Difficulties to digitalize: ambidexterity challenges in law firms

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Difficulties to digitalize: ambidexterity challenges in law firms

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Abstract

Purpose – This paper aims to understand what prevents established law firms from embracing digitalization and discusses barriers to solving the emerging ambidexterity problem. Law firms have been organized in the same way for decades. However, digital opportunities are emerging and new competitors are challenging established firms. This presents established law firms with an ambidexterity problem: How can law firms simultaneously uphold their successful way of working while entering a new world of digitalization, artificial intelligence (AI) and machine learning?

Design/methodology/approach – Previous research suggests that law firms are slow in digital transformation, compared to other Professional Service Firms (PSFs). In this paper, the authors explore why this happens. Interview data from representatives in law firms are complemented with data from architects as well as legal industry data and field notes. The data have been analyzed to spot patterns and emerging themes.

Findings – The authors find that established law firms face structural and cultural barriers to applying ambidextrous solutions. When comparing law firms with architecture firms, the authors see that while established architecture firms have combined digital exploration with ongoing exploitation, established law firms have focused on exploitation, leaving digital exploration to new legal tech firms. This difference can be attributed to industry context and professional culture.

Originality/value – This paper shows that both structural and contextual ambidexterity is a challenge for established law firms. This paper contributes to the understanding of barriers to embrace digital technology, and supports practitioners in efforts to remove these barriers.

Keywords Ambidexterity, Digital exploration, Digitalization, Law firms, Legal tech firms, Professional service firms

Paper type Research paper

Introduction

Digitalization, with an increased implementation of digital technologies, is impacting all parts of the economy and driving a major transformation of society at large (Reis *et al.*, 2018). Digital technologies such as information and communication technologies (ICT), artificial

intelligence (AI), machine learning and blockchain are reshaping industries and firms across the globe (Kagermann, 2015). However, the relevance, and timing, of different technologies differs between industries (Manyika *et al.*, 2013). While digital technologies were introduced in manufacturing and agriculture decades ago, they have only more recently started to affect service industries (Carlborg *et al.*, 2014; Brynjolfsson and McAfee, 2014). Service industries are now at an "inflection point" and currently experiencing major transformations driven by digital technologies (Wirtz *et al.*, 2018).

This is particularly pressing in professional service industries that have resisted change in the past (Susskind and Susskind, 2015; Kronblad, 2020a). In fact, digitalization carries particular potential for change in professional service industries such as law, auditing, marketing and architecture which deliver services of an intellectual nature and mainly create value from intellectual capital (von Nordenflycht, 2010; Barrett *et al.*, 2015; Pemer, 2020). Here, digitalization has the potential to disrupt the nature of intellectual work, for example replacing human intelligence with AI (Brynjolfsson and McAfee, 2014). Human work thus faces the risk of being replaced not only regarding mechanical tasks but also more complex work tasks (Huang and Rust, 2018).

In this context, it is vital for established firms to adapt and respond innovatively. Established firms, however, face a particular challenge in exploring new digital opportunities since they simultaneously need to refine current practices and business models to excel in increasingly competitive markets. This means that professional firms need to organize in new ways if they are to succeed with both exploitation and exploration – a construct that is often referred to as ambidextrous organizations and ambidextrous solutions (O'Reilly and Tushman, 2013; Gibson and Birkinshaw, 2004; Papachroni *et al.*, 2016; Duncan, 1976; Stettner and Lavie, 2014).

Applying these ambidextrous solutions (Gibson and Birkinshaw, 2004) as a response to digitalization is, however, not equally viable in all industries. While firms in some professional industries thrive and can successfully incorporate the necessary changes into current structures and cultures, established firms in other industries struggle (Smets *et al.*, 2017; Kronblad, 2020a). The reasons for this have not been fully investigated.

In this paper, we strive to understand why established law firms seem to experience greater difficulties in exploring the opportunities of digitalization than other PSFs. We study this issue by investigating barriers to ambidextrous solutions. While we focus on law firms, we also use data from architecture firms to contrast their responses to digitalization. Although both these professional industries have been shown to have many similarities (von Nordenflycht, 2010), their firms have responded quite differently to the introduction of digital technologies (Pemer, 2020). Previous research has not provided clear answers as to why this happens and why some firms (in our case represented by established law firms) struggle more than others in implementing ambidextrous solutions. We, therefore, ask: What factors make established law firms less inclined [than comparable Professional Service Firms (PSFs)] to implement ambidextrous solutions as a response to digitalization?

We view our study as an example of phenomenon-driven research (Schwarz and Stensaker, 2016). This means that we focus on a practical problem and strive to understand this problem through empirical and theoretical investigation. In this paper, the phenomenon at hand is understood through a lens of organizational ambidexterity (Gibson and Birkinshaw, 2004; O'Reilly and Tushman, 2013; Papachroni *et al.*, 2016) and through understanding digitalization as a force of disruption and change (Manyika *et al.*, 2013; Kronblad and Pregmark, 2019; Davenport and Westerman, 2018).

We find that there are factors in established law firms that make both structural (Smith *et al.*, 2010; Tushman and O'Reilly, 1996) and contextual ambidexterity (Gibson and Birkinshaw, 2004) challenging. This study indicates that industry context and professional culture are highly relevant for this and that specifics within the context and culture can

determine whether the organizational set up will enable or hinder digital exploration. Hence, this paper explains why established law firms have been slow to react to the digital transformation (Christensen, 1997; Adner, 2002; Kronblad, 2020a) and why they continuously fail to fully explore digital opportunities.

Theoretical frame

The context in which firms are operating is changing fundamentally (Pasmore *et al.*, 2019; Reeves and Deimler, 2011) due to disruptive digital forces (Susskind and Susskind, 2015; Kronblad, 2020a). In service industries, this places new demands on organizations to leverage technology and adjust value propositions (Ostrom *et al.*, 2015; Wirtz *et al.*, 2018) and business models (Li, 2020), which leads to an increased need to explore new opportunities while exploiting current models.

