

The Brave New World of (Swiss) Law

Contours of a Framework and Call for a Strategy to Shape Law's Digital Revolution

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I. Introduction

The emergence of computer networks in tandem with digitization – the rise of digital communication – has had a fundamental impact on the world we live in. Over the past few years, we have witnessed how digital communication has shaped how we communicate with each other, build and maintain friendships, work together, and engage in our communities and society. But digital technology not only affects our

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lives as individuals, it also has *system level* impact. The deep transformations in the economic system – consider the tectonic shifts in the entertainment or publishing industries, and, more recently, the advent of the so-called industrial Internet – are well-documented, and demonstrate the disruptive potential of digital communication. However, many other systems are also deeply affected by digital technology: whether culture and arts, health care, transportation, or energy, virtually all sectors of society are currently undergoing changes fueled by digital communication.

In some areas, the impact and the implications of digital communication are well studied and understood; in other systems, the effects have only become visible more recently and the transformation processes are still unfolding.¹ In this essay, we look at one such system where the impact of digital communication – despite a long research history dating back to the 1950s – is still unfolding and is perhaps underestimated, particularly among policy- and decision-makers: the impact of digital communication on the legal system as an information processing system.

We argue that a growing body of evidence suggests that law is profoundly affected by the digital revolution, at various levels and with manifold implications not only for the legal profession, but (for) society at large. Given these deep transformation processes, we call for a *pro-active, systematic, and strategic approach* when dealing with these transformation processes in order to address associated challenges and manage risks, but also, perhaps most importantly, to make use of the tremendous opportunities digital communication offers for the law and, more broadly, social justice.²

This essay is divided into three parts. In the first part, based on general patterns of change in the information ecosystem, we identify four areas with examples of structural transformations enabled by digital communication: the creation of law, the dissemination of law, access to law, and the use of law. For each category, we highlight recent manifestations and developments – mostly (but not exclusively) from the US – with the goal of illustrating the types of shifts we anticipate.

¹ See, e.g., Schweizerischer Juristentag 2015, Web page, Sept. 11/12 2015, <<http://www.juristentag.ch/aktuelles.html>>. The general topic of the 2015 meeting is «Legal Questions in the Digital Age» («Rechtsfragen im digitalen Zeitalter»), and issues and speakers include: «Questions de principe pour le droit à l'ère du numérique» by Bertil Cottier, Professor, Università della Svizzera Italiana, Lugano; «Demokratiefragen» by Andreas Glaser, Professor, Universität Zürich; «Internationales Wirtschaftsrecht» by Mira Burri, Professorin, Universität Bern; «Urheberrecht» by Stefan Bechtold, Professor, ETH Zürich; «Droit des brevets» by Jacques de Werra, Professor, Université de Genève; and «Digital Privacy» by Urs Gasser, Professor, Berkman Center Harvard/St. Gallen.

² See, e.g., RAYMOND ANJANETTE, SHACKELFORD SCOTT, Jury Glasses: Wearable Technology and its Role in Crowdsourcing Justice, in: *Cardozo Journal of Conflict Resolution* 2015 (forthcoming).

In the second part of the essay, we argue that there is a need to map and evaluate the different moving elements identified in the first part more systematically. Towards this end, we develop an analytical framework on which the various moving elements discussed in the first section of the essay can be mapped, analyzed, and evaluated. Such a framework is an intermediate step when working towards a strategy dealing with the law's digital revolution.

Consequently, the third part builds upon this analytical framework and sketches the contours of a strategy for Swiss Law, which consists of a methodological and a substantive component. Methodologically, we call for a new strategic literacy enabling the analysis and management of the relationship between law, digital communication, and society in the digital age. The second component – again in form of a sketch – identifies a series of opportunities and possible next steps in the Swiss context.

