The ‘Digital Façade’ of Rapidly Growing Entrepreneurial Organizations

Completed Research Paper

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Abstract

Entrepreneurial organizations that grow into larger established enterprises typically undergo periods of rapid growth that are rife with challenges. Although it is clear that digital technologies have been a key driver in organizational transformation for decades, their role in the growth of entrepreneurial organizations is virtually absent in the literature. This paper reports the findings from an exploratory study of 16 entrepreneurial organizations that are undergoing, or have undergone, periods of rapid growth. Our analysis suggests that digital technologies often complement or even substitute for organizational practices commonly associated with enabling growth. From this analysis, we identify one important mechanism whereby digital technologies enable this growth—what we refer to as the “digital façade.” A minimally-implemented digital façade enables companies to loosely couple their activities from the presentation of these activities to customers and partners. This façade provides a space for the organizations to build necessary digital capabilities.

Keywords: Digital entrepreneurship, theory building, organizational growth, loose coupling
Introduction

As they grow into larger organizations, entrepreneurial firms typically go through a stage where they transition from ad-hoc entrepreneurial coordination to mature professional management (Levie and Lichtenstein 2010; Quinn and Cameron 1983). During this important stage, organizations face various challenges and they need to overcome many of the very practices that made them successful when they were newly founded, such as a highly involved founder and informal improvisation (Adizes 1979a). To address challenges of growth, entrepreneurial firms change their culture and modes of organizing to include increased formalization, professionalization, focus on quality, and specialization (Churchill and Lewis 1983; Greiner 1998; Kazanjian 1988; Lippitt and Schmidt 1967). Entrepreneurial organizations are either newly born firms or established firms that are somehow willing and able to consciously transform themselves (Langlois 2007 p. 1120).

Although digital technologies have been the main driver in organizational transformation over the past decades (Yoo et al. 2012), an investigation of their role in the rapid growth of entrepreneurial organizations is virtually absent in the literature. This is problematic, since all areas of contemporary organizations are deeply impacted by digital technologies and digital infrastructures, including areas such as organization design (Zammuto et al. 2007), strategic decision making (Sawyaradaj et al. 2013), and governance (Tilson et al. 2010). Information systems (IS) research has begun to explore how digital technologies affect the early phases of the organizational lifecycle (Davidson and Vaast 2010; Hull et al. 2015) as well as the role of digital technologies in raising funds (Aggarwal et al. 2012; Burtch et al. 2013).

In this paper we extend this body of work to also include the role of digital technologies in the transition to mature organizations. Certainly, digital technologies can aid in formalization, professionalization, quality, specialization, and other practices that enable entrepreneurial organizations to mature, but how does this occur? Do digital technologies affect this period of growth in other ways? What is different about entrepreneurial organizations during these growth points of inflection as compared to established organizations in their use of digital technologies? How, specifically, can digital technologies aid entrepreneurial organizations in the phase of rapid growth?

The organizational transition from a start-up to a medium-sized enterprise is turbulent and involves many changes. During this stage, management, structures, and policies are formed and digital technologies likely shape and are shaped by these transitions as the “magic ingredient that inspires and most often enables contemporary entrepreneurial endeavors” (Del Giudice and Straub 2011 p. iii). Since there is no established theory about the role of digital technologies during this liminal, transitioning stage of growth, an exploratory study is appropriate—one where we can build and extend theory “grounded” in the observation of empirical phenomena (Glaser and Strauss 1967).

In this study, we report on an open-ended exploration of 16 small and medium sized enterprises (SMEs) that are either undergoing a period of growth, or have recently successfully transitioned to a mid-sized, mature organization. Grounded theory methodology (Glaser and Strauss 1967; Strauss and Corbin 1998) is appropriate in situations where extant theory does not directly apply to empirical phenomena. Through our grounded analysis, we find evidence that digital technologies do appear to support many of the practices that have been identified in the literature for supporting the growth of entrepreneurial organizations. Beyond this, however, we characterize a particular way that digital technologies support this growth and develop process theory in this regard. Process theory focuses on sequences of events (Burton-Jones et al. 2014) and our objective is to provide explanation, which is a primary goal of building theory (Gregor 2006). Specifically, our model highlights how entrepreneurial organizations enact a “digital façade,” and how this façade enables them to loosely couple and periodically reconcile their transitioning practices with external stakeholders (primarily customers in our data), while maintaining a stable and professional front to those stakeholders.

The remainder of the paper is structured as follows. In the next section, we introduce the background literature that continuously informed our study during data collection and analysis. Note that we did not begin our research with these ideas—rather, in constant comparison between what we were seeing in the field and the literature; we found these to be important ideas. Therefore, we present the relevant literature on the practices that help organizational growth (from the literature on organizational lifecycle models) in advance of the findings to help the reader understand how our findings of digital technologies are consistent with the literature that does not explicitly attend to digital technologies. We then describe the
research methodology and present and discuss our findings. The paper concludes by highlighting the contributions that our study makes to research and practice.

**Literature Review**

**Organizational Growth Models**

Research on organizational growth often involves models that view the evolution of organizations as a lifecycle, with associated stages that take the organization from inception to maturation or demise. There is neither consensus on the appropriate number of stages, nor their sequence, nor the mechanisms that drive the progress (Levie and Lichtenstein 2010). However, it is generally accepted that growth is a desirable process that most organizations seek to accomplish, and that this growth occurs in stages (Leitch et al. 2010; Whetten 1987).

There is abundant literature on life cycle models, going back decades. Quinn and Cameron (1983) analyzed close to 30 life cycle models and identify four generic stages: entrepreneurial (early innovation, creativity), collectivity (high cohesion, commitment), formalization and control (stability and institutionalization), and elaboration and structure (domain expansion and decentralization). They highlight the importance of the liminal period of collectivity, formalization, and control that is vital to rapid entrepreneurial growth. Since the time of their review, numerous other stage models have been developed. More recently, Levie and Lichtenstein (2010) conducted a detailed literature review on 104 stages of business growth published in the last 45 years and find that most models have three to five stages, but again, their work highlights the way so many elements of an organization transform as entrepreneurial organizations grow rapidly. They find that over time as the growth increases, organizations change their culture and structure, their formalization of systems, and the activities of top managers. Next, we turn to the challenges that organizations face during stages of rapid growth.