This section presents an overview of the context of PSFs. It continues with a review of literature on the digital transformation of this context (Davenport and Westerman, 2018; Reis *et al.*, 2018). Thereafter, we present literature on organizational ambidexterity (Gibson and Birkinshaw, 2004; O'Reilly and Tushman, 2013; Pregmark, 2019).

Law firms and other PSFs: external and internal context

In this paper, we focus on the organizational response of law firms to digitalization. To understand this specific context and the barriers to change in this specific context, we need to understand what sets law firms apart from other firms. To do this, we turn to literature on PSFs (Løwendahl, 2009; von Nordenflycht, 2010; Pemer, 2020; Castaldi and Giarratana, 2018; Brescia, 2016; Kronblad, 2020b). Law firms are, together with architecture firms and auditing firms, often depicted and categorized as Classic PSFs that share three common distinctive characteristics: high knowledge intensity, low capital intensity and professionalized workforces (von Nordenflycht, 2010). These characteristics have determined the preferred ways of organizing in law firms, as well as dictated the practices and business models the firms have employed. This means that the classic PSFs are often organized as professional partnerships where skilled individuals provide tailored expert services to clients on an hourly basis (Løwendahl, 2009).

In these industries, knowledge intensity means that the foundation of their value creation is embedded in human capital. Low capital intensity implies that little else is needed than the human capital (i.e. no factories or expensive inventory), which translates into low start-up costs (Løwendahl, 2009), and the professionalization of the workforces is indicative of homogenous professional expertise and self-control over markets via professional associations.

In essence, the professional self-regulation enables monopolies where associated professionals, in return for following the rules and regulations, gain a stamp of legitimacy and access to the controlled market (von Nordenflycht, 2010). The combination of high knowledge intensity and strong professional control of knowledge further leads to an opaque quality of service delivery (von Nordenflycht, 2010). This is particularly relevant with regard to legal services, where it is almost impossible for a non-lawyer client to assess the quality of the service provided (Løwendahl, 2009). The opaque quality has increased the importance of other factors for the assessment of quality in legal delivery, in particular bonding, reputation, appearance and the expression of ethical codes (Løwendahl, 2009). Here there is a major difference between law firms and other types of firms considered Classic PSFs. In the architecture industry, for example, the architectural service delivery, the quality of the realization (i.e. the building that is the result of the architectural drawing), can be assessed by the client, while the quality of the conception is peer reviewed (Winch and Schneider, 1993).

However, despite this difference in delivery, both law firms and architecture firms are considered Classic PSFs and have shared the common business model of providing clients with services and billing on an hourly basis, with human input being the main determining factor for value creation. In addition, both law firms and architecture firms have typically been organized as professional partnerships (Maister, 2003). Moreover, both industries are mono-professional (Empson, 2007), meaning that the professionals share one knowledge base and have one dominating professional culture and identity (von Nordenflycht, 2010). Over time, however, architects, more than lawyers, have found a need to collaborate with other professionals, such as building engineers, in the realization of their projects. This suggests that although there are clear similarities between these two PSFs, their organizational systems (Galbraith, 2014) differ in terms of strategy, structures, processes and culture.

Digitalization as a driver of change and innovation in PSFs

Digitalization has led to a major industrial transformation (Reis *et al.*, 2018) similar to previous industrial shifts marked by the introduction of the steam machine, electricity and the computer (Kagermann, 2015). The digital transformation entails the increased use of digital technology and solutions that are mutually reinforcing and constantly evolving (Manyika *et al.*, 2013). In the case of firms, digitalization is not something that can simply be implemented; it has multifaceted implications that involve more than technology. Firms therefore need to consider how the implementation of technology will change the business as a whole, which requires them to reconsider how they mix people, machines and business processes (Davenport and Westerman, 2018). Such transformations require them to overcome previously established barriers to change. These barriers include a lack of capabilities (Matt *et al.*, 2015), power alignment with old models (Kronblad and Pregmark, 2019) and a lack of system thinking around technological advancements (Davenport and Westerman, 2018). Furthermore, there are emotional barriers to change that can influence how individuals, and thereby firms, respond, such as fear of losing status, power or current relationships (Beer, 2007).

While digital automation was first applied in manufacturing industries and increasingly replaced workers in manufacturing and agriculture, the current trends (such as AI and machine learning) are increasingly also challenging the workers in creative industries. This implies that we have entered into a Second Machine Age (Brynjolfsson and McAfee, 2014). While this has huge potential for professional service industries, it is also putting them under pressure to transform (Christensen *et al.*, 2013; Holmlund *et al.*, 2017). Many researchers agree that digital forces imply a massive shift in how the work in PSFs is done (Huang and Rust, 2018; Kronblad, 2020a, 2020b).

The ongoing transformation requires the implementation of a large variety of digital technologies (Lanzolla *et al.*, 2018). Naturally, these technologies have varying relevance for different industries (Manyika *et al.*, 2013) and even for industries that share many of the same characteristics (von Nordenflycht, 2010; Susskind and Susskind, 2015). It is clear that digitalization in the legal industry differs in relation to other similar industries.

Within the legal industry, ICT and digital tools such as email and electronic search tools are highly relevant and digitalization carries the potential to simplify work processes and enable more to be done in a shorter time (Brescia, 2016). The use of digital platforms enables new areas for collaboration with clients and new means of production, marketing and delivery (van Alstyne *et al.*, 2016). The nature of legal text (and the vast number of legal documents, court verdicts etc.) means the legal industry is subject to technology that targets big data and machine learning (Susskind and Susskind, 2015). Furthermore, blockchain technology is increasingly being applied in developing smart contracts (Ebenhoch, 2018).