II. Digital Communication and Structural Shifts in the Legal System

1. Structural Shifts

Digitization of information in tandem with the emergence of electronic communication networks – in short *digital communication*³ – has not only enabled today's information society,⁴ which affects every segment of society, every sector of activity, and permeates every aspect of human life,⁵ but has also led to seismic shifts in the architecture of the information ecosystem. Specifically, digital communication has changed the ways in which individuals and organizations create, distribute, access, and use information:⁶

- Digital technology has an impact on who produces what kind of information, by what means, and under what conditions.⁷ Based on the structure of mass media markets of the early twentieth century, the production of information (news,

³ In this article, the term digital communication is used to describe *both processes*, i.e., the shift from analog to digital information on the one hand and from physical to online media on the other hand.

⁴ See, e.g., WEBSTER FRANK, *Theories of the Information Society*, 2nd ed. London/New York 2002; CASTELLS MANUEL, *The Rise of the Network Society*, Oxford/Malden 2000.

⁵ See, e.g., CAPURRO RAFAEL, *Leben im Informationszeitalter*, Berlin 1995; WEBER ROLF H., *Towards a Legal Framework for the Information Society*, Zurich 2003, p. 11.

⁶ See, e.g., BENKLER YOCHAI, *Rules of the Road for the Information Super Highway*, St. Paul 1996, p. 22 et seq.

⁷ See, e.g., SHAPIRO ANDREW L., *The Control Revolution: How the Internet is Putting Individuals in Charge and Changing the World We Know*, New York 1999.

entertainment, cultural knowledge, software) has traditionally been dominated by a small number of professional producers and controlled by centralized and hierarchically organized commercial entities.⁸ In the digitally networked environment, by contrast, anyone with a computer and Internet access can produce a message.⁹ The costs of producing information in the digital age have changed both for professional producers and active users, because digital technology and networking at least in part lower the traditionally high up-front costs of information production.

- The effects of digital communication on the distribution of information are manifold. In the digital environment, the message has become separable from the medium. As a series of pulses, digital information can be distributed over a singular electronic network such as the Internet,¹⁰ which allows a global and real-time transmission of information at minimal (near zero) cost.¹¹
- The digital revolution has led to an unprecedented level of access to information through databases, search engines, and the like.¹² However, not only has (substantive) access to information by consumers changed, (technical) access to the infrastructure by creators of information has also changed.¹³ The decentralized, end-to-end architecture¹⁴ of the Internet and the reduction in costs of producing and communicating information by computers potentially lowers access barriers to the pathway of communication.¹⁵
- The digital revolution also has effects on usage patterns. Plasticity, processing ability, and networking affect the diversity of information and have an impact on

⁸ See, e.g., BAGDIKIAN BEN H., *The New Media Monopoly*, Beacon Press, Boston 2004; STARR PAUL, *The Creation of the Media, Political Origins of Modern Communications*, Basic Books, New York 2004.

⁹ See, e.g., LENHART AMANDA, HARRIGAN JOHN, FALLOWS DEBORAH, *Content Creation Online*, Pew Internet & American Life Project, 2004. Further, new collaborative forms of information creation – such as commons-based peer production – have emerged. See BENKLER YOCHAI, *Coase's Penguin, or, Linux and The Nature of the Firm*, in: *Yale Law Journal* 2002, p. 369 et seq.

¹⁰ See, e.g., PERRITT HENRY H., *Law and the Information Super Highway*, New York 1996, p. 27 et seq.

¹¹ Generally speaking, the production of information involves low marginal costs, see, e.g., SHAPIRO CARL/VARIAN HAL R., *Information Rules*, Boston 1999, p. 3.

¹² See, e.g., WEBER ROLF H., *Regulatory Models for the Online World*, Zurich 2002, p. 41.

¹³ In the digital environment, open access, open standards, open source software, and widespread availability of access points ease access to information, see WEBER (N. 12), p. 96.

¹⁴ See, e.g., CLARK DAVID D./BLUMENTHAL MARJORY S., *Rethinking the design of the Internet: The end to end arguments vs. the brave new world*, 2000.

