MANAGING DIGITAL TRANSFORMATION

Per Andersson, Staffan Movin,
Magnus Mähring, Robin Teigland,
and Karl Wennberg (eds.)

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Karyn McGettigan, Language Editor

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mtc
STIFTELSEN MARKNADSTEKNISKT CENTRUM

In his central role at the Wallenberg Foundations,
Peter Wallenberg Jr has furthered a broad range of important research and research-led education initiatives at the Stockholm School of Economics (SSE) and its Institute for Research (SIR). This indispensable work has also helped create a fertile ground for research on digital innovation and transformation: a phenomenon currently experienced, shaped, and managed in and between organisations and throughout society.

This is the topic of this book, which we dedicate to him.

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Every year since 1992, the Stockholm School of Economics Institute for Research (SIR) has published an Annual Research Anthology, and this year SIR is publishing the book in cooperation with MTC (Stiftelsen Marknadstekniskt Centrum). The purpose of the SIR Annual Research publication is to enable managers and practitioners better understand and address strategically important challenges by showcasing SSE research on a selected topic of importance for both business and society.

This year's book, *Managing Digital Transformation,* features authors from academic areas across SSE together with representatives outside the institution. The book's eighteen chapters show the strength and breadth of SSE's research within the area of digitalization and reflect the importance that SSE places upon closely linking research to practice and on investigating the leadership challenges and their implications in order to support value creation in society.

Participating in the many ongoing research projects at SSE and the multitude of aspects of digital transformation addressed in the various chapters has been very rewarding for the editors. We would like to thank all the authors for their hard work and cooperation throughout the project. In finalising this book, we have relied upon the expert work of Karyn McGettigan for language editing, Petra Lundin for layout and graphic design, and Marie Wahlström for digital access to the book. We are, indeed, most grateful for their excellent and diligent work.

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Finally, we would like to thank all the companies and organisations for sharing their challenges and engaging in dialogue and research collaborations with us so that we can produce more solid and relevant research to help better our society.

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Stockholm, January 2018
Per Andersson, Staffan Movin, Magnus Mähring, Robin Teigland, Karl Wennberg

Introduction

One of the hottest research topics lately is digitalization. Many research projects are focusing upon different perspectives. Gone are the days when digitalization or business implications of ICT were just about increasing efficiency. Instead, the ripple effect of digital development can now be felt wider and deeper than ever before. The way in which business is conducted and how it creates value, as well as how corporations can become more efficient and sustainable, are all implications of digitalization. Adapting to new demands and taking advantage of the plethora of possibilities, however, is not always easy.

Managing digitalization and the transformation of business always involves new challenges. The novelty and complexity of the digital age has led to an increased academic interest in the area of digital transformation and a call from companies that seek support in this process.

We take a look at digitalization from the perspective of business research. This creates a better understanding of the challenges that today's businesses are facing. We believe this anthology will serve as a tool to help businesses better understand the force that is digitalization and support these corporations in their digital transformation.

The idea behind this anthology grew as Marknadstekniskt Centrum was taking part in several interesting research projects. Companies were asking MTC to facilitate contact with scholars and supply them with academic insight. Vinnova came on board, by supporting the project *Progressiv digital utveckling förutsättningar för framgång (Progressive Digital Development: Pre-Requisites for Success)* of which this book is a part: its aim to stimulate business to become more progressive in digital change. At last, this book and the website www.digitalchange.com have become a reality.

This joint venture between Marknadstekniskt Centrum and The Stockholm School of Economics Institute for Research follows the SIR tradition of publishing an annual yearbook to showcase its vital research contributions. The book begins with an overview of digitalization, then moves to understanding the new digital customer, and ends by exploring re-organisational effects, business models, and ecosystems. We hope this year's anthology will be useful for managers by facilitating their digitalization processes.

PART 1: DIGITALIZATION – DIFFERENT PERSPECTIVES

The role of digital technology in business and society is rapidly shifting from being a driver of marginal efficiency to an enabler of fundamental innovation and disruption in many industrial sectors, such as media, information and communication industries, and many more. The economic, societal, and business implications of digitalization are contested and raise serious questions about the wider impact of digital transformation. Digitalization affects all private and public operations, as well as the internal and external workings of any operation. Digitalization is the major driving force behind sweeping large-scale transformations in a multitude of industries. Part 1 includes various perspectives on digitalization and digital transformation.

PART 2: THE NEW DIGITAL CUSTOMER

Digitalization has resulted in more user-centric business and user-centric systems. The changing behaviour of the digital consumer/customer is discussed here as it connects to new forms of customer involvement and engagement, as well as analysis models of what creates customer value in this digital context.