**Challenges in Phases of Organizational Growth**

To focus on the transition stage from entrepreneurial to more mature organizations, we review frameworks that inspired ten or more subsequent stage models according to Levie and Lichtenstein (2010). These models include those by Adizes (1979a), Christensen and Scott (1964) as cited in Levie and Liechtenstein (2010), Churchill and Lewis (1983), Greiner (1998), Kazanjian (1988), and Lippitt and Schmidt (1967), as well as a model proposed by Levie and Liechtenstein (2010) as an alternative explanation to the predominant literature. According to their “dynamics states approach” the number of stages in the organizational development path is not predefined and could occur in a variety of sequences.

![Figure 1. The Founder's Trap (adapted from Adizes 1979)](image)

The transition stage is described differently in each model, but there are many parallels across models. Due to space limitations, we will address one of the most well-known models in depth as an example (Adizes 1979a, 1979b, 1988), and then touch upon the findings from the various other models. In his
The seminal work, Adizes (1979a) describes the transition as going from the “Go-Go” stage to the “Adolescent” organization. This transition is critical for the “rebirth” of the organization, which must shed some of the practices that made it successful, but will now impede that growth (Adizes 1988). At this stage, an entrepreneurial organization might fail to develop its administrative system, and as a consequence fall into the so called “Founder’s Trap,” which limits the organization’s growth to only those areas that can be directly managed by a founder who does not delegate (see Figure 1).

The organization is born once it transitions from “Courtship” to “Infant.” In “Courtship,” the physical form of the organization is non-existent and only the ideas about its inception exist. During this time, strong commitment of the founders is a key driving force. When moving to the next phase, the organization becomes a reality and risks are taken in terms of investments. For this reason the keyword describing the “Infant” organization is “sales.” There are no formal structures in place to guide the organization towards systematically generating sales, and people are hired ad hoc based on emerging needs. This is an experimental phase which demands continuous commitment of the founder, who is the only management body at the time. Managerial practice such as planning, hierarchies, or job title definitions typically do not apply to infant organizations.

The next stage, “Go-Go”, reflects the realization of entrepreneurial ideas in terms of products. The struggle from the previous stage to achieve sales is not present anymore. That does not mean that the organization has a structured approach to growth, but rather that the organization is exploiting opportunities as they arise. Thus the orientation is mainly short term, and there is no planned approach to prioritize chances for growth. Also, up to this point the management process was the same as the founder’s decision making process. However, in the “Go-Go” phase, management processes need to become detached from persons and the organization becomes structured around tasks rather than people.

The transition from the “Go-Go” stage to an “Adolescent” organization is critical for the “rebirth” of the organization (Adizes 1988).

<table>
<thead>
<tr>
<th>Table 1. Management Practices during Organizational Growth</th>
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<td>Formalizing activities</td>
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Other lifecycle models are similar to Adizes’ in their treatment of this critical transitional phase, and together they identify several common challenges to be faced in order to make this transition (Christensen and Scott 1964; Churchill and Lewis 1983; Greiner 1998; Kazanjian 1988; Lippitt and Schmidt 1967; and Levie & Lichtenstein 2010). One of the first steps is to institutionalize leadership and design a system that supports the shift in leadership style. The founder must delegate and decentralize activities. Getting past the pathology of the “Founder’s Trap” is essential. Thus, the “Adolescent” organization exhibits success in delegation of authority, change of leadership, and goal displacement. Delegation calls for new incentive
systems, developing policies for budget, and ultimately professional management. The focus is not only on quantity, as during the “Go-Go phase, but dedicating attention to the quality and the way growth is achieved. Naturally, the establishment of administrative practices means temporarily shifting focus from growth to laying the ground for the long run, strategic achievement. This causes tensions as entrepreneurial individuals might perceive the administrative part as of less importance.

Table 1 highlights common management practices identified by the literature to help with this transition. These practices emphasize the need for formalization in terms of institutionalizing policies, systems of control, and structures instead of ad hoc actions (e.g., keeping up with the data is difficult because of all the special deals), professionalization of management, and understanding the relevance of delegation instead of management by intuition. Also, there is a need for more of a focus on quality and improving products and processes, and acquiring the necessary skill set that leads to new employment positions but also specialization of existing ones. One major issue is the management of cash flow, as fixed costs increase through the transition. Further, there is a need for the establishment of planning activities, in particular long term strategic planning. Finally, even though establishing stability, control, and transparency is important, the organization also needs to preserve the entrepreneurial spirit in order to survive through these growth stages and navigate environmental factors (Adizes 1988).

Next, we describe our research method and begin our findings by showing how many of these professional practices can be supported by digital technologies—we then go beyond this with our theory of a digital façade enacted to aid in managing the growth transition of entrepreneurial organizations.

Research Approach

Data Collection and Analysis

The research approach is inductive and is based on a rich empirical foundation to produce novel theoretical insights about the role of digital technologies in the growth phases of entrepreneurial organizations. We chose a grounded theory approach (Strauss and Corbin 1998) to produce theory through intensive engagement with the collected data (Urquhart et al. 2009). Grounded theory development is based on the continuous interplay between collecting and analyzing data (Glaser and Strauss 1967; Strauss and Corbin 1998). Data is analyzed and emerging concepts are used to decide where to sample from next, a process referred to as theoretical sampling (Urquhart 2013). Researchers are active participants, who construct and reconstruct experience and meaning with the respondents (Mills et al. 2008). In this view, the theory is the result of the researcher interacting with the field and is deliberately constructed (Charmaz 2006), “based on conscious decisions and interpretive acts” (Seidel and Urquhart 2013 p. 237). Importantly, the researcher is not seen as a “blank slate”; throughout the process we have thus consulted the literature for possible confirmatory or conflicting explanations (Urquhart and Fernández 2013; Urquhart 2013). This process also resulted in the overview of literature presented in the previous section.