¹⁵ BENKLER YOCHAI, *From Consumers to Users: Shifting the Deeper Structures of Regulation Toward Sustainable Commons and User Access*, in: *Federal Communications Law Journal* 2000, p. 561 et seq.

what users can do with this information. As creators, they can actively interact with digital information, personalize and customize information and knowledge, make transformative uses, etc.¹⁶

In the next section, we explore to what extent these structural shifts also affect – and may ultimately transform – the legal system by identifying examples that are precursors of such changes.

2. Application to Law

Broadly speaking, the interaction between digital communication and the law¹⁷ occurs at two basic levels. First, the digital phenomenon has led to the enactment of new legal norms or the reform of old norms aimed at regulating the many facets of digital communication. For instance in the form of new provisions in evidence, records keeping, copyright, or data protection law, to name just a few examples of what one might define as first order effects.¹⁸ Second, digital communication is affecting the law – now understood as information¹⁹ – more fundamentally at the system level. Such second order effects are the focus of this essay.

The interaction between digital communication and the law has been studied for several decades. In Europe, research on the relationship between electronic data processing and the legal system dates back to the 1950s and 60s, the birth date of legal informatics («Rechtsinformatik»)²⁰ Looking at digital communication more recently and specifically, Richard Susskind conducted some of the most systematic studies, both in terms of mapping emerging issues and empirical analysis, and in 1996 predicted fundamental changes in the legal system and the administration of justice through digital technology.²¹

¹⁶ See, e.g., BENKLER (N. 6), p. 27.

¹⁷ We use the terms «law» and «legal system» interchangeably and in the very broad sense of the whole body of substantive and procedural, national and international legal norms, as well as relevant actors (including the legal profession and their knowledge), processes, and institutions.

¹⁸ See, e.g., BURKERT HERBERT, Von künftigen Aufgaben des Informationsrechts, in: Christian J. Meier-Schatz/Rainer J. Schweizer (Eds.), *Recht und Internationalisierung: Festgabe der Juristischen Abteilung der Universität St. Gallen zum Juristentag 2000*, Zurich 2000.

¹⁹ On law as information, see DRUEY JEAN NICOLAS, *Information als Gegenstand des Rechts*, Zurich 1995.

²⁰ For an overview, see, e.g., HOEREN THOMAS/BOHNE MICHAEL, *Rechtsinformatik – Von der mathematischen Strukturtheorie zur Integrationsdisziplin*, in: Roland Traunmueller/Maria Wimmer (Eds.), *Informatik in Recht und Verwaltung*, Bonn 2010, p. 22 et seq.

²¹ SUSSKIND RICHARD, *The End of Lawyers? Rethinking the Nature of Legal Services*, Oxford 2008.

Building upon and referring back to this long research tradition and vast body of knowledge, the following paragraphs highlight only some recent examples and developments that might indicate deeper transformation processes as digital communication increasingly embraces virtually all aspects of life and society, including law.

a) Creation of Law

Compared to the analog and offline world, digital communication enables the decentralized, distributed, and collaborative production of law – broadly defined – at relatively low costs. These changes span both the public and private spheres by affecting the underlying processes of both government-based legislation as well as, for instance, formation of contracts, Terms of Services, or the creation of «soft law» such as standards by private actors.²²

Illustrative of the potential of digital communication with respect to public law making is Brazil's «Marco Civil da Internet» – the first legislation worldwide to regulate the Internet from a fundamental Human Rights perspective – which was enacted in 2014 and drafted based on extensive online consultations, involving civil society, government, academics, technical community, and the business sector.²³ The discussion about the electronic collection of signatures in the context of initiatives («Volk-sinitiativen») and experiments with electronic voting in Switzerland suggest that digital communication might affect the entire process of the creation of new law.²⁴

The emergence of «smart contract» platforms indicates structural shifts in the creation of binding legal rules among private actors.²⁵ Using proportional escrow deposits and other techniques, such platforms enable parties involved in peer-to-peer or marketplace-based e-commerce transactions to exchange goods and services using secure and self-executing contracts, eliminating the risks of financial loss or fraud

²² Susskind (N. 21).

²³ GASSER URS/BUDISH RYAN/MYERS WEST SARAH, *Multistakeholder as Governance Groups: Observations from Case Studies*, Cambridge 2015, p. 30 et seq. (Appendix I).