PART 3: THE RE-ORGANISATION IN ORDER TO CONNECT WITH THE DIGITAL CUSTOMER

How can companies connect with digitalized consumers and non-digitalized customers? This is a central issue in managing digital transformation, as it draws attention to the emerging intra-organisational, marketing, and customer interaction challenges associated with digitalization: for both the consumer and the supplier. Another aspect of this is the internal handling of new forms of organizational ambidexterity; that is to say, companies and organizations engaged in digitalization processes often require an internal re-organisation in order to handle the demands that digitalization brings, and to explore new digital opportunities while promoting their existing business and operations.

PART 4: BUSINESS MODELS AND ECOSYSTEMS

How do companies change, adapt, and innovate their business models? Given that digitalization leads to a convergence of previously unconnected or loosely connected markets, the digitalizing company and organisation is analysed in its systemic and dynamic context. This part draws attention to business models

and business model innovation. Incumbent firms need to adapt and change business models while competing with digital start-ups based upon new scalable business models, accessible ventures, and rapid processes of intermediating. These chapters discuss completely new co-operative business models: processes that need to be developed as companies shift from products to digitally based services.

The Ecosystem places digitalizing organisations and companies into their broader and systemic context. This includes discussions on digital disruption, industrial convergence processes, and shifting patterns of competition and cooperation. Digital technologies cause markets to converge in many new and sometimes unexpected ways. The result is the emergence of new roles and market positions of technical platforms.

Staffan Movin, Stiftelsen Marknadstekniskt Centrum

Digitalization of Professional Services: The Case of Value Creation in Virtual Law Firms

TALE SKJØLSVIK, KARL JOACHIM BREUNIG, AND FRIDA PEMER

Introduction

> *Virtual firms are already here, and are proving to be successful. These firms provide an opportunity for independent practising lawyers to act as large law firms without giving up their autonomy...* (Lawyer, Virtual Law Firm, US)

From simple information and communication technology (ICT) to advanced artificial intelligence (AI), using digital technologies is becoming an increasingly integrated part of everyday life in organisations. The use of digital technology can provide significant business opportunities, yet can also potentially undermine firms' business models and competitiveness (Christensen, Wang, & van Bever, 2013). Furthermore, digitalization could change organisations and their value creation strategies more fundamentally and faster than any other technological change we have previously witnessed (Jesuthasan, Malcolm, & Zarkadakis, 2016). So far, the use of digital technologies has largely influenced work-intensive firms in production, leading to the automation of standardised and routine tasks (Frey and Osbourne, 2013). Recently, the emergence of new digital technologies may also lead to far-reaching changes for professional service firms, which offer expertise-based and tailor-made knowledge-intensive services (Davenport & Kirby, 2015). In fact, professional services are thought to be one of the industries in which the effects of digitalization will be most prominent (Manyika, Chui, Bughin, Bisson, & Marrs, 2013). So far, however, very few empirical studies supporting this statement exist, and we do not know the way in which professional service firms

will change or what consequences digitalization will have for them. Therefore, we present findings in this chapter from an interview and a media study of the effects of digitalization on a particular type or professional service firms: virtual law firms[1]. Our aim is two-fold: First, we take a processual view and describe how virtual law firms have developed over time. Second, we discuss the consequences of digitalization for professional service firms operating within the legal sphere.

The chapter is structured as follows: After describing the characteristics of professional service firms and our methodology, we provide an overview of how virtual law firms have emerged. We then discuss consequences of digitalization, before concluding the chapter by looking ahead and outlining what the future might hold for professional service firms and their clients.

Characteristics of Professional Service Firms

Professional service firms are characterised by being highly dependent upon the professional employees they attract (Malhotra & Morris, 2009). These employees contribute with competences, experiences, relations, professional judgment, and networks to their clients (Greenwood, Li, Prakash, & Deephouse, 2005), and follow professional norms (von Nordenflycht, 2010) while considering their clients' specific needs and interests (Løwendahl, 2005). Employees in professional service firms generally prefer autonomy in their work and dislike control, standardisation, and formal organisational processes (Alvesson & Karreman, 2006). The basic deliverable in this type of organisations has been characterised thus far by offering tailor-made services, based upon a professionalised knowledge base and trustful client relations.