In the architectural industry, on the other hand, digitalization involves not only an increased use of ICT, but also the introduction of advanced architectural design tools, 3D-printers and new technology for virtual and augmented reality, as well as new opportunities in technologies for

increased connectivity and the Internet of things (Ramilo and Embi, 2014; Susskind and Susskind, 2015). The digital transformation within the architectural industry continues the previous journey of computerization (which started in the 1980s with the implementation of computer-aided design (CAD)) (Winch and Schneider, 1993). Digitalization entails the introduction of different technologies that carry different risks and opportunities in these professional industries. Below, the technologies that have been implemented in and shown to have a digital potential for, law firms are summarized and contrasted with the implementation in architecture firms (see Table 1).

	Law firms	Architecture firms
Digital technologies	ICT, AI, machine learning, big data and blockchain	ICT, IoT, Connectivity, VR, AR and 3D-printing
Digital potential	New legal areas, new market positioning, efficient production, higher quality, new products, services and business models	Global reach, smart building (housing/cities) efficient processes, better quality, new products and financial flows

Table 1.
Summary of implemented technologies and digitalization potential in the two industries

It is clear that this implementation of digital technologies has put PSFs in a position where they constantly need to explore and find radically new ways of working (Kronblad and Pregmark, 2019) while, at the same time, they continue to exploit their current model where revenues are still strong. Hence, they need to implement ambidextrous solutions.

Ambidexterity – an overview of solutions to explore and exploit
Organizational ambidexterity, which refers to an organization's ability to simultaneously explore new possibilities for the future and exploit the current model, is a well-researched topic (Birkinshaw and Gibson, 2004; Duncan, 1976; March, 1991; Kaulio *et al.*, 2017; O'Reilly and Tushman, 2013; Tushman and O'Reilly, 1996; Sok *et al.*, 2022). The problem is framed by March (1991, p. 105): "The basic problem confronting an organization is to engage in sufficient exploitation to ensure its current viability and, at the same time devote enough energy to exploration to ensure future viability." O'Reilly and Tushman (2013, p. 234) describe ambidexterity as: "The ability of an organization to both explore and exploit – to compete in mature technologies and markets where efficiency, control, and incremental improvement are prized and to also compete in new technologies and markets where flexibility, autonomy, and experimentation are needed". O'Reilly and Tushman (2013) write that successfully achieving organizational ambidexterity is related to outcomes such as sales growth, innovation and company survival – especially under conditions of market uncertainty and technological disruption.

Previous research has discussed how organizational ambidexterity can be achieved and three main categories can be found: structural ambidexterity (Smith *et al.*, 2010; Tushman and O'Reilly, 1996), contextual ambidexterity (Birkinshaw and Gibson, 2004; Fredberg and Pregmark, 2016) and sequential ambidexterity (Duncan, 1976). Although sequential ambidexterity might be effective at project level, it is often too complex and/or too slow to deploy on an organizational level (Chen, 2017). Therefore, this paper, which investigates an industry transition and the response from firms, will focus only on structural and contextual ambidexterity. Table 2 provides an overview of different perspectives of ambidexterity.

Structural ambidexterity – exploring and exploiting in different structures. Structural ambidexterity is achieved through a structural separation of exploration and exploitation-oriented work (Chen, 2017; O'Reilly and Tushman, 2013). Some authors argue that structural separation in different entities is the most practical solution, since it allows the development of two different alignments in terms of strategy, structures, processes and competencies

Ambidexterity focus	Authors	Contributions
Defining concepts	Duncan (1976) March (1991)	Discussing and defining differences regarding learning required for exploitive and explorative work, defining necessary components and factors
Organizational design: Contextual ambidexterity	Birkinshaw and Gibson (2004) Pregmark (2019)	Coining contextual ambidexterity, discussing required components in culture and individual traits, explorative and exploitive activities taking place in the same structure/entity – mainly by the same people
Organizational design: Structural ambidexterity	Tushman and O'Reilly (1996)	Framing structural ambidexterity as explorative and exploitive activities taking place in different structures and the required integration mechanism in the top management team
Organizational design: Sequential ambidexterity	Duncan (1976)	Proposing that ambidexterity can be achieved through separating explorative and exploitive in time
Dynamic capability and ambidexterity	O'Reilly and Tushman (2008)	Discussing ambidexterity from a strategic perspective (dynamic capabilities) with organizational design lens (ambidexterity)

Table 2.
Perspectives on ambidexterity

(Chen, 2017). Having the possibility to create two separate alignments – each supporting different behaviors and activities – is often described as a clear advantage.

Many authors have concluded that explorative work requires components such as flexibility, learning and experimentation (March, 1991; O'Reilly and Tushman, 2013) whereas exploitation is favored by efficiency, control (O'Reilly and Tushman, 2013) and alignment. Different organizational systems (Galbraith, 2014) arguably need to be designed to favor these different work setups. This is supported by Fredberg and Pregmark (2018), who stress that it is difficult for established organizations to foster innovation, entrepreneurship and change (Fredberg and Pregmark, 2018) because structures and cultures are designed to support current business models and ways of working. There are, however, downsides connected to structural ambidexterity: it places high demands on top management, where the integration is expected to take place (Chen, 2017), and achieving both relevance and acceptance for the innovations created in the explorative work can be difficult (see Table 2).

Contextual ambidexterity – exploring and exploiting within a structure. In contextual ambidexterity, both exploitive and explorative tasks are performed within the same organizational entity/structure (Chen, 2017; Gibson and Birkinshaw, 2004; Pregmark, 2019). Succeeding with contextual solutions requires a context that allows individuals to make the choice between exploration and exploitation in their day-to-day work. Birkinshaw and Gibson (2004) argue that contextually ambidextrous individuals are cooperative, take initiatives beyond their own jobs and are multitaskers and brokers who always look for new internal linkages. They are also often described as generalists. Further, Fredberg and Pregmark (2018) find that contextual ambidexterity has the potential to function well when trust is high and a shared purpose activated. The role of management, then, is to shape the context rather than to allocate resources.