²⁴ On the electronic collection of signatures see BRAUN BINDER NADJA, *Quoren und Fristen bei der elektronischen Unterschriftensammlung (e-Collecting)*, in: ZSR 2014, p. 539 et seq.; for an overview of electronic voting see, e.g. GASSER URS/GERLACH JAN, *Electronic Voting: Approaches, Strategies, and Policy Issues – A Report from Switzerland*, in: *Information Technology and Law Series* 2011, p. 101 et seq. and TRECHSEL ALEXANDER H./GASSER URS, *Casting votes on the Internet: Switzerland and the future of elections*, in: *Harvard International Review* 2013, p. 53 et seq.

²⁵ See SZABO NICK, *The Idea of Smart Contracts*, 1997, <http://szabo.best.vwh.net/smart_contracts_idea.html>; VITALIK BUTERIN, *A Next Generation Smart Contract & Decentralized Application Platform*, GITHUB (last edited Jan. 5, 2015), <<https://github.com/ethereum/wiki/wiki/White-Paper>>.

among parties who may not trust or even know each other.²⁶ Automatic document assembly such as drafting services offered by online platforms to generate term sheets online are another example in the same category.²⁷

Together, these and other examples – such as the phenomenon of user-created legal information as a form of «legal open-sourcing»²⁸ – indicate that digital communication is likely to transform the creation of law by affecting the underlying information-based processes from drafting to enacting and (automated) enforcing.

b) Dissemination of Law

As with other types of information, digital communication fundamentally changes the speed, costs, and reach of the dissemination of legal information as the atoms of the legal system. In many countries, newly enacted legislation or regulations are no longer only distributed on paper, but shared electronically via interactive online portals.²⁹ In Switzerland, for instance, the classified collection of Federal Law («Systematische Rechtssammlung») has been available online and for free since 1998,³⁰ and the change in the default of the legal authority from print to the electronic versions of the text of laws («elektronische Rechtsverbindlichkeit») is currently underway.³¹

Digital communication not only affects the distribution of legal information as «raw data» and its aggregation in large databases, but also has a structural impact on the dissemination of knowledge about law. Again, these shifts occur at multiple levels and across different spheres. Legal knowledge has become available from a rapidly growing number of online sources, ranging from readily-available templates for a broad range of legal transactions³² to primers and «how to» guides distributed by law

²⁶ See, e.g., WRIGHT AARON/DE FILIPPI PRIMAVERA, *Decentralized Blockchain Technology and the Rise of Lex Cryptographia*; HIGGINS STAN, *BitHalo: Smart Contracts Without the Block Chain Bloat*, 2014, Web page, n.d. <http://www.coindesk.com/bithalo-smart-contracts-without-block-chain-bloat/>; On embedded legal knowledge more generally, see Susskind (N. 21), ch. 4.9.

²⁷ See, Susskind (N. 21), ch. 4.1.

²⁸ See, Susskind (N. 21), ch. 4.6.

²⁹ See, e.g., the *Guide to Law Online* by the US Library of Congress, Web page, n.d. <<http://www.loc.gov/law/help/guide.php>>.

³⁰ *Systematische Rechtssammlung*, Web page, n.d. <<http://www.admin.ch/bundesrecht/00566/index.html?lang=de>>.

³¹ *Federal law search*, Web page, n.d. <<http://www.admin.ch/bundesrecht/00586/index.html>>; TERCIER PIERRE/ROTEN CHRISTIAN, *La Loi fédérale sur les recueils du droit fédéral et la Feuille fédérale*, in: *SJZ* 2015, p. 113 et seq.