The data collection took place in 16 different organizations from distinct industry sectors, including 20 interviews with the overall length of 19 hours and 38 minutes, and with an average interview time of approximately 59 minutes. To gain in-depth insights, our key informants were mostly the founders of the organizations or were employees in key decision making roles (at vice president or director levels). The interview protocol developed throughout the study and was refined after each round of data collection. In the early stages of the research process, the interviews covered general questions about the respondents, their organizations, as well as digital technologies. During this phase, we allowed the topics to emerge and aimed to avoid being biased by preconceptions. As the interview rounds proceeded, and as further insights from the literature were incorporated, our questions were guided by a lexicon (e.g., important organizational challenges) we drew from the literature and that sensitized us for the discovery of concepts and relationships about particular topics (e.g., how technologies are used to respond to specific organizational challenges). All interviews were recorded, anonymized, and transcribed. We used the NVivo software (version 10) for qualitative data analysis. Though interviews were the key data source, our analysis also included publicly available information about the organizations.
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Theoretical Sampling & Coding

Throughout our research, we engaged in four broad rounds of iterative data collection and analysis. We started with open coding where we identified first concepts. We then proceeded to develop categories (i.e., more abstract concepts) and related those categories to each other. Through this process, we identified two strategies organizations choose in the growth phase and that involve the use of digital technologies: complement and substitute organizational practices. In addition, our data analysis sheds light on the contextual factors that impact on the application of those strategies (e.g., weather the organization is rooted in digital technologies and infrastructure since the beginning or not). In what follows, we provide an overview of how data collection and analysis evolved throughout the study, and how theoretical sampling allowed us to contribute to our theory development.

First, we conducted a set of interviews in different entrepreneurial organizations. We sampled those organizations and respondents where we expected to gain in-depth insight into the role of digital technologies in stages of rapid growth. By “rapid growth” we refer to discontinuous stages of growth at a level much greater than was previously experienced. There is no universal rate for rapid growth, it is always in relation to previous incremental or continuous patterns of growth in that organization. Often this period of rapid growth accompanied the acquisition of a large customer or the release of a surprisingly popular product. All of the organizations that we studied had experienced such growth in their retrievable memory or were currently experiencing such growth. These organizations represent a number of different industry sectors. The organizations from the first round engage with producing sports equipment (Sporting), packaging machines (Packaging), wholesaler for gifts (Gift), and insurance (Sure). All the interviews were open-ended and addressed the role of digital technologies related to processes, products, and business models. After the first analysis cycle we revisited Sporting and Gift to learn more about their growth phase. Sporting was currently undergoing these changes, while Gift has already successfully survived. Through our initial open coding an important theme emerged: the role of digital technologies during phases of rapid growth.

In a second stage, grounded in our understanding from the analysis of the first round of interviews, we engaged with prior literature in the field of entrepreneurship. The literature provided us with a lexicon (including concepts such as formalization, specialization of skill set, establishing planning activities, etc.) we could use to further analyze and make sense of the data. We treated the literature as a sensitizing device (Klein and Myers 1999) in order to remain open and allow for emergence throughout the process. We included additional organizations in the study: a producer of box packaging (Box), a home builder (Housing), a printing house (Printing), a company engaging in the analysis of plant nutrition (Plants), and a special fiber producer (Fiber). In this stage, we started to identify relationships between digital technologies and practices identified in the literature (e.g. establishing planning by implementing a business intelligence system). We found that digital technologies sometimes substitute for organizational practices, or enable those practices. For instance, formalization of activities resulted from the implementation of an ERP system in one case. In other examples, digital technologies facilitated organizational practices that were previously not recognized in the rich body of knowledge on growth in entrepreneurial organizations. All of these organizations, except Fiber, started with minimal attention to digital technologies—only beginning to more intensively relying on digital technologies during the growth phase. In contrast, Fiber intensively invested in robust digital capabilities from the beginning. We constantly made comparisons between incidents within each case and across cases to explore variations in key concepts (Strauss and Corbin 1998). At this stage, most organizations explained what we describe as a “digital façade.” Digital technologies enabled an interface with their customers and partners in a way not previously characterized in the literature. Fiber was an exception that informed our next round of sampling.

In the third round, we extended our sample to additional organizations in order to further develop emergent concepts. In the second round, we had identified one organization that did not follow the digital façade process; it presented a case that was different from the others and could be characterized as a “born digital” organization where IT played a central role right from the organization’s inception. We thus decided to follow up on this idea and the new sample consisted of organizations that relied on digital infrastructures from their early beginnings. One company maintains several Internet portals (Portal). Another company processes payments for ecommerce sites (Financing). Essentially, the business model of these two organizations relies on digital infrastructure and technologies. Both organizations had a
dedicated person/department exclusively in charge of keeping the IT infrastructure running. The question that emerged next was whether digital technologies play a different role in organizations tightly linked to producing or providing software related products and services. In these cases, the business models reflect that the business indeed is entangled with digital technologies. For these born digital organizations, their growth is intrinsically linked to the crucial role digital technologies play.

In the fourth round, we included companies for which digital technologies are both a tool and end product as well as organizations that offer services related to the development, implementation, and post implementation of information systems. We involved a software vendor for franchising (IT Franchise), two ERP software vendors (ERP1 and ERP2), a company offering near shoring software development services (Nearshore), and a business intelligence consultancy (BIConsult). These organizations not only use digital technologies, but offer services related to the development, implementation, and post implementation of digital technologies. Digital technologies are the core of these organizations.

