to maintain flexibility (digital entrepreneurship perspective). In this finding, we see a clear link to the concept of organizational ambidexterity (March 1991), as digital ventures take initial steps towards structured processes (exploitation) while leaving room for experimentation and improvisation (exploration). Future research could leverage the process-technology-fit framework by Ahmad & Van Looy (2022) to investigate the alignment between technology and business processes in digital ventures at various developmental stages. This study would provide insights into the changing preferences of digital ventures for low-specificity tools as they grow and mature.

Our preliminary findings initially explore how digital ventures apply bricolage to manage their business processes. We examine three key business processes in digital ventures: hiring, sales, and product development. We have chosen these processes because they are essential for the entrepreneurial growth of digital ventures: a digital offering needs to be developed and sold by employees who need to be hired. Therefore, our results are limited to these processes, while others may be present in early-stage digital ventures. In the next phase, we plan to collect additional data from the cases, including digital trace data generated by digital ventures. As our early findings are based on initial observations of our digital venture cases, they are meant to stimulate discussion rather than being considered definitive or broadly applicable results.

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