ICT has increasingly become an integral part of the work professional service firms perform over the past 25 years, and tasks previously performed by humans are being computerised (Chui et al., 2012; Manyika et al., 2013). As part of this development, the understanding for how technology can be integrated in knowledge-work has deepened (Christensen et al., 2013; Susskind & Susskind, 2015). Today, it is difficult to imagine a lawyer or consultant working without access to important information on the internet, or performing analyses or presentations without using computers. Documents are shared on

1 A virtual firm is an organisation that involves dispersed entities that need ICT to support joint work and communication (Hedberg, Dahlgren, & Olve, 1997).

servers and communication with colleagues and clients take place via email, Skype, and social media.

In addition to using technology as support in the daily work, digital technology can also impact how professional services earn money, organise their work, and collaborate internally and with their clients. Thus far, the technological development has revolutionised how individuals communicate and share knowledge across national and organisational borders (Breunig, 2016). The emerging AI technologies are likely to influence value creation by being used to mass-produce or productify knowledge-intensive and professional services (Sawhney, 2016).The use of AI is suggested to be a potential source of increased productivity (Chui et al., 2012), as increased economies of scale and possibilities to standardise services can lead to innovation of new value creation models (Breunig, Kvålshaugen, & Hydle, 2014), and new organisation types, such as virtual firms (Breunig & Skjolsvik, 2016).

VALUE CREATION IN PROFESSIONAL SERVICES

The concept of value creation is often used to describe what an organisation produces, what it wants to achieve, and what it is achieving by delivering the best customer value at the lowest use of resources possible (Skjølsvik & Voldsund, 2016). While it is often described as a function of what the customer perceives to be valuable, measured in monetary terms (Hoopes, Hadsen, & Walker, 2003), value creation is not restricted only to the customer. Rather, firms also create value: for example, to their current employees, potential employees, potential customers, investors, and owners. Thus, value creation can be thought of as aiming to create perceived value among the firm's stakeholders and, in doing so, using its resources in a most efficient manner and at a cost competitive level. The value creation in professional service firms is linked to tailor-made services and problem solving based upon professional expertise. The business model underpinning the service deliverable has changed very little over the last century, and is based upon bundled services billed by the hour (Christensen et al., 2013). The role of professional service firms has also been linked to other stakeholders, as this type of firm have been described as knowledge disseminators that leverage important knowledge among several actors in society (Starbuck, 1992).

Methodology

We have chosen virtual law firms in order to study how digitalization influences value creation in professional service firms. Virtual law firms is an internationally established type of organisation (Gordon, Shackel, & Mark, 2012) that forms an illustrative example of how digitalization impacts an industry that traditionally has been conservative and knowledge-intensive. The results discussed below build upon an explorative interview study with 20 informant related to virtual law firms, and a longitudinal media study of news articles on virtual law firms, published in the Factiva Dow Jones database: 2006–2017.

The interview study aimed to provide contextual information and insights into how virtual law firms use digitalization to improve their value creation. Our identification of relevant cases and informants started quite broadly and followed a snowballing logic (Noy, 2008). Initially, we contacted two high-tech industry specialists based in Silicon Valley with whom we had previous relations. The first was a COO of a major internet corporation and the second was an Intel retiree with a 40-year history in Silicon Valley. Subsequently, we also approached two individuals that work with, invest in, and facilitate scalability of new web-based ventures. We approached these venture capital and innovation incubator communities to learn more about the market conditions and latest trends of the high-tech innovation industry within the context of law firms. In addition, we contacted two professors at the Stanford Law School and were introduced to their initiative CodeX: The Stanford Center for Legal Informatics, with particular emphasis upon the intersection between new ICT and organisational developments for the law firms of the future. Our first interviewees also introduced us to a former mayor of Palo Alto, now working as an advisor to tech start-ups, and to the leader of the Palo Alto Bar Association. During these initial interviews, we were able to identify several different firms using new technology to innovatively offer legal services that had started within the last 10 years. Subsequently, eight of these firms based in the US and UK were contacted and interviewed via Skype in 2015 and 2016. Each interview lasted between 1-2 hours. Those interviewed also provided us with internal documents and information about their firms, which was used as background information to better understand the organisations. An overview of the type of interviews conducted can be found in Table 7.1.