Findings

During the continuous iteration between data analysis and collection on the one hand, and engagement with the existing literature on the other, we identified several core categories, relations between these categories, and contextual factors. Our analysis suggests that (1) digital technologies are often complementary to, or even substitutes of, the organizational practices that are commonly identified with enabling growth. Moreover, digital technologies afford the creation of new organizational practices. Further, (2) many organizations sampled built up a “digital façade”—a digitally established relation to their customers and partners. We also found (3) that organizational growth materializes differently, depending on the time when digital technologies start to play a significant role. We thus distinguish between organizations that are “born digital” and those that later digital capabilities in later stages. We discuss the three key emergent categories of digital practices, digital façade, and temporality of digital capabilities, in turn.


From our data it became clear that digital technologies were complicit in the growth efforts of organizations. Informants continually described the short-term, local benefits of flexibility in tension with the long-term needs of the organization as they scale up. In analyzing the literature simultaneously with data coding, we identified a number of practices (see Table 1 above). Table 2 below provides examples of how digital technologies were used in a variety of ways in a manner consistent with the practices identified in the literature (Note—many of the informants identified similar practices—we just selected one example for illustrative purposes.)

<table>
<thead>
<tr>
<th>Organizational practices</th>
<th>Example quote</th>
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<tr>
<td>Formalizing activities</td>
<td>“So, people knew their areas that they worked in. But there was so much crossover and lack of definition.” [...] “the culture was fly by the seat of our pants. I said no titles no accountability, no responsibility, no definition. [...] “During our go-live...that we did over 7 months which is still aggressive, but it gave us enough time to get business process owners defined, because they hadn’t been. And say what is that you are doing in QuickBooks [accounting software], why are you doing it that way?” (COO, Sporting)</td>
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<td>Professionalizing management</td>
<td>“We have more projects. Difficult to handle, difficult to track, and after that [ERP system implementation] we started to handle those projects in the manner where we know how many consulting days we are actually spending and what is cost side of the projects. We then realized that we are doing that passively. We are dealing with consequences. [...] Then the real answer for that is, okay, we should start assigning people and training people to be project managers.” […] “Planning is the core skill of every project manager, and actually in the company people are doing the planning actually more ad-hoc. Not in the manner that project managers should do that. At that point of time, the company started to invest in trainings and also some seminars and other education events where we started to develop our project management skills.” (CBO, ERP1)</td>
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<td>Shifting towards quality focus</td>
<td>“But above all, the formalization process influenced gaining reputation, by this I mean the official standardization process. In parallel to the ERP implementation we became ISO certified. There are only two companies in the town that have ISO 27000 standards. It is related to handling privacy sensitive data with banks, insurance companies and public institutions.” (Founder, ERP2 company)</td>
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<td>Reaching global optimum</td>
<td>“One of the things we had to tackle is an organization that grew was, developing our series of key process maps.” […] “So, we identified champions or owners of certain areas. And we identified the interaction with each different organization in terms of process mapping. Uh, you know, how different, systems were going to work. And who was responsible for what, so that there was you know, accountability and that helped the development of the software and helped our operation as well, through process and procedure maps.” (Founder, Housing)</td>
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<td>Specializing the skill set</td>
<td>“We have done some off-site training. One of our engineers, the guy that is our IT guy, was fluent in Solid works [3D computer aided design software] when we bought it. So, incrementally, people would go and put their chairs in his office, and just work there for a week. And say oh, how you do this? Oh yeah ok, and you go back to work. First day you are stopping them all day long, the next day...by the fourth or fifth day you have move back out, saying - I got it.” (Founder, Packaging)</td>
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<td>Maintaining liquidity</td>
<td>“It would not be possible to operate in this level without a system like that. I mean also it’s important because we don’t want to keep a huge amount of materials at our stock. For example we track it down in an hour and then we see some materials are more than it’s needed and then we know what we need and if we have enough for maybe next 2 to 3 months, 6 months, it depends” (Director, Printing)</td>
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<td>Establishing planning activities</td>
<td>“Every consultant has to maintain from today - 15 months in advance his utilization. For the current and the next month, on a daily level, and from the month plus 2 onwards, on a monthly level. This has to be refreshed weekly.” […] “It’s also a very hardcore business intelligence approach. I say if a consultant is 2 days free, I want to have the possibility to recognize this. If a customer asks for troubleshooting day, I can offer the consultant in these little time frames.” (Founder, BIConsult)</td>
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Building reputation

“So that they [sub contractors] know that they don’t have dry runs, you know. They don’t go to the job site, they don’t have the information that they need, or it’s not ready, things like that. The reputation that we built through the system with them, was one of reliability for them, that, the information is there. The information is correct. The schedule is right. I know I can show up ... I mean and being able to deliver that and allow them real time wide updates via that web interface is huge. And that builds your reputation on that end with our trade and supply partners.” (Founder, Housing)

Considering environmental influences

“The first one to implement a fully-functional and dynamically-driven e-commerce site [...] so we’re the first one to have the database-driven site where you could do dynamic searches on, characters or things or messages or seasons or whatever, and I mean, that, definitely was advantage because we got in.” (IT Director, Gift)

Retaining entrepreneurial orientation

“It is where the growth is. It’s. It’s helping to stay flexible because it allows us to see the buying pattern of customers and buyers, help to see which products are attracting them to our website where we can make quick adaptation and quick changes to strategy to make sure we’re maximizing efforts in the eCommerce world.” (IT Director, Gift)

In our study, rapid growth refers to the phase when organizations experience an increasing number of employees, generate more sales, and have more transactions to handle. The stories of interview participants describe the phase in various ways. For example, in Sporting the COO described how the existing system (accounting system) “is only designed to do 500 transactions a day. We were, at December when I came, doing up until 3000 transactions a day.” [...] “It was slowing people down, just in day-to-day activities, whether it was an order entry, or finance and accounting trying to get information.” (COO, Sporting). Similarly, the founder of Nearshore described the moment when the company started growing: “When we started to work on outsourcing and opened our outsourcing analysis, then we grew a lot.” [...] “Yes, the last three years, we have worked a lot regarding the organization, how to trace and manage the projects.” [...] “The main thing which has changed is that that we have entered into the new market.”