Contextual ambidexterity is often said to be beneficial for integrating new solutions into the established way of working (Wang and Rafiq, 2014). Pregmark (2019) further advocates that contextual ambidexterity can be reconceptualized into a productive process for change, which can be beneficial in changing industries. Critics, however, have claimed that it is hard to promote radical innovation in contextual ambidexterity (O'Reilly and Tushman, 2013) since individuals are expected to act innovatively within the context of current strategy and with knowledge of current capabilities and boundaries. Also, the authors argue that it is hard to achieve contextual ambidexterity in practice (O'Reilly and Tushman, 2013).

In practice, a combination of contextual and structural ambidexterity is often used to manage simultaneous exploration and exploitation (O'Reilly and Tushman, 2013; Chen, 2017) and research has claimed that contextual and structural solutions can often be seen as mutual complements (Birkinshaw and Gibson, 2004).

Method

We see this as a phenomenon-driven study (Schwarz and Stensaker, 2016; Von Krogh *et al.*, 2012), where we seek to understand a practical problem in relation to theory. The phenomenon is our starting point rather than a theoretical gap (Von Krogh *et al.*, 2012). Like many other authors with this starting point (see, for example, Beer, 2020; Kronblad and Pregmark, 2021), we hope that this paper will be equally beneficial to both research and practice. This stance has been called for by several researchers in recent years (Bansal *et al.*, 2018; Mohrman and Lawler, 2012).

A qualitative research design (Gioia *et al.*, 2012; Creswell, 2003; Patton, 2002) was selected since it is often said to be appropriate when studying phenomena in depth. A qualitative approach provides the opportunity to place the emphasis on the multiple meanings of individual experiences and uses strategies of inquiry to collect emerging data (Creswell, 2003), which we believe is helpful when striving to understand the phenomenon at hand. It is particularly appropriate in this study, since it targets digital transformation, a complex and ongoing phenomenon (Eisenhardt and Graebner, 2007), and we explore a number of cases (Yin, 2003) of ambidextrous responses.

All interviewees work in firms based in Sweden. Sweden is particularly suitable as a setting for studies of emergent changes in professional services as it has one of the most liberal legislations in Europe in this area (Paterson *et al.*, 2003); consequently, Swedish regulation allows for an abundance of responses to digitalization. This means that non-responsiveness cannot be attributed to legislation.

We have gathered data from law firms and the legal industry through semi-structured interviews and complemented this with other data sources. In addition, to help us make sense of our data, we conducted interviews with respondents from architecture firms, an industry often said to be similar to the legal industry (von Nordenflycht, 2010; Susskind and Susskind, 2015). The distribution of interviews in law firms, together with complementary data from interviews with architects, is displayed in Table 3. The names of the firms have been replaced with numbers in order to protect the anonymity of the contributing firms.

37 interviews were conducted with lawyers from 22 law firms and 11 with architects from eight firms. The interviewees comprised a variety of work roles and included both partners and other types of employees within the firms.

Each interview lasted between 60 and 90 min and was conducted face to face at the interviewee's office. The interviews followed an informal guide that covered several different areas, such as individual background and motivation behind their professional career, their firm's current way of working, how the firms were organized and managed, as well as the basics of their business models. We also asked them to reflect on their individual perception of the impact of digitalization on their field in terms of its opportunities and barriers. Each interviewee was specifically asked to exemplify if and how digitalization had impacted them and their respective firm. Thus, the interviews targeted both individual micro-level theorizing on digitalization as well as how their firms had reacted and responded to digitalization. In addition, the interviewees were asked to comment on how they worked with and exploited current models while addressing new opportunities in digitalization.

All interviews were conducted in Swedish and later transcribed and translated. We coded the data and looked for patterns in *how* these firms have responded to digitalization, *why* these different industries have responded differently to digitalization and how this is connected to the

Interview	Industry	Firm	Role	Comment
1	Law	L1	Managing partner	Established
2	Law	L1	CIO	Established
3	Law	L2	Partner	Established
4	Law	L2	Partner	Established
5	Law	L2	Associate	Established
6	Law	L3	Knowledge manager	Established
7	Law	L3	Managing partner	Established
8	Law	L4	CEO	New
9	Law	L4	Associate	New
10	Law	L5	Founding partner	New
11	Law	L6	Founding partner	New
12	Law	L7	Founding partner	New
13	Law	L7	Founding partner	New
14	Law	L8	Founder	New
15	Law	L8	CEO	New
16	Law	L9	Managing partner	Established
17	Law	L9	Associate	Established
18	Law	L10	CTO	Established
19	Law	L10	Associate	Established
20	Law	L11	Managing partner	Established
21	Law	L11	Partner	Established
22	Law	L12	Founding partner	New
23	Law	L13	CEO	New
24	Law	L14	Managing partner	Established
25	Law	L15	Knowledge manager	Established
26	Law	L16	Partner	Established
27	Law	L16	Associate	Established
28	Law	L17	Partner	New
29	Law	L17	Partner	New
30	Law	L18	Founding partner	New
31	Law	L18	Associate	New
32	Law	L19	CEO	New
33	Law	L19	Founding partner	New
34	Law	L19	Founding partner	New
35	Law	L20	Founding partner	New
36	Law	L21	Senior associate	Established
37	Law	L22	Associate	Established
38	Architecture	A1	Associate	New
39	Architecture	A2	Associate	Established
40	Architecture	A3	Founding partner	New
41	Architecture	A4	Associate	Established
42	Architecture	A5	Founding partner	New
43	Architecture	A5	Founding partner	New
44	Architecture	A6	Associate	Established
45	Architecture	A6	CIO	Established
46	Architecture	A7	Partner	Established
47	Architecture	A8	Partner	Established
48	Architecture	A8	Partner	Established

Table 3.
Distribution of
interviews

ambition amongst firms in each industry to explore new digital opportunities, as opposed to exploiting established business models. The research team worked to make sense of the data in two full-day workshops. Here we were able to group statements under different emerging themes – inspired by the coding process suggested by Gioia *et al.* (2012) – connected to *how* and *why* the legal industry is slow to adapt and to contrast their attempts to digitalize with

architectural firms. As literature on PSFs (Susskind and Susskind, 2015) suggests, there are both differences and similarities between these industries. We then attempted to explore *why* the law firms seem to be slow to respond to digitalization and coded their responses to digitalization. The data were subsequently thematically grouped under exploitation and exploration efforts and analyzed. We soon realized that there was a large divide in the legal industry between responses from established firms and responses from firms that had been established less than 10 years ago. We therefore decided to divide the sample according to type of firm (established or new) within each industry.