Table 7.1: Overview of Participants in the Semi-structured Interviews

Informants	#
High-Tech Industry specialists	2
Venture capitalists/Innovation incubators/local municipality officials	3
Silicon Valley based researchers with knowledge of the legal industry	2
Legal professionals related to high tech start-ups	5
Attorneys/Partners in virtual law firms	8
Total	**20**

The interviews were recorded, transcribed, and analysed in several steps. In particular, the collected data was analysed using data reduction methods and an inductive approach (Gioia, Corley, & Hamilton, 2013). First, an inductive approach was taken to develop relevant first order categories that, in turn, were compared to existing theory. In turn, these categories were grouped into larger subsidiary and main dimensions of the business model framework (as shown in Table 7.2). Memos in Word were used as core properties of the exploratory categorisation emerged. Subsequently, we chose a more deductive approach re-coding our data comparing it with different core dimensions of business models (Osterwalder & Pigneur, 2010), especially with attention business model innovation in professional service firms (Christensen et al., 2013).

We used the database Factiva Dow Jones in the media study and the search term "virtual law firm" to identify articles published in 2006–2017. The search resulted in 182 relevant articles (see Table 7.2). The findings from the two studies will now be described in more detail.

Table 7.2: Overview of Articles per Year in Factiva Database. *Only for Half of 2017 Included.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017*
Number of total articles	16	18	10	20	21	32	21	21	24	34	23	18
Duplicates/ beyond scope	5	4	2	2	5	10	4	3	6	23	5	7
Final number of articles	11	14	8	18	16	22	17	18	18	11	18	11

The Development of Virtual Law Firms: 2006–2017

A close analysis of the articles revealed that the emergence of virtual law firms had moved through three phases: 1) virtual law firms as competitive equals: 2006-2010; 2) dissemination: 2011-2014; and 3) transformation: 2015-2017. The three phases will now be described in more detail. As the development gained momentum – particularly in the third phase – and, as we are witnessing a large variety of virtual law firms today, we will give extra attention to this phase.

2006–2010: VIRTUAL LAW FIRMS AS COMPETITIVE EQUALS

Following the financial crises, thousands of lawyers and support staff lost their jobs (see, for example, *The Legal Intelligencer:* October 16, 2007). Many law firms also had to cut down employee salaries to survive. In such a market, the traditional business model was increasingly regarded as being "overweight" (ibid.) and virtual organisations became a means to realise cost savings.

Previously, the virtual law firms had been small and local, mainly focusing upon private law. After the financial crisis, however, many large virtual law firms were established, having extensive geographical reach and directed towards large client companies. Virtual Law Partners (VLP) and Rimon are examples of such large virtual law firms that were established during this period. The business model in this type of firms was to hire lawyers at partner level in traditional law firms who had an established client base. These firms aimed to provide both clients and employees with better offers than traditional law firms in order to reduce costs, offer reasonable services, and let the lawyers keep the main part of the revenues. The lawyers were not physically present in the virtual law firms, yet were assisted by invoicing systems, IT support and marketing and recruitment, and collaborated via software solutions and. The offering of new technologies supported this development for law firms (see, for example, Directlaw and Virtual Law Office Technology).

2011–2014: DISSEMINATION AND EXPERIMENTATION

In the second phase, an increasing number of law firms realised the possibilities that the use of available digital technology could bring, and the traditional law firms started to mimic the virtual law firms. For instance, they

started to offer more flexible work hours and alternative career paths to their employees (see, for example, The Guardian: July 2, 2011). An important new technological development in this period was the automation tool for documents (see, for example, Epoq Legal, LegalZoom and Rocket Lawyer). New management tools for smaller firms were also developed: such as Total Attorneys, Clio, Rocket Matter, and MyCase. Yet another important development was the use of apps and software enabling the law firms to better tailor their services to their clients and support the development of client relations[2].

Virtual law firms were mostly an American or British phenomenon up until 2010. A game-changing event was when Axiom entered the Financial Times' list of the best European law firms. In the end of the second phase, the phenomenon spread steadily to several cities and countries, and simple virtual law firms such as Axiom sought to build a global presence. This development illustrates how organisational advantages associated with the virtual model enable fast internationalisation.

2015–2017: TRANSFORMATION

The large number of new virtual law firms was described in the articles during this period, as being challenging the legal industry. A first reason was that lawyers at large law firms started to view virtual law firms as an attractive employment alternative. As was illustrated in the *Australian Financial Review* on 12 August 2016:

> *So a lot of lawyers are now saying, 'You know what? It's just not worth it'. With technology, you can go and set up your own business, make a name for yourself and do financially better.*

Secondly, there was also an increased interest in the legal industry in LegalTech, and awards were instigated for technology-related legal innovations, thereby, contributing to improving the status of virtual technology-based law firms.