Upon reflection, the analysis of our data suggests that the previously identified organizational practices (Table 1) are often lagging behind and are established only after digital technologies are already implemented. For example, in Sporting the formalization took place during the implementation of the ERP system. In this case, digital technologies substituted for decisions about assigning responsibilities that are sometimes taken a priori. In ERP1, the system triggered a need for new competencies, team structures, and delegation (professionalizing project management). The newly implemented systems provided insights previously not available and led to a decision to attend trainings for building up project management skills. Furthermore, Gift was a first mover in the industry to implement a dynamic e-commerce website. Over time it resulted in efficiencies and enabled the organization to engage in analytics based on the collected data on the website, however, without integrating their back-end systems.

All these examples indicate the interrelatedness of digitally-enabled practices. However, many of the interviewed organizations seem to compartmentalize their activities while building up capabilities incrementally. It is challenging to constantly navigate between fulfilling contradicting requirements in terms of: focusing on internal stability vs. flexibility and responsiveness to the environment; keeping enough cash flow while making wise decisions about investments in digital technology; rolling out global processes while preserving special local needs.

Consequently, we find that this process often starts by using digital technologies to build up the “façade” towards customers and partners. Entrepreneurial organizations seek to create an image of a professional, mature organization and to appear that way to the outside world. While at the same time, in the background they keep on relying on existing ad-hoc practice as the organization gradually builds up new digital capabilities.
The Digital Façade: Maintaining Customer and Partner Relationships during Rapid Growth

Regardless of the type of organization or the reasons to adopt digital technologies, our analysis suggests that growing entrepreneurial organizations build up a “digital façade.” Traditionally, the term façade refers to the “front of the building” (Merriam Webster Dictionary). In the context of digitization in growing organizations, it is the face to the customers or business partners. Digital technologies become a part of the front stage in entrepreneurial organizations. We observed this phenomenon in organizations from all rounds of data collection using different digital technologies (see Table 3 for examples).

<table>
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<tr>
<th>Digital technology</th>
<th>Example quote</th>
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<td>Electronic Data Interchange (EDI)</td>
<td>“Invoicing was done in QuickBooks as well, except we went live with [major sporting goods retailer] in 2013, and also [another major sporting goods retailer], and that’s where EDI started to become a factor. So we had two partners. The world largest EDI provider, the company called […], offers multiple iterations of EDI interfaces.” […] “You can do whatever you want as long as they get the inbound and get the functional acknowledgement, 997 FA, and then we return the documentation that they require.” (COO, Sporting) “I mean, obviously, EDI is the standard format through exchange of electronic information and, that became a prerequisite, almost a, a price to pay if we wanted to continue with [a large supermarket chain], specifically, but while that was the one customer that was asking for, we also knew that would give us a platform to sell ourselves to other chain accounts.” (IT director, Gift)</td>
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<td>3D Computer Aided Design (CAD)</td>
<td>“Yeah, well the Solid Works designing in 3D versus 2D for the type of the equipment we do is so much easier for both the engineer and the customer. We do a lot of go-to-meetings; we do that on a pretty regular basis” […] “They [the customers] want to have a design review and there is a higher expectation for design reviews today that might have been, you know, ten years ago. And that’s directly related to companies giving us specification packages, like this for a couple of machines (showing the specification). So we have this, and they said, ‘did you do this?’ And we say ‘yeah, let’s have a meeting, we will go through the machines and show you the different things that we’ve done.” (Founder, Packaging)</td>
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“So, every major department had their own separate standalone system. So, we went through a study and, and tried to find the best system. Uh, that fit our organization and, and it’s helped. And we use that and we leveraged it to help us grow. It allowed us to you know, come into the new century in terms of technology. Where it had an integrated web interface. So that our customers could interface into the data, through the web with what they allowed. And because we’re a general contractor, we hire hundreds of sub-contractors to help build our homes. And they allowed us to communicate information easily, to our sub-contractors via this web interface - called the internet tool kit.” “The logistical challenge of getting that all there and communicating that schedule, was the most critical. That was one of the biggest driving forces around, improving our technology. That was that scheduling, because it was so important and critical to driving our efficiency and the numbers of homes we were able to build in a year.” (Founder, Housing)

“In all the website was, was general data. You couldn’t do anything on it. It was just like sheets of paper. It was no different than a flier. The first time you could actually use the website, it was about, it was about nine...eight or nine years ago.” [...] “I think they started getting requests for it. You know you hear about something and somebody kept asking, you know, “Can I get this online because most of this stuff is generated from marijuana growers because if we emailed stuff to a specific IP address...So people, they were afraid they were going to get tracked to whatever they were checking their email and, whatever so we started doing it where they could just log on and look at it that way. And they had their own specific ID and password.” (Director of Operations, Plant)

From the example quotations, it is clear that the organizations we studied started with building up a digital façade, but then streamlined other processes in turn (following the order in Table 3).

Sporting started working with the big distributors of sporting goods, and EDI was a precondition for that relationship. Nevertheless, behind the scenes the data was manually entered, exported in one data format and imported in another one to match the existing accounting software. The connections between the systems were patched, manually-intensive, and far from being integrated. However, Sporting started gradually bringing the rest of their operations up to date by implementing an ERP system, thereby justifying the need for a new warehouse system by using examples of inefficiencies due to manual parts of the process. Another organization that implemented EDI quite early in order to maintain the relation with a large supermarket chain is Gift. This organization sells decorative objects, flowers, and balloons to other businesses. In the beginning, it was a precondition to implement EDI, but then it became a capability the organization utilized to establish business with other partners.

Packaging initially wanted to use 3D drawings mainly to fulfill a particular customer’s requirements for seeing machine prototypes in real time and doing design reviews. Behind the digital 3D drawing software, however, there was no integration between the design and manufacturing activities as the production was not digitized. Nevertheless, Packaging introduced a vault based system used for the designers to check in and out. This improved the process and allowed for reusing parts and increasing process transparency and quality.