To ensure validity, the findings were triangulated (Rothbauer, 2008) with industry data and field notes from both industries. The industry data included articles discussing digitalization in industry-specific press and notes were taken from eight conferences/ seminars (six in the legal industry and two in the architectural) on the topic of digitalization.

Findings

The findings are summarized below in two tables that display a selection of quotes that have been grouped according to how digitalization has affected firms in each industry regarding their efforts to exploit and explore. The first table (Table 4) shows examples of how digitalization has empowered exploration or led to further exploitation of current models or to a combination of exploration and exploitation (and whether such change has affected established firms and/or new firms). The second table of findings (Table 5) displays *why* the PSFs differ. Here we have explored what the interviewees perceived as barriers and/or

	Law firms	Architecture firms
Exploit	*"We work mainly the same way, but the difference is that we have the office in our pockets now."* – Partner, established firm	*"Digitalization makes us more specialized."* – Partner, established firm
	"We deliver high quality legal services, and the cost is not really an issue." [describing limited needs to work more efficiently with digital technology]– Partner, established firm	*"We have used digital tools for decades, this is to some extent just advancing the efficiency agenda." – Partner, established firm*
Explore	*"Law is particularly suited for automation and artificial intelligence"* as it *"is both rule-based and document-heavy."* – Founder, new firm	*"Digitalization is about introducing ICT but also about using virtual reality and augmented reality technologies and creating new streams of value connected to that."*– Partner, established firm
	"We started to recruit, because I thought that we needed to have new people in, new developers, and gain speed. Also, we needed to think like this: who is the client and what problem are we really trying to solve?" – Founder, new firm	*"You can work with visualization in sales and you create the experience of the final product. You can use it to convince a client of an idea, so a lot of it is about communication, but it also helps to get financial flows going."* – Technology officer, established firm
Explore and exploit	–	*"I think most architects put most of their time into more traditional projects, but many of them are also involved in pilots, testing new ways of working–either as internal pilots or together with customers." – Partner, established firm*
		"It is a chance for us [architects] to re-gain high status and an elevated position in society." – Partner, established firm
		". . . opportunities to optimize solutions for the entire industry."– Partner, established firm

Table 4.
Table of findings demonstrating if/how digitalization has furthered exploration or exploitation

	Law firms	Architecture firms
Structural barriers and enablers	"We have a problem in the association as we cannot be innovative with regard to price, for instance we cannot hold shares in companies we work for."– Partner, established firm	"It is a problem that there are no common standards for the design and building process internationally." – Partner, established firm
	"I left the association . . . their entire model encourages bad behaviour and actions in self-interest. Out of principle I did not want to be part of that." – Founder, new firm	"We need broader competencies now [due to digitalization], especially higher up, in top management."– Partner, established firm
	"Professional partnerships create short economies where partners would rather distribute the annual profits among the partners than make the long-term investment in digital technology."– Founder, new firm	"We have set up a sister firm for our work with BIM [building information modeling] and that has grown a lot in the last years, I think we started with 3 people and now, two years later, there are 30 there. So that is pretty cool."– Associate architect, established firm
	"Many partnering lawyers also have veto power."– Partner, established firm	"We are competing with some of the newly started visualization studios of the large firms." – Founder, new firm
	"The overriding barrier to change is that their entire business model is based on the hour. All of it; how you evaluate lawyers, how you measure profitability, how you measure everything. It is all in the hours."– Founder, new firm	
Cultural barriers and enablers	"We wanted to create a culture where individuals would dare to be innovative and try new things." – Founder, new firm	"Architecture is a good combination of creativity and being tech-savvy, and I think it is fun."– Architect, established firm
	"It is a little bit like being Robin Hood; we want to create an opportunity to help more people with the law." – Founder, new firm	"We are expected to embrace new technology – that is part of doing a good job." – Partner, established firm
	"Why the legal industry is not in the forefront? It is because lawyers focus a lot on the here and now." – Associate, established firm	"Well, I studied at the department of art – and really it was all about design and representation, we were not even allowed to use computers . . . so creativity and artistic quality is really the foundation of this work, for me." – Architect, established firm
	"Most big dragons just sit still in the boat when new small firms arise. I get so angry when I think about how long it takes " – Associate, established firm	"Such shapes were only used in buildings that were important enough to have the architects on site during the building process – such as the Opera House in Sidney or Gaudi's work in Barcelona – but now we can all use it."– Architect, established firm
	"This is not an industry eager to change."– Associate, established firm	

Table 5.
Table of findings showing structural and cultural barriers and enablers for digital transformation

motivations in their exploration/exploitation efforts and found that these could be divided into two groups, structural and cultural. Table 5 presents selected quotes from each of the industries.