³² See, e.g., Susskind (N. 21), ch. 4.1.

and consulting firms,³³ daily electronic newsletters on the most recent legal developments,³⁴ in-depth legal analysis in form of electronic books, articles, blog posts, etc.³⁵

Perhaps even more fundamental than the effects of digital communication on legal information as «data» and «knowledge» are the transformation processes that affect the ways in which legal knowledge is shared in the human context. Particularly in the US, legal and professional education is going through a phase of deep disruption, with an explosion of online courses and modules as the early and most visible manifestations of these changes.³⁶ The title of a recent law review article, «The MIT School of Law? A Perspective on Legal Education in the 21st Century», captures the magnitude of the transformations taking place in legal education – far beyond the trend of law schools offering MOOCs.³⁷

c) Access to Law

Closely related to the shifts in the dissemination of law are changes in the ways we can access the law and legally relevant information more broadly. With respect to access to the basic building blocks of law – for instance in the form of access to legislation, regulations, as well as case law – digital communication offers the potential for unprecedented levels of access to this information, from everywhere and in real-time.³⁸

The US Law Library of Congress, for example, provides access to more than 2.65 million volumes of primary and secondary legal sources and is the largest collection in the world.³⁹ Similarly, a broad range of materials related to court cases are accessible online in many jurisdictions around the globe. The Federal Courts in the US, for instance, established the Public Access to Court Electronic Records system (PACER) in

³³ SUSSKIND (N. 21), ch. 4.5.

³⁴ See, e.g. «New York Law Journal», Web page, n.d. <<http://www.newyorklawjournal.com/?slreturn=20150224155133>>.

³⁵ See, e.g., the list with the top US law blogs, Web page, n.d. <http://www.avvo.com/stats/top_legal_blogs>.

³⁶ See, e.g., HAGGARD STEPHEN, Legal education in the digital age, Web page, n.d. <<http://www.ibanet.org/Article/Detail.aspx?ArticleUid=ba06a28f-481b-41be-99ed-4ad1a5a0126f>>.

³⁷ KATZ DANIEL MARTIN, The MIT School of Law? A Perspective on Legal Education in the 21st Century, in: University of Illinois Law Review 2014 (forthcoming).

³⁸ See, e.g., Montreal Declaration on «Free Access To Law», Web page, n.d. <<http://www.ittig.cnr.it/Ricerca/ProgettiEuropei/fal/DeclarationFreeAccessToLaw.pdf>>.

³⁹ «About the Law Collections | Law Library of Congress.» Web page, n.d. <<http://www.loc.gov/law/about/collections.php>>.

1998, which allows individuals (for a fee) to obtain case and docket information from district courts, courts of appeals, and bankruptcy courts.⁴⁰

This potential for increased (open) access to law not only concerns legal texts and materials but also relevant contextual information, including meta-data, as well as other information that is legally relevant.⁴¹ While the online access to legal materials disseminated by governments and administrators – more recently in the context of Open Data initiatives⁴² – has become a best practice in many jurisdictions, many of these materials have more recently become available in machine readable formats and start to embrace the Linked Open Data paradigm, which leads not only to greater access but also a deeper understanding of legal information.⁴³ Efforts such as the European Openlaws project are underway to build interoperable platforms for accessing linked data across institutions and jurisdictions, and demonstrate the promise of Open Access in the world of Big (Law) Data.⁴⁴

Moving from issues related to access to sources of law to issues related to the analysis of law, one can observe a similar transformative potential for digital communication. The battles among publishers, authors, funding agencies, libraries, and platforms about Open Access to legal knowledge in the form of law review articles, professional journals, casebooks, and treatises indicate both the seismic pressures that are at work and the conflicting (commercial) interests at stake.⁴⁵ Across these (and many other) contexts, the rise of general purpose search engines such as Google and Bing, but also a broad range of specialized legal search engines, have been game-changers in terms of enabling access to digital materials.⁴⁶

Finally, digital communication affects access to legal services. The constant connectivity between clients and lawyers powered by digital technology such as email, text messages, or instant messages, for instance, alters the availability and speed of access

⁴⁰ Pacer, Web page, n.d. <<https://www.pacer.gov/>>.

⁴¹ See, e.g., BOELLA GUIDO/KOSTANTINOV HRISTO, EU Cases: D1.1 Report on the state-of-the-art and user needs, 2014, p. 11 et seq.