Third, new technology related to AI and cloud base computing was disseminated among law firms. During this period, even traditional legal firms started to explore digital solutions, such as The Robot George tested out by The Conveyancing Shop Lawyers in New Zealand:

2 See e.g. https://blog.highq.com/news/new-swedish-firm-synch-advokat-selects-highq-for-extranets

> *George is a tele-presence Robot from Double Robotics that includes a tablet screen as a "head' and Segway like "feet' to get around. George can move, back, up, and turn. This is all directed by his controller – one of the Conveyancing Shop's specialist lawyers, a client, or a management team member.* (Scoop, 30 July 2015)

The dissemination of the virtual law firm as a business model across geographies continued during this period, particularly in Australia. While larger firms in the US, such as FisherBroyles, Potomac Law Group, Rimon and VLP Law Group were prospering and growing extensively, and the value proposition of virtual law firms was increasingly recognised (*Daily Breeze:* 26th March 2015). Media and experts suggested that the virtual platform could enhance and support the client-lawyer relationship (*Business Wire:* 28th August 2015), and that the client-lawyer relationships had become a key focus of these firms:

> *Many virtual attorneys go out of their way to be more responsive to their clients to counteract any concerns that a virtual attorney is ephemeral or transitory. This renewed primacy of the attorney-client relationship in many ways marks a return to very traditional values of the practice of law.* (Inside Councel, December 2nd, 2015)

However, difficulty was also recognised in establishing and running a virtual law firm (for example, *American Lawyer:* November 1st, 2016). Failed virtual law firms, such as the faulter of virtual law firm, Clearspire caused this (*ABA Journal,* 1st July 2017). Larger virtual firms were also likely to dominate the legal service industry and take market shares from medium-sized and small virtual firms.

We witness a decrease today in the use of the term "virtual law firm". This is partly caused by an increased discussion of alternatives to the traditional law firm model, of which in-house counselling and outsourcing are two extreme alternatives. Axiom is leading this transformation, which is recurrently described as being a key player in offering client advice. There also seems to be an interest in shifting the terminology away from the notion of a "virtual" to a "cloud" based firm. This indicates that law firms want to associate themselves with more modern, up-to-date, cloud-based technologies that augment their value offerings to their clients (for example, the collaboration between the Swedish law firm MAQS Advokatbyrå and the legal technical solutions firm Virtual Intelligence, VQ[3]). The companies also seem to want

3 https://maqs.com/en/news/news/maqs-vq-develop-pioneering-artificial-intelligence/

to communicate to their clients that they are not just virtual; they also have a physical presence. In turn, this suggests that, while technology is an important enabler for improving efficiency and accuracy, the personal client-lawyer relationship is still regarded as important for value creation.

Consequences of Digitalization in Professional Service Firms

In developing a better understanding of digitalization in professional service firms, we further use the interview data together with the media study to focus on three main areas: the nature of the digitalization, the organisation of the virtual law firm, and the impact of digitalization on value creation in this type of firms.

THE NATURE OF DIGITALIZATION IN PROFESSIONAL SERVICE FIRMS

A main finding from the interviews was that the technology used in many cases was not particularly sophisticated or unique. An interviewee explained this in the following way:

> "The systems we use really are on-the-shelf systems. The important thing is (to) find out what is already out there and take advantage of it. We don't need expensive, fancy, or tailor-made systems. We use The Cloud for sharing documents, online video conferences, social networks to collaborate, and LinkedIn for marketing."

Thus, it does not seem that becoming a more digital or virtual firm necessarily implies extensive investments. Only a decade ago, only large firms could afford investments in advanced ICT tools. Currently, we witness that digitalization provides opportunities for small and medium-sized firms as much of the applied technology is inexpensive and standardised solutions. As many of the firms combine technology, they develop themselves with existing openly available technology, and success seems to stem more from their business model and their willingness to apply technological tools than from the tools themselves. cloud computing, automation and AI were key technologies that were emphasised in the interviews and in the examined news publications. Each of these will be discussed in the following section.

Cloud Computing: The increased use of cloud computing offers many benefits to law firms and is one explanation to the growth of virtual law firms:

> *The rise of cloud computing in particular has made it possible for attorneys to keep all the technology tools they need to practice on hand at all times and eschew direct client contact and office space if so desired.* (Broward Daily Business Review, 31st January 2017).

Many firms have particularly developed internal platforms that rely upon cloud-based solutions. The platforms form the backbone of the virtual firms and support communication and collaboration. As one of those interviewed explains:

> "…The entire firm is built in the cloud. We log into the platform that forms the basis for the internal social network; it resembles Twitter and makes it possible for us to post information on new clients or legal updates. We can see who is logged in, and in order to communicate with each other, we can just click and then immediately have a chat or a video conference."