Exploit and explore – how different PSFs have responded differently
The findings (see Table 4) suggest a distinct difference between the two industries. The majority of interviews with lawyers in established firms point to challenges presented by

digitalization, and although they appreciate the use of ICT to enhance their current ways of working (exploitation), they reason why further digitalization is not possible or desirable in their law firms, or in the legal industry. The data suggest that established law firms perceive themselves to be sufficiently digitalized, having implemented ICT and show little desire to change further. For example, a partner from one established firm explained the extent of their digitalization as "having the office in your pocket," whereas the founders of new law firms talked about growing and continuous, opportunities for automation and AI. The interviewees from new law firms also described how they strove to realize digital opportunities by establishing new business models and recruiting employees with technological competences. The findings indicate that there is a big divide within the legal industry, where established firms take a more conservative stance and use limited elements of digitalization – mainly in exploitative ways – while new firms display strong efforts to explore new digital opportunities. It was within these new firms that the interviewees talked about real opportunities for transforming legal practice by working with digital tools.

In contrast, the interviewees from architecture firms took a more positive view of digitalization, with all the firms seeing digitalization as an opportunity for further innovation. Data from architecture firms displayed many more examples of how new technology is used in established firms. In fact, our findings showed no difference between established and new architecture firms; all used digital technology both to exploit current models and to explore new opportunities. Thus, there does not seem to be a divide between established and new firms in their view of digitalizing the industry and adopting new technologies. All the architects interviewed identified opportunities for using new technology and stated that digitalization had the potential to enhance their ways of working and aid them in communicating and visualizing their offers to customers. Several pointed out that technology had allowed them to focus on and enhance the creative and artistic aspect of their profession. They also stressed that new technology supported them in client collaborations, as it made it easier to visualize the end result. Furthermore, new digital tools were described as being valuable for creating more advanced forms of architecture – something that was previously reserved for large budget projects. No one from an architectural firm discussed digital technologies in terms of threats or challenges. The view was rather different among law firms, as has already been described.

Challenges for ambidexterity – structural and cultural barriers or enablers

The interviewed lawyers repeatedly suggested (see Table 5) that it is difficult to innovate and develop new business models due to the regulations put in place by the professional association of lawyers. This served as a structural or industry-related barrier. Regulations around different billing practices that prohibit billing a percentage of the deal, success fees, or compensation in the form of ownership shares have prescribed hourly billing as the norm for legal practice. Furthermore, several interviewees indicated that the prescribed partnership structure also entailed a constraint; the veto power held by the partners made it hard invest in digital technologies and further digital innovation. This had led to the establishment of new firms which chose to practice law without becoming members of the professional association of lawyers. The interviewees from law firms also stressed that there was a lack of relevant knowledge and digital competence within their firms and that this prevented them from exploring digital opportunities. A founder of one new firm added that their aim was to hire employees who had such desired digital competences.

This shows that there is a structural element to the barriers to digital transformation to which the new law firms that had chosen not to be part of the professional association were not subject. In fact, interviewees in new firms said they had built their purpose and culture around being outsiders, describing themselves as "*Robin Hood*" lawyers. Outside the

constraining structures and cultures, they found themselves able to act in new ways and to continuously explore digital opportunities for the legal industry. Several cultural elements present among the established firms also restricted their digital transformation. As their focus was often on established success and current positions, their motivation to change decreased. "We are really a group of insecure overachievers," one of them said, adding that this led them to being reluctant to take risks. In the interviews, this reluctance was also connected to the promotion practice of *up or out*, that incentivized the lawyers to exploit current models and bill large numbers of hours, rather than engaging in innovative projects that carried a risk of failure.

This shows that both structural/industrial and cultural elements exist and that they restrict and slow down the digital transformation of established law firms. Consequently, it appears that efforts to further digitalize and explore more radical opportunities have largely been (and continue to be) made in newly created firms that operate outside of the established structures and cultures.

Neither structural/industrial nor cultural barriers appeared to be present among the architects. Although some challenges related to digitalizing their businesses were mentioned (see Table 5) these were not nearly as profound as for the established law firms; the architects mentioned the lack of the desired competences and the lack of international building standards in this regard. Regarding the structural challenges we had seen in law, it was apparent that the professional association of architects did not have the same strong influence or power over the industrial context as their legal equivalent. Architecture firms were not barred from creating sister companies to support digital initiatives (which established architecture firms implemented for visualization as well as for building information modeling (BIM) initiatives). Structural elements thus appeared to work in their favor and served to motivate digital practices – and ambidextrous solutions – within the current structures. As for cultural elements, these also seem to have worked in favor of a digital transformation. The architects mentioned an interest in technology and openness to developing new technological skills, stressing how digital technologies improved the quality of architectural output. "Architecture is a good combination of creativity and being tech-savvy," one architect from an established firm concluded.

Discussion
This study confirms that digital technologies and opportunities have been received and implemented in different professional industries in vastly different ways (Davenport and Westerman, 2018) and goes on to explain why. While investigating if, and how, established firms implement ambidextrous solutions (where digital exploration is made possible at the same time as current business models are exploited), we found that established law firms struggle to embrace digitalization and are not able to fully explore digital opportunities within their organizations. To discuss this, we first consider the main barriers to digital exploration (that the study identified). We contrast the barriers we found in established law firms with comparable enablers in architectural firms. Thereafter we discuss how the barriers relate to structural and contextual ambidextrous solutions respectively.

Barriers to digital exploration
The interviewees in established law firms expressed the existence of structural barriers – such as rigid regulation in the professional association, further restrictions with the common form of organization in partnership (von Nordenflycht, 2010) and pricing and promotion models based on the billable hour, as well as cultural barriers – such as fear of losing status (Beer, 2007) and power (Kronblad and Pregmark, 2019). This has resulted in established law

firms largely focusing on exploitation of their current "and very profitable" business model. Digitalization is mainly regarded as an opportunity to enhance current practices; as one interviewee expressed it: digitalization "puts the office in your pocket."