In case of Housing, the façade was built up towards the partners. They needed to make sure that different subcontractors had easy access to information through a web interface based scheduling and monitoring system which triggered them to rethink their business including their internal processes. Similarly, Plant, an analytic agricultural laboratory, decided to move away from delivering results per post or email. Gradually, they started storing the results, assuring their customers’ data security, and providing comparative analyses across previously stored reports.

Throughout these cases the decisions about the façade further influenced the development of digital capabilities in the organization. This refers to both IT skills that were built up over the time in the organization and further investments in digital technologies. In developing digital skills, for example in Gift, the IT director pointed out that there was no IS department in the beginning (see Table 4). First, they
started with EDI, but then gradually moved to develop their own e-commerce website. Over time, the e-commerce unit became a separate IT department entity reporting to the IT director. Next to digital skills, the organizations further invested in IT systems to develop a corporate wide infrastructure. Sporting was going through a lot of changes and planned for developing a digital infrastructure in terms of future integration between EDI and the ERP system. EDI as the face to the distributor was largely disconnected from the rest of the IT landscape. As the organization grew, the implementation of the ERP system followed, but still not commutating with EDI and also not incorporating all necessary modules to ensure that key operations are running efficiently.

| Table 4. The Indirect Effect of the “Digital Façade” on Building up Digital Capabilities |
|---------------------------------|-----------------------------------------------|
| Digital skills                  | “Well, it was a combination. It was somewhat gradual. So, back when we started trading with the big players, there really still wasn’t much of an IS department” […] “So, within the overall organization of the eCommerce department - eCommerce strategy in general, as far as the business as a whole, the analytics from the website impacted greatly.” […] (IT director, Gift) |
| Digital infrastructure          | “So, all of these data [from the ERP system] will allow me to plan short, mid, and long-term. So, these data will validate my need for a warehouse management system because I’ll be able to tell you I’m shipping on cancel date every month.” […] “So what I was told [about the ERP system] was obviously it’s a very affordable, scalable platform.” […] “Um, but it is not out of the box EDI-ready.” […] “So, there's customization that's gonna have to be done, or just...It [Enterprise system] would be integrated right in. So, what the bigger guys do is that you’ll have...Everything is in X12. It will go into an intermediate file within your ERP system where you can do any sort of data scrub.” (COO, Sporting) |

So far we have focused on organizations that acquired digital capabilities during their growth. However, we did find some organizations that came into existence rooted in digital capabilities—often with business models rooted in digital infrastructures. To better understand the distinction between “born digital” and “grown digital” organizations we provide illustrations from the data in the next section.

“Born Digital” vs. “Grown Digital” Organizations

Born digital organizations are already embedded in digital technologies and infrastructures when they enter stages of rapid growth. It might be that their business model dictates early IT capabilities and associated explicitly defined processes. In contrast, organizations that are “grown digital” typically start off with paper based manual processes, without structured IT capabilities in the organization, and thus need to hire additional IT related staff during the growth period. Table 5 provides an overview.

<table>
<thead>
<tr>
<th>Table 5. “Born Digital” vs. “Grown Digital” Organizations</th>
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<tr>
<td>Role of digital capabilities</td>
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<td>Growth-related organizational practices are embedded in digital technologies and infrastructures.</td>
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<td>Acquisition of digital capabilities</td>
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<td>The acquisition of digital capabilities often starts from the investment in a “digital façade.”</td>
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<table>
<thead>
<tr>
<th>Role of IT-related staff</th>
<th>Required from the beginning on.</th>
<th>May be hired during growth period as the organization builds up digital capability.</th>
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The organizations we described in the previous section acquired digital capabilities over time, often starting from the investment in a “digital façade” that they perceived the most relevant, or that certain customers demanded. The defining characteristic of this sort of enterprise is that in the beginning many processes are manual and digitized only during stages of growth. In contrast, “born digital” organizations are rooted in digital technologies and digital options are built into their DNA. These organizations are structured and professionalized in a way that is rooted in digital technologies. Since the key areas of the organization are imprinted in the digital, the growth involves the constant utilization of digital options. Our analysis indicates two main reasons for the existence of “born digital” organizations (see Table 6). The analysis of our data thus suggests that the investment into a digital façade is typically found in “grown digital” organizations. However, it might well be the case that born digital organizations invest in digital façades in later stages of growth.

Table 6. Characteristics of “Born Digital” Organizations

<table>
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<tr>
<th>Conditions</th>
<th>Example quote</th>
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| No existing system | “In the market there was no system which can handle all the different parts in an automatic way that we can scale up. Okay? So, that was the reason why we set up, started developing a tool.” [...] By the way this was together with our only IT developer who was a student worker. You know drawing down the first processes, how it could look like” (Founder, Financing)  
“So I had to go there and find out about what business model, what they're doing at the moment.” [...] “I modeled the whole business and then based on these models I developed a system.” (Software developer, Financing)  
“Because, when we started we didn’t know the market, we were disrupting the market, before us people used job advertisements in the newspapers. We came on the Internet and our main business was to inform the people and stop them to use paper and come to the Internet. And this was the biggest task.” (Founder, Portal) |
| Founder’s vision to grow and structure | “Right. So, two key reasons. One is paranoia about where the data is because I used to worry about people keeping stuff in their Excel spreadsheets and their own computers and then losing it. And the second reason was I always believed that I would be big. And when I would be big, to integrate a whole bunch of dysfunctional units would be more painful than just buying it up front and living it. So those were the two biggest reasons.” (Founder, Fiber)  
“Yes. It’s quite easy. I’m a very simple man, and if I don’t organize and structure it, I’m getting lost. Therefore I’m organizing everything from the very beginning if possible. If you organize it and if you have a clear structure how you do, you can control it and you can steer it.” (Founder, BIConsult) |

Discussion

Early work on the role of digital technologies in small businesses suggested that information requirements become more sophisticated as organizations grow (Kagan et al. 1990). Some studies looked at particular industry sectors and identified factors that determine the propensity of organizations to adopt software technology (Pierre-André and Raymond 1994). The goal of this study is to regard the specific context of entrepreneurial organizations, thereby considering the whole range of different digital technologies. There seems to be no particular sequence in which organizations adopt technologies in each particular stage. The reason is that the role entrepreneurial organizations assign to different classes of technologies very much differs. Nevertheless, rich empirical insights point us to certain patterns in the growth process.