Automation and AI. Technological developments in AI and automation are the second main influencer in the legal services industry. There are a number of AI programs targeted to the legal industry. Examples are ROSS, which is built upon IBM's Watson: a software focusing upon AI and machine learning and Luminence, which is used in due diligence. Having access to AI currently demands large investments from law firms, since it takes time before the AI has been trained to work well within different legal areas. Despite the costs, most of the larger law firms are using resources to develop AI solutions. As costs decrease and the software becomes easier to use; however, it is likely that it will become more accessible for more law firms, with far-reaching consequences for the industry. In a Swedish setting, the language will probably delay this development as it takes additional time for the software to learn to decipher Swedish legal texts. In 5–10 years' time though it may be possible that AI will perform many of the tasks that law firms do today. Some informants, however, argue that technology would not change the core of what lawyers do. They claimed new technology will not influence the professional knowledge, and that the assignments they were given would not change, although the way in which they were performed would be somewhat different. This is illustrated in the following quote:

> "Technology won't replace anyone; it is a tool that makes it possible for us to do things differently and (be) more efficient. Individual professional expertise cannot be replaced by technology."

After having seen what tasks AI can perform in relation to searches for previous legal cases and court decisions, an interviewee expresses his concerns:

> "...It may well be that, in the future, one gets sued for misconduct if one doesn't use this type of systems when preparing cases."

Thus, it might be that the use of technology might not only be a source of effectiveness; it may also become a prerequisite over time. Also, the fact that outsourcing of law services seems to be of increasing interest to clients, the application of AI might happen more rapidly than if law firms were to do it themselves, as illustrated in *ABA Journal:*

> *Most importantly, outsourcing providers can use technology that a law firm cannot afford. That might include artificial intelligence, contract management, process mapping and workflow technology.* (July 1, 2017)

This takes place not only through innovation in the business models – as is the case for the virtual firms; it is also related to basic tasks previously performed by junior lawyers. As *The Straits Times* illustrates:

> *Artificial intelligence (AI) is shaking up the law and accounting sector, as companies embrace the use of increasingly smart machines to perform mundane tasks that have traditionally been the preserve of junior employees.* (September 28, 2016)

Machines with equally good or even better results can now can perform many of the tasks that was once performed by juniors as well as administrative staff in the past: anything from analytical tasks, data gathering or assessments in individual cases. While the use of AI and automation might improve value creation by helping to reduce costs, for example, it is also believed to have drawbacks. The application of AI to routine tasks for junior associates means that they miss important opportunities to learn how to perform more basic searches and analyses, as well as get experience and become socialised into important professional values and norms. As one of the informants describes:

> "…. If robots can perform tasks we normally let junior associates do, then I find it difficult to see how we will develop the knowledge necessary, and also provide our new employees with norms and values that are fundamental to become a good lawyer."

THE ORGANISATION OF THE VIRTUAL LAW FIRM

Interviewees described that the virtual law firm differs in many ways from the traditional law firm. While the physical building is regarded as being highly important in traditional law firms, - not the least from a marketing perspective - this is not so in virtual law firms. One interviewee explains:

> "Nowadays having a large library or support staff is highly redundant, and I find it more efficient to do my searches online myself. The physical office has become irrelevant. We used to need a large office to share resources, libraries, and administrative staff – in fact, one of the main motivators for becoming a member in a large law firm was to get access to these resources. In our company, it is very different, now it is the web site that is the law firm, not a fancy office building. The large law firms are ignoring these changes."

The lack of physical presence was even described as an advantage for the virtual law firms, as it made them more flexible and reduced their fixed costs. As explained in *ABA Journal*:

> *The virtual law firm-an office has no mahogany-walled waiting room, no expensive downtown location and no expensive overhead? Well, how about ditching the office altogether and using technology to communicate, share information and service clients? That's the idea behind the rise of the virtual law firm…* (June 1, 2015).

The digital technology was also said to enable law firms to develop networks that enable them to access research and information previously inaccessible to them. This influences both how law firms can work with better resource allocation and lower their costs through a cost-efficient organisation. For instance, the virtual law firm is built upon a network model that connects dispersed lawyers, allowing them to portray themselves as being part of a larger firm, communicate with peers, leverage up-to-date technology and support administrative needs: such as billing and accounting. As the network model has many advantages, many large law firms are currently experimenting with tying up resources in external networks: for example, via Upwork or Freelancer in order to access new expertise and complement their internal resources. While using network-based resources might not change how the core tasks of lawyers are performed, it certainly affects the context of value creation within legal services. Those interviewed emphasised that the new digital technology enables firms to organise their work in new ways. They

also described how the key to successfully creating value in law firms has changed due to the introduction of digital technology:

> "If technology changes our practices? But of course! We would not be able to take advantage of the new possibilities the technology brings unless we changed the way we organised our work".