⁴² See, e.g., with a recent comparison of new open government data initiatives, DAVIES TIMOTHY GLYN, Open Data Policies and Practice: An International Comparison, 2014.

⁴³ See, e.g., CASELLAS NÚRIA/VALLBÉ JOAN-JOSEP/BRUCE THOMAS ROBERT, From Legal Information to Open Legal Data: A Case Study in U.S. Federal Legal Information, 2011; On the vision of linking world law data, see PUIG SERGIO/TORRENTS ENRIC G., The Case for Linking World Law Data, in: Journal of Open Access to Law 2014 (forthcoming).

⁴⁴ See, <<http://www.openlaws.eu/>>, see also SALAMANCA OLIVIA/VAN EECHELD MIREILLE, Open Legal Data For Europe, Workshop Report, Amsterdam 2014.

⁴⁵ GREENLEAF GRAHAM, The Global development of free access to legal information, in: European Journal of Law and Technology 2010, p. 42 et seq.

⁴⁶ For a selection of legal search engines, directories, and other research tools, see, e.g., <<http://www.law.siu.edu/lawlib/general/search.htm>>.

to legal advice and consultation.⁴⁷ The rise of the «electronic legal marketplace»⁴⁸ with new types of intermediaries (such as LegalZoom or Rocket Lawyer) that provide increased access to legal services through scalable technology is another manifestation of the deeper-layered shifts.⁴⁹

d) Use of Law

Digital communication transforms the ways in which law is created, disseminated, and accessed. Together with these changes, it also affects the use of law when looking at the legal system as an information processing system.⁵⁰ From a system perspective, two shifts are particularly noteworthy in this respect: interaction between citizens and the government, and the use of software to carry out highly standardized transactions among private parties, including dispute resolution.

E-government is one area where the impact of digital communication on the use of law and legal information, broadly defined, becomes visible. Governments around the world have developed platforms and frameworks that enable citizens to interact with different branches of the government and streamline legal transactions – ranging from driver license renewal to the submission of court documents.⁵¹ An advanced example in this category is emerging one-stop business portals that consolidate the forms and information needed to start and run a company – including online wizards and software to automate the company's operating agreement.⁵²

Perhaps one of the more fundamental technology-enabled shifts affecting a core function of the legal system is the emergence of online dispute resolutions systems.⁵³ A new generation of platforms that are built upon the online dispute resolution systems that eBay and PayPal use to resolve large-scale numbers of disputes (over 60 million disputes) is another example that demonstrates the innovative use and disrupt-

⁴⁷ See, SUSSKIND (N. 21), ch. 4.2.

⁴⁸ See, SUSSKIND (N. 21), ch. 4.2.

⁴⁹ See, e.g., KATZ (N. 37), p. 127; see GURTNER JÉROME, *Les études d'avocats virtuelles aux États-Unis et en Suisse – Réalité ou fiction?*, in: ZSR 2014, p. 319 et seq.

⁵⁰ See, e.g., KATSH ETHAN, *Dispute Resolution Without Borders: Some Implications for the Emergence of Law in Cyberspace*, in: First Monday 2006.

⁵¹ For the global state of play, see, e.g., United Nations E-Government Survey 2014: E-Government for the Future We Want, United Nations, 2014.

⁵² See, e.g., the Nevada Secretary of State's SilverFlume portal, Web page, n.d. <<https://nvsilverflume.gov/home>>.

⁵³ See, fundamentally, KATSH ETHAN/RIFKIN JANET, *Online Dispute Resolution: Resolving Conflicts in Cyberspace*, San Francisco 2001; SUSSKIND RICHARD, *The Future of Law: Facing the Challenges of Information Technology*, Oxford 1998 and SUSSKIND (N. 21).

tive effects of digital technology involving the processing of legally relevant information.⁵⁴

3. Conclusions

The few examples provided in the previous paragraphs suggest that law's digital revolution is in progress, confirm many of the earlier predictions, and largely mirror a general pattern of change as far as information creation, dissemination, access, and use are concerned. The examples also suggest that the impact of digital communication on the legal system takes many different forms and shapes, and maps onto different stages of the information lifecycle.