Instead, digital exploration of new deliverables and new digital business models mainly took place in new firms. As these new firms were independent (i.e. not regulated by the professional association) they were able to implement digital technologies and create new resource mixes and business processes (as suggested by, among others, Davenport and Westerman, 2018). This shows that digitalization inspired legal entrepreneurs (Nambisan, 2017) to form new ventures (in the new sub-field of legal tech). The interviewees from such new legal tech firms described continuously striving to be at the "forefront" in the exploration of new technologies (Lanzolla *et al.*, 2018) and new opportunities regarding smart contracts (Ebenhoch, 2018), big data and machine learning (Susskind and Susskind, 2015), among other things. They also said that they could realize these ambitions by using new ways of organization and new pricing models.

Thus, on an industry level, it appears digital opportunities are being explored and taken care of, but through new firms rather than through the ability of established firms to renew themselves. It should also be stressed that the new law firms did not have the mono-professional workforce (Empson, 2007) associated with the professional association of lawyers. Rather, the workforce in these new law firms demonstrated greater professional heterogeneity and was thereby less influenced by the professional culture of lawyers. Also, within these firms, value creation, which was previously based solely on knowledge-intensive human capital (von Nordenflycht, 2010), was described as increasingly being based on technological and structural capital and AI, which also led the new firms to implement different structures, incentives and business models compared to established law firms.

Our findings stress that it is the new firms in the legal industry, residing in the emerging legal tech space, that have taken the lead in digital innovation and implementation. This corresponds with previous research (Kronblad, 2020a; Kronblad and Pregmark, 2019), but we add that this is made possible by the lack of the structural and cultural barriers that prevent ambidextrous solutions in established law firms. This shows that while ambidextrous solutions are difficult on the firm level, structural ambidexterity has emerged on industry level (where established firms exploit, whereas new legal tech firms explore.

Among architecture firms, however, the story was different. The established architecture firms combined exploration with exploitation efforts through both contextual ambidexterity (Gibson and Birkinshaw, 2004; Pregmark, 2019) and structural solutions (O'Reilly and Tushman, 2013). These industry differences in responses cannot be attributed to differences in the intelligences that are needed in the service production, as both industries have the potential to transform human effort toward more intuitive and empathetic work (Huang and Rust, 2018). Instead, we find that the explanation lies in structural and cultural barriers. By contrasting law firm findings with our observations from architecture firms, we can better appreciate why. From an ambidexterity point of view, these architecture firms contrast with the established law firms by acting vastly differently from them, as they are not constrained by the established organizational structures or professional culture. Interviewees from both established and new architecture firms described how they engaged in the traditional ways of working in some projects and client engagements, while in other projects they took on a more explorative approach, using innovative new digital technology (both internal probes and together with innovative clients). This shows that they resorted to contextual ambidexterity.

The findings from established architecture firms also show that some of them took advantage of more structural ambidextrous designs (Chen, 2017; Papachroni *et al.*, 2016; Tushman and O'Reilly, 1996), where parts of the organization were dedicated towards explorative work – separated from traditional work through different types of structures – for example by establishing separate sister units for their visualization or BIM efforts. Few of

the interviewed architects mentioned cultural and/or structural factors as barriers to change or to exploring digital opportunities. Rather, structural and cultural elements seemed to work as motivators for their exploration of new digital technologies (Ramilo and Embi, 2014; Susskind and Susskind, 2015).

This shows that established law firms are experiencing challenges in solving the ambidexterity problem (Kaulio *et al.*, 2017) that digitalization has accelerated (Reis *et al.*, 2018). We argue that there are distinct factors (relating to both structure and culture) that can explain their lack of exploration and the difference in digital transformation between established law firms and established architectural firms.

How the barriers relate to structural and contextual ambidextrous solutions
Looking at these barriers and how they relate to structural vs. contextual ambidextrous solutions respectively, we can see that barriers to structural ambidexterity mainly relate to the industry context, whereas the barriers relating to contextual ambidextrous solutions mainly relate to the organizational set up and culture.

In law firms, the industry context is characterized by a professional association that applies strict regulation with regard to practices and organizations (Kronblad, 2020a; von Nordenflycht, 2010). This means that it is difficult, if not impossible, to explore digital opportunities in the way common among architecture firms: setting up separate business entities, sister companies, for visualization and BIM work. This diversification away from legal advice would not be allowed in the regulated legal industry. Thus, the industry context (with regulation by the professional association) prevents established firms from engaging in certain types of explorative activities in the form of new structures or entities. This makes structural ambidexterity (Smith *et al.*, 2010; Tushman and O'Reilly, 1996) a less viable option for them. Such efforts need to be preceded by fundamental changes to the regulations and, consequently, the industry context currently constrains them. In the case of architecture firms, the industry context does not provide such strict regulation or such a powerful professional association. Thus, there are no barriers in terms of industry context or their exploration efforts.

Further, our findings indicate that in established law firms the organizational system, with its incentives, rewards and evaluative processes, encourages exploitation rather than exploration, making contextual ambidexterity (Galbraith, 2014) particularly challenging. This was described by one of the interviewees as an organizational barrier to change: "The overriding barrier to change is that their entire business model is based on the hour. All of it; how you evaluate lawyers, how you measure profitability, how you measure everything. It is all in the hours." Interview data from the new law firms that are trying to develop digital solutions show a need to step away from several of the design parameters in place in the established firms, such as reward systems and billing practices, in order for the new solutions to be possible. Contextual solutions to the ambidexterity problem also require cultures that build on trust (Pregmark, 2019; Fredberg and Pregmark, 2018) as initiatives and decisions are taken at the frontline (Birkinshaw and Gibson, 2004). The findings of this study, however, show that established law firms have a hierarchical structure that relies on control, rather than trust and where strategic decisions are made at the top of the pyramid. One of the interviewees described a culture built on "insecure overachievers" and said that "lawyers are not inclined to take risks" Thus, it seems that the organizational structures and recruitment profile of established law firms create cultures that do not support contextual ambidextrous solutions.