As aforementioned, professional service firms are defined by the professional autonomous role the employees have in their work. This ideal has been under pressure in many professions as professional service firms have tried to professionalise their management and move toward more business-oriented organisations in combination with the traditional partnerships. However, the virtual organisation allows the professionals to maintain their autonomy. As one interviewee described:

> "The effects [of virtual organisations] on the professional autonomy? It improves it. The technology frees us from hierarchic and bureaucratic structures".

In a virtual organisation, the structural features are of less importance. Rather, culture is described as being central for how to organise the firm, the practices, and for internationalisation. This is also regarded as important glue, as well as selecting which persons to recruit and retain. Another interviewee explains:

> "We aim to build a culture in which respect for each other and knowledge-sharing are important values. A central tool to achieve this is to give your co-workers as much freedom as possible. An important focus in recruitment is to get on board competent people with a viable portfolio, but who also want to collaborate closely with colleagues. This requires both basic IT competence and an extrovert personality. We need people who can contribute to building a company by sharing and collaborating with colleagues. "

THE INFLUENCE OF DIGITAL TECHNOLOGY ON VALUE CREATION

The costs and value that is offered to the customer and other stakeholders of the firm is at the core of value creation. The virtual organisation forms the basis for the realisation of the value creation potential. Improvements in value creation relate to how virtual law firms are organised; it is their way of organising, which

enables them to save costs. A virtual structure also enables them to deliver better services. As *The Daily Breeze* explains:

> *We have three major value propositions: top quality work; we're extremely responsive, and people can save up to 50 per cent on their legal bills…* (March 26, 2015)

This illustrates how the virtual organisation has had a large impact on the value creation by removing structures and making redundant much of the traditional resource base such as libraries and support staff.

Reputation was another important feature strongly emphasised by the informants. While it used to be common to build a reputation through personal contacts, a new trend among law firms seems to be focusing more on the internet to build a reputation online. One interviewee explains how the online presence could create value for the clients, as it gave them quicker and better access to information:

> "Visibility and building reputation on the internet has become very important. Most well known lawyers now have weekly blogs, or they retrieve information from other lawyers' blogs or LinkedIn updates. This increases the speed: you can now read online about new legal updates every morning."

In addition to contributing locally with value creation, the virtual organisation also enables much faster the international scaling of its operations. One interviewee explains this in the following way:

> "Having an international presence is steadily becoming a more important competitive factor. We hire specialists from all over the world. So we have a distributed model, which takes advantage of the benefits of having partners in the cities where our clients work. Our virtual model enables us to establish our firm internationally much faster. I would say that international expansion occurs when a client asks for a long-term representation in a specific geographic area. We saw an example of this in Tel Aviv recently. We could open an office there in one week's time. First, we identified a lawyer running his own practice there, who was interested in being part of a broader international collaboration. So, we just connected the lawyer to our platform. Geographic distance is not as important as time zones or languages. For me, only 50% of my clients are located nearby – 30 years ago that would have been totally impossible."

Internationalisation has traditionally been associated with high capital commitment limited to large firms. However, the increased digitalization also

enables small and medium-size firms to internationalise and utilise "off-the-shelf" and inexpensive technology to obtain competitive advantages. This change is important, and emphasises how a clever use of inexpensive new digital technology in many situations can be more valuable to firms than merely focusing upon the high end of technological complexity.

Apart from creating value for their clients, virtual law firms also create value for their employees. The way of organising the work makes it possible for lawyers to find a better work-life balance: for example, having time for one' family, especially with young children, or taking up a hobby. This type of value is important for the virtual law firms when recruiting highly competent employees, and it also appeals to potential clients:

> "Our employees are our most important resource. Our clients don't hire the firm; they hire the people working here. If we are able to recruit the right people, well, then we will earn good money. So it is important to us to create a good and attractive place to work. One way of doing so is to encourage flexible work hours and the possibility of working from home. We want to create a better work-life balance and make it attractive for our lawyers to work here."