When considering most recent technological advancements and applications, the increased economic pressure, the emergence of a legal technology industry,⁵⁵ and demographic shifts and behavioral patterns, it seems safe to conclude that the featured examples are precursors of deeper shifts in the legal system enabled by digital communication. For instance, the legal sector is just entering the era of Big Data and predictive analytics.⁵⁶ Predicting dispute outcomes or judicial decisions, forecasting costs or success rates of lawyers, and algorithmic discovery are only in their infancy, but have the potential – as already demonstrated in other industries – to transform not only the nature of the work lawyers do, but also law as an information system as such.⁵⁷

As noted, scholars and practitioners have studied the impact of digital communication on the legal system for decades. While some of the phenomena mentioned in the previous section are already well-documented and explored in detail, other issues are more nascent and subject to further analysis as law's digital revolution unfolds. However, given the enormous normative implications associated with the structural shifts indicated by the examples provided in the previous paragraphs, the next sections propose not only to study further law's digital revolution, but to develop an analytical framework that might serve as a basis for a more systematic and holistic evaluation of the impact of digital communications on the legal system.

⁵⁴ See, e.g., the online dispute resolution platform Modria, Web page, n.d. <<http://modria.com/>>.

⁵⁵ See, e.g., GOODENOUGH OLIVER, Legal Technology 3.0, in: Huffington Post 2015.

⁵⁶ See, e.g., KATZ DANIEL MARTIN, Quantitative Legal Prediction – or – How I Learned to Stop Worrying and Start Preparing for the Data Driven Future of the Legal Services Industry, in: Emory Law Journal 2013, p. 909 et seq.; STEVENSON DRURY D./WAGONER NICHOLAS J., Bargaining in the Shadow of Big Data, in: Florida Law Review 2014. See also GOLDBERG NOLAN M./MILLER MICAH W., The Practice of Law in the Age of <Big Data>, in: National Law Journal 2011; BLACKMAN JOSH, Robot, Esq., 2013.

⁵⁷ See, e.g., KATZ (N. 37), p. 118.

III. Contours of a Framework for Analyzing and Evaluating the Impact of Digital Communication on the Legal System

1. Need for an Analytical Framework

The previous section has identified – from a phenomenological perspective – a series of examples that indicate a number of digitally fueled changes affecting the legal system and mapped these developments on a life-cycle model of (legal) information. These shifts are the result of a complex interplay between technological, economic, and behavioral factors, among others. As such, law’s digital revolution is fluid and follows an evolutionary path, which is neither pre-determined by digital technology itself nor any of the other forces at play. That said, this path is also significantly shaped by policy-decisions and legal parameters, which have the potential to influence the direction and impact of future effects of digital communication on the legal system.⁵⁸

In this section, we propose an analytical framework, which helps to make visible the connections among the precursors of the structural shifts identified in the previous section, which might appear to be unrelated, but are in fact part of a larger story and context. A framework-based, more systematic mapping and analysis of digital communication’s impact on the legal system also provides the basis for a future normative discussion of both the individual and cumulative effects of such shifts. Against the backdrop of a deeper understanding of the issues at stake and the interplay among them, the framework can help identify appropriate places, times, and mechanisms for intervention aimed at shaping the future path of law in the digital age. Taken together, it might serve as a foundation and «navigation aid» for policy- and other decision-makers when developing strategies for the ways in which to approach the digital transformation processes over the next decade.

Moving from a phenomenological perspective towards such analytical framework, the following section borrows from interoperability theory and suggests a layered model to map and discuss the impact of digital communications on the legal system.⁵⁹ For each of these layers, we provide a brief description, a number of examples from Switzerland to illustrate its relevance with respect to digital communication and its

⁵⁸ Illustrative for the importance of legal parameters as both an enabler or inhibitor of digital shifts in law are professional regulations, see KOBAZASHI BRUCE H./RIBSTEIN LARRY E., *Law’s Information Revolution*, in: *Arizona Law Review* 2011, p. 1169 et seq.