Conclusion and contributions
To conclude, we find that established law firms face particular challenges in implementing ambidextrous solutions. These challenges relate to structural as well as contextual ambidexterity

and concern the industry context, organizational set up and professional culture. Established law firms find it hard to comply with regulations when exploring new digital opportunities and their management systems (for example promotion and pricing models) do not encourage the allocation of resources to new, digital and/or explorative work. In particular, contextual ambidextrous solutions seem to be a poor fit with the current organizational system (Galbraith, 2014) and professional culture. Neither individual motivations, nor the structure, nor the rewards system seem to encourage exploration.

We find that the legal industry has for this reason become divided, with one part consisting of established firms that continue to exploit their profitable business models (with or without the introduction of digital technologies) and the other consisting of firms that explore more radical digital opportunities: the sub-industry of *legal tech*. Digitalization seems to have triggered legal entrepreneurs to create new ventures, where entrepreneurial activities can happen without the constraints of established firms. Understanding this with an ambidexterity lens, we find that structural ambidexterity appears at the industrial level, but not at firm level. Thus, it appears that most exploration takes place in new firms which have a different set of cultural and organizational characteristics (different ownership structures, promotion and price models and professional cultures). Law firms within the established configuration, however, seem to be burdened with an ambidexterity problem. This is an important difference compared to established firms in the architectural industry, where digital exploration has become an integral element. In fact, within our small sample of architecture firms, we find examples of both structural and contextual ambidexterity, suggesting the industry context and professional culture carries opportunities for architecture firms to employ both contextual (Birkinshaw and Gibson, 2004; Gibson and Birkinshaw, 2004) and structural (Tushman and O'Reilly, 1996; Papachroni *et al.*, 2016) solutions to the ambidexterity problem. Hence, seemingly similar industries (see for example von Nordenflycht, 2010) that share, for example, an organizational set up with partnerships and the focus on billable hours, still behave very differently. Our study shows that the differences reside in industry context and professional cultures, suggesting that these factors make all the difference. Thereby we show that in order to look at the viability of implementing ambidextrous solutions, a multilevel analysis must be applied, including both organizational and industrial factors.

With this paper, we hope to encourage a conversation about how industry regulation and organizational practices can be adjusted to support opportunities for innovation and possibilities to take on disruption (Susskind and Susskind, 2015; Kagermann, 2015) through ambidextrous solutions.

Contribution to theory
We argue that this paper contributes to theory in three different ways. First, this study contributes to PSF literature (Pemer, 2020; Kronblad, 2020b) by showing that industry context and professional culture carry particular challenges to ambidextrous solutions (Galbraith, 2014) This study demonstrates how the common organizational practices and business models of classic PSFs (von Nordenflycht, 2010) (with billable hours and partnership models) matter less for their ability to implement ambidextrous solutions than industry context and professional culture. We argue that in the case of law firms, the traditional organizational set up seems to discourage explorative and entrepreneurial initiatives, while the same set up in the architecture firms seems to pose less of a problem. Thus, the reasons for slower digital transformation (Reis *et al.*, 2018; Kronblad and Pregmark, 2019; Davenport and Westerman, 2018) and change (Fredberg and Pregmark, 2018; Beer, 2007) in law firms reside mainly in industry context and professional culture.

Our second contribution is to the literature on ambidexterity. We conclude that certain factors relating to the industrial context, organizational set up and professional culture of

established law firms provide barriers to achieving both contextual (Gibson and Birkinshaw, 2004; Pregmark, 2019) and structural (Tushman and O'Reilly, 1996; Smith *et al.*, 2010) ambidexterity. A particular mix of macro to micro level factors prevents them from leveraging digital technology to advance its services. Contextual solutions are particularly difficult, given the professional culture, promotion and billing practices, and structural solutions are not aligned with the industrial context and its regulations. Hence, it seems that it is hard for established law firms to achieve ambidexterity as a way to respond to disruption, as suggested by previous research (Kaulio *et al.*, 2017). It is our hope that this will encourage further research on practical prerequisites for other industries to successfully move towards ambidextrous solutions. We hope that we thereby contribute to literature on ambidexterity through encouraging a practical lens.

Third, this paper contributes to our understanding of how to cope with a volatile, uncertain, complex and ambiguous (VUCA) world (Johansen, 2017) and disruptive external forces (Christensen, 1997; Adner, 2002; Manyika *et al.*, 2013; Christensen *et al.*, 2013). Seeing that firms from seemingly similar industries, such as architecture and law, that are set up in similar ways, still respond quite differently to digitalization, shows us that we need a deeper understanding of context and professional cultures to find real barriers and enablers. We find that we need to go beyond general concepts of change and look at industry-specific factors and how current power systems are aligned with these factors. In our paper, digitalization is shown to act as a disruptive force, but we believe the findings are transferable for any disruption, and any paper that aims to shed light on barriers and enablers to adapt and transform to change should be of value in a fast-paced (Reeves and Deimler, 2011) and uncertain external context (Johansen, 2017). This has been discussed as being particularly important in the context of services industries (Ostrom *et al.*, 2015).

Contribution to practice
This paper contributes to our understanding of the challenges that established law firms face in ambidextrous solutions: simultaneously exploring digital opportunities while exploiting their current profitable business models. By contrasting the findings from the legal world with findings from a seemingly similar industry (architecture), we show that industry context and professional culture matter for how firms can combine exploration with exploitation. Consequently, practitioners cannot solely regard the organizational set up and practices but need to understand how the organization operates in its particular context. The industrial context and professional cultures affect some elements in the organizational set up (the partnership model, *up or out* promotion, hourly billing) in a direction that makes ambidextrous solutions particularly difficult for them.

We hope that understanding what factors make digital exploration difficult, and the interplay between these factors, will assist practitioners to think in new and innovative ways. More specifically, we hope that this paper will support established law firms in engaging in conversations on the macro level of the industry and profession to remove the cultural and structural barriers that exist and that currently prevent them from exploring digital technologies.

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