The key finding from this research involves the observation that many organizations used digital technologies as a sort of “façade” through which they interacted with customers—giving the appearance of
a professional, mature company—while, at the same time, they scrambled to deliver according to those customer and partner expectations using many of the old ad-hoc processes that they used in the past. Through their role as a façade, digital technologies carve out a space for organizations to build greater professionalism and to develop capabilities that they will need as they grow. Sporting adopted EDI which enabled them to seamlessly integrate with the largest sporting goods retailers and to fit the integrated business processes of those retailers. But this integration did not run through all of Sporting’s processes. They took the information from the EDI system and followed their old processes to deliver their product. At the same time, Sporting used the additional cash flow to fund the implementation of an enterprise-wide ERP system that will one day enable them to fully integrate with their customers.

In another example, Packaging adopted a three-dimensional computer-aided design system (SolidWorks) for the sole purpose of interacting with a large customer during design meetings. Over time, as they acquired capabilities with this new digital tool, they adopted it for all of their product designs and improved the quality and documentation for their engineering. Other examples abound in our data. Housing implemented a scheduling system to keep track of subcontractors for the customer—then over time this system helped them run their organizations. Gift had an ecommerce website before its competitors—enabling rapid growth and very professional relationships with customers, while they were still following their traditional ways of delivering the product. ERP1 implemented a customer relationship management system (CRM) but then as a consequence they had to restructure the whole software development process and eventually switch from customer based versions to yearly releases. Ultimately, they also adopted an open source versioning software to keep track of the changes. Printing implemented a warehouse management system to become more up to speed in providing information to their customers about the status of their order. As a result they gained insights to their operations and now plan to implement a production planning system as well.

Figure 2 is an illustration of a process model of the digital façade of fast-growing entrepreneurial organizations. Organizations explore and adopt technologies, often to service a particular customer, then use this technology for the sole purpose of intermediating or supporting some interactions with that customer, while enabling the company to maintain its ad-hoc practices. Providing this digital façade then requires building up capabilities around the digital technologies, which support the professionalization of the organization, which then supports stronger, integrated relationships with customers, in turn. This model has implications for the process of building capabilities while satisfying many different—often divergent—requirements. Further, it provides some insight into the second-order, or indirect, effects of digital technologies in entrepreneurial contexts. Finally, by theorizing about exceptions, this work also distinguishes dramatically between those organizations that are “born digital” and those that build digital capabilities over time. Next we will discuss each of these points followed by relevant propositions.
Organizations in stages of rapid growth need to reconcile multiple imperatives simultaneously, such as:

- **Cash flow and fixed costs**: As entrepreneurial organizations go through different stages of the lifecycle, they need to professionalize their managerial practices and formalize structures, while at the same time staying in business and maintain adequate levels of cash flow (Churchill and Lewis 1983). Cash is precisely what growing organizations need to professionalize, because these practices carry overhead that entrepreneurial firms are not accustomed to. Many entrepreneurial organizations minimize committing to fixed costs, whereas large, established organizations tend to spread fixed costs across their activities to take advantage of economies of scale and scope.

- **Practices and stages**: The practices that made organizations successful in one stage in the lifecycle may undermine organizational performance in subsequent stages (Greiner 1998). A classic example is the highly involved founder that becomes a micromanaging hindrance as an organization scales (Adizes 1979a). Other examples might involve the flexible, ad hoc practices that allow organizations to be responsive to customers early in the lifecycle, but then actually undermine the organization’s ability to meet customer demand at scale.

- **Local and global optima**: An issue for all organizations, which is especially important for entrepreneurial organizations, is reconciling what is needed locally and what is good for the company overall, or in the long-term. “Many ventures experience a sequence of functionally localized problems as each function faces the difficulty of building an efficient and effective task system” (Kazanjian 1988 p. 264). Large established companies create ways to reconcile local efficiency with the organization’s global needs (that is, perhaps, the central role of the manager, see Thompson 2011). In early stage entrepreneurial firms, the two are closely aligned and no practices are well-established for resolving issues between local and global imperatives, and must thus be developed.

- **Core and peripheral process**: The core processes of organizations are those that contribute the most added value to the business. Early stages of growth are very much focused on improving products and services. This is perceived as key to success and establishes a culture where “product is the king.” However, as the organization grows, the differentiator to competitors sometimes lies in streamlining peripheral processes such as operations and distribution channels. Thus, there is a constant reconsideration of both these aspects that causes an ongoing tension.

What we find is that by putting a digital “face” on the organization to its customers and suppliers, organizations can essentially create a space for working through the different imperatives until such a time that appropriate digital capabilities and professional practice can be established. From the practices we identified in the literature that help organizations mature—such as maintaining an entrepreneurial orientation and liquidity—some are directly opposed to increased structure, formalization, and oftentimes quality and reputation-building programs. A digital façade enables minimum investment, impinging less on cash flows—while allowing the organization to loosely couple (Orton and Weick 1990) its practices from this system. This form of loose coupling—where actions are distinct from their presentations in order to comply with contradicting institutional requirements—is a fundamental way to reconcile conflicting imperatives in institutional analyses of organizations (Meyer and Rowan 1977), and has recently been used to show how individuals can reconcile their activity with organizational systems in the information systems literature (e.g., Berente and Yoo 2012; Berente et al. 2010). Satisfactory presentation of a “front space” often enables individuals a range of activities in their “back spaces” (Goffman 1959). This leads to our first proposition:

**Proposition 1**: Minimal implementation of digital technologies for the purposes of interacting with customers and partners (i.e., “digital façade”) enable organizations to work through multiple tensions and conflicting imperatives by loosely coupling their activity from the presentation of that activity to those customers and partners.