Looking Ahead: The Future of Professional Service Firms

The study indicates several broader future potential changes in general to professional and knowledge- based services, particularly to the legal service industry. A first observation is that the digitalization of the legal industry is not predominantly driven by increased technological complexity. Rather, it is concerns how the new digital technology is applied and utilised by law firms to improve their competitiveness. As we previously discussed, law firms are adopting and integrating systems based upon AI. The media has discussed how software with AI might influence how the very core of legal tasks is performed, thus, fundamentally challenging the industry. The legal industry is also apparently under strong price pressure, and one strong incentive to automate tasks is cost reduction. The following quote from a virtual law firm operating in the US market illustrates this:

> *The US is a legalistic society, however only 20% of its population can afford legal services. This is a market ripe for disruption. The ones that manage to provide affordable services at a quality that suffice – will take the grand prize.*

Based upon our findings, we suggest that the increased use of automation and AI in legal services will have the following consequences:

First, automation of time-consuming tasks related to data collection and analysis can produce organisational slack and pose an opportunity for law firms to engage in more strategic matters, such as market development and expansion. Automation might also provide opportunities for lawyers to focus more upon tasks that machines cannot easily performed – such as representation in courts or negotiations – as they build upon creativity, human judgment, and empathy. However, this might also lead to changes in the value creation process in law firms. Law firms have traditionally offered high-priced bundled services that are billed by the hour. Today, an increasing number of law firms are seeking to identify tasks that are scalable, which can benefit from automation. The automation makes it possible for law firms to unbundle their services, thus, performing them more efficiently. It also opens up a possibility for competitors to invest in technology as an entry strategy into the market of legal services. There are currently several examples of solutions to solve legal issues offered by firms outside the legal industry. These firms do not have the same regulatory requirements, such as being restricted by the equity clause: for example, divorce settlements, real-estate transaction or incorporating a firm are increasingly offered as online services. Other examples are increased in-house legal expertise, software to support certain services such as Due Diligence offered by Luminence, and firms such as Axiom and Burton law providing strategic services to enable more professional purchasing of legal services. Thus, it is plausible that the legal industry will experience more intense competition from actors presently not part of the market for legal services, and that the current core offerings by law firms will be less relevant in the future. One interviewee addressed this accordingly:

> "An analogy could be predictions about self-driving cars and the future of driving instructors. Acquiring a digital strategy will not suffice for the driving instructor if the market for driving licenses are drastically reduced. Within the legal industry there might be several such examples of potential big changes in marketability of certain services – becoming irrelevant: for example, due to blockchain technology predicted to revolutionise contracts and the need for third-party involvement in transactions."

Secondly, the increased use of digital technologies in law firms will create a need for new types of competences. While law firms have built upon the lawyers' strong legal knowledge, they now need to recruit or develop people with technological competences. In turn, this poses new challenges for law firms, relating to questions such as: i) How to recruit and retain highly technologically-competent employees; ii) if new career paths are needed: for example, different paths for lawyers and technical experts; iii) How the power balance and status of lawyers and technical experts will play out internally; and iv) Whether the law firms instead should outsource all technical issues. In addition, law firms need to develop strategies for how to use the new digital technology and transform it into new business opportunities. To do so, law firms might need to complement their legal competence with strategic competence. This, in turn, opens up for changes in the traditional professional partner-structure in law firms, and the development of new managerial levels not necessarily built upon legal competences.

Third, while virtual law firms reveal many advantages, such as being flexible, agile, having low-fixed costs, and the ability to draw upon expertise on an ad-hoc basis, they also have disadvantages. One such potential disadvantage is the lesser degree of collaboration and knowledge development among the lawyers in virtual law firms. While law firms have traditionally played an important role in training through professional apprenticeships, this might not be as common in the future. The fact that virtual law firms mainly recruit lawyers with long experience and do not hire or spend time on training junior lawyers partly indicates this, as does the increased use of automation and AI. Therefore, the legal service industry needs to ask itself how future lawyers will be trained and given the opportunity to develop into experienced and knowledgeable senior lawyers.

Transforming a law firm's value production process into an automated services production flow, however, will require investments, and might require external capital – now prohibited due to the equity clause. This might also have consequences for the clients to law firms. Using automation and AI will make it possible for law firms to deliver better and more tailored expertise faster and easier to their clients. For the clients, this means that they might get more value for their money. The unbundling of services also makes the value-creation process more transparent, and easier to compare between law firms: for example, via online references. The reduced information asymmetry

and opacity of the services' qualities is likely to shift the power balance between lawyers and clients in the clients' favour; it will be interesting to see whether the increased use of automation and AI will lead to the development of new standards in the legal services industry, or if law firms will create models that make them retain some of the value.

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