Our analysis also points to a possible relationship between professionalization and long-term success, as well as how digital technologies are complicit in this professionalization. By the need to implement EDI for Sporting, or Solid Works CAD for Packaging, these organizations started building capabilities. Once they have these capabilities they were able to offer those capabilities to other customers to get more business (e.g., Sporting getting a second large retail customer) or do things to improve the quality of their work in other areas (e.g., Packaging using Solid Works for all of their engineering activity). What starts as a minimal implementation results in capability building. This capability building, in turn, enables further business or improved professionalization. We conceive of this as the “second-order,” or indirect, effect of
a digital façade. What is implemented superficially or minimally at first, eventually leads to the very professionalization that enables the company to mature—through the mechanism of acquiring digital capabilities. Grounded in our analysis of data and engagement with prior theory, we put forward another key proposition that emerges from our study:

**Proposition 2:** The direct (first order) effect of a digital façade involves meeting minimum requirements for a particular customer or partner; however, the indirect (second order) effect of a digital façade involves increased professionalization, through the mechanisms (mediator) of building digital capabilities.

This insight builds upon the typical way digital capabilities are thought to enable entrepreneurial action. Typically, organizations with established structures and developed practices have more difficulties in remaining entrepreneurial and seizing digital opportunities. Their agility or “ability to detect and seize market opportunities with speed and surprise” (Sambamurthy et al. 2003 p. 238) often poses a challenge. Existing theory highlights that initial experiences with investing in digital technologies often influence the agility of the organization in seizing new IT-based opportunities and building up related competencies in remaining entrepreneurial (Sambamurthy et al. 2003). The digital capabilities act as a platform for subsequent activity—not only in the form of agility, but also in the form of professionalization.

This distinction between organizations with or without digital capabilities is common in IS research. Established organizations are typically thought to build these capabilities over time, and those that do so have better outcomes. This view is very consistent with our model of the digital façade. However, this does not account for those organizations that are born digital. Of course, software companies in our sample are clearly born digital, but they are not the only sorts of companies in this category. Take Fiber, for example—a manufacturer of foam products. This organization was founded with large-company processes: world-class ERP, a business process mindset, lean manufacturing principles, etc. The founder had experience in large-scale established organizations and brought their professional practices to bear in his organization from the first day—resisting the temptation to be too flexible and ad hoc. The result was that digital capabilities and associated professionalism was there from the outset. In these situations of organizations that are digital from the outset, if they are to survive and grow, they must create business models and cost structures that can absorb higher fixed costs associated with the professionalization. Therefore, we did not find evidence for a need for the digital façade in the same way other organizations use it; instead, we found that “born digital” organizations did not build a digital façade:

**Proposition 3:** The more an organization is “born digital,” (i.e. founded with digital capabilities fundamental to the business model) the less the organization will require a digital façade during its liminal period of rapid growth.

**Implications for Research and Practice**

Our study has important implications for both research and practice. Through our work, we provide an initial theory of the “digital façade” that entrepreneurial organizations create in stages of rapid growth. The theory explains how entrepreneurial organizations enact a “digital façade” and how this enables them to loosely couple and periodically reconcile their transitioning practices while maintaining a stable and professional front to their customers. We thus contribute to the body of knowledge on organizational growth by shedding light on the more specific role of digital technologies in early stages of the organizational lifecycle. We summarize our findings in three key propositions emerging from our analysis, which provide a logical point of departure for future inquiry. Specifically, future research must investigate the more specific relationships between various digital capabilities and the digital façade. Doing so, there is a potential in linking current insights to specific features of digital artifacts (Kallinikos et al. 2013) as well as the literature on digital infrastructures (Tilson et al. 2010). While the digital façade does not play a major role in early phases of growth in organizations that are “born digital,” at least not in our sample, it will be interesting to see whether there are other stages in the organizational lifecycle where organizations build a digital façade, and for what purpose. Future studies could further apply the proposed theoretical model in different settings (e.g., in different industries) and with both “born digital” and “grown digital” organizations to further corroborate our findings and define the model’s boundary conditions.

For practitioners, our study likewise suggests that building a digital façade is an important strategy to reconcile transitioning practices while maintaining a stable and professional front to their customers.
Such knowledge becomes increasingly important in the digital age where organizations across industries automate and digitize their practices. Importantly, our study suggests that organizations can benefit from indirect (i.e., second order) effects of building a digital façade in terms of increased professionalization through building digital capabilities. As a consequence, decisions about the façade will influence the further development of digital capabilities in the organization, which means that it requires a very thorough evaluation process of possible IT solutions. However, there may be also potential threats that organizations can face due to building the façade. Overall, it may be too ambitious attempt in terms of the image that the façade emits and thus could fire back at the organization that cannot live up to the expectations and upgrade the organizations’ digital capabilities. Also, digital technologies constituting the façade might be too advanced for the organization to be able to gradually build up capabilities in the back end. Moreover, during the first phase of growth, organizations shift from ad hoc and short term planning to rather strategic decisions, and in case the organization does not succeed in switching from an ad hoc to a planning mode, the digital façade could be used to cover up short term deficiencies rather than become a chance for further digital development.

Conclusion

Organizational growth is generally considered to be desirable and important (Leitch et al. 2010; Whetten 1987). Business growth is a core topic in entrepreneurship and organization theory (Shane and Venkataraman 2000; Van de Ven and Poole 1995). For this reason, the point in time when the firm undergoes sudden changes and needs to take action to propel in growth is highly relevant for both single organizations and economic growth. Regardless if the stages follow each other in an iterative manner or are recursive, there is general agreement that there is a transition in the rapid growth of organizations that is distinguishable from other times during the organization’s lifetime. In this research, we have set out to build theory on the role of digital technologies during this critical transition point. In doing so, we contribute to the burgeoning research on the role of IT in entrepreneurial organizations and digital entrepreneurship (Davidson and Vaast 2010; Kelestyn and Henfridsson 2014). We hope that this will inform subsequent research in this important domain.

References

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