⁵⁹ PALFREY JOHN/GASSER URS, *Interop: The Promise and Perils of Highly Interconnected Systems*, New York 2012.

impact on the legal system, and a non-comprehensive laundry list of issues for future consideration and deeper analysis.

2. Four Layers Model

a) Technological Layer

Digital communication that affects the legal system as indicated in the previous section is based on a technological layer consisting of the hardware and code that allows systems, applications, and components to physically connect to one another. Much like train tracks and roads allow cities to connect and share commerce, the technological layer allows systems to connect to one another and share data, often through an explicit, agreed-upon interface. The technological layer cuts across all phases of the information lifecycle and is the basis for the creation, dissemination, access, and use of law as information. It includes a great variety of platforms and systems, ranging from e-Governance platforms in the public sector to e-Discovery systems in the corporate context.

In Switzerland, numerous public initiatives and projects aimed at establishing the necessary technical infrastructure that enables the law's digital transformation have emerged over the years, with many currently underway. The Swiss e-Collecting project, for instance, follows the extensive experience with e-Voting in Switzerland and allows the collection of signatures in the context of popular initiatives and referendums when proposing the creation of new law.⁶⁰ The infrastructure that enables electronic case filing and management («elektronischer Rechtsverkehr») is illustrative of a digital platform that affects the dissemination and use of legal information as well as access to it.⁶¹ Similarly, the project eSchKG creates a normative framework for the exchange of electronic business information between parties in a debt collection (cantonal agencies [«Betreibungsämter»] and creditors) that allows creditors, for instance, to initiate a debt enforcement proceeding («Betreibungsverfahren») electron-

⁶⁰ Schweizerische Eidgenossenschaft, Schweizerische Bundeskanzlei, Vote électronique, Chronik, Web page, n.d. <<http://www.bk.admin.ch/themen/pore/evoting/00774/index.html?lang=de>>.

⁶¹ GUYAN PETER/HUBER LUKAS, Elektronischer Rechtsverkehr nach VeÜ-ZSSchK, in: AJP/PJA 2011, p. 74 et seq.

ically.⁶² Another example is eGRIS, a system aimed at streamlining the information exchange in matters of land registers («Grundbuchwesen»)⁶³

A closer look at any of these projects reveals the enormous technical, organizational, and legal complexities at work when creating digital infrastructures that enable many of the structural shifts described in the previous section. In each case, but also across platforms, a broad range of strategic issues has to be considered, including availability and reliability, interoperability, data protection, security and integrity, and compliance of the technical infrastructure, among many other considerations such as user interface design. The example of the phased introduction (and extensive testing) of e-Voting systems in Switzerland is a particularly rich case study of how such complexity can be successfully managed.⁶⁴

b) Data Layer

Interconnectedness at the technical layer is necessary, but not a sufficient condition to enable digital communication within the legal system. It is not sufficient for technological systems to simply pass data from one system to another if the recipient cannot understand the data. The data and technological layers are linked in many ways, but are analytically different, as anyone who has ever received an e-mail attachment that their computer could not open knows. Data *standards* are a key to achieving interoperability at the data layer as more and more actors are involved in the creation, distribution, and use of legal information, as discussed in the previous section.

An important international standard setting initiative is Legal XML, a non-profit organization that develops open, non-proprietary technical standards for structuring legal documents and information based on the eXtensible Markup Language developed by the World Wide Consortium.⁶⁵ In Switzerland, a country-specific version of the Legal XML standard was adopted in 2006 by a group of experts, including rep-

⁶² Schweizerische Eidgenossenschaft, Bundesamt für Justiz, Projekt eSchKG, Web page, n.d. <<https://www.bj.admin.ch/bj/de/home/staat/rechtsinformatik/e-schkg.html>>; Elektronischer Datenstandard für das Betreuungswesen, Web page, n.d. <http://www.e-service.admin.ch/eschkg-testbed/cms/index_html_de>.

⁶³ See Elektronisches Grundstückinformationssystem (eGris), Web page, n.d. <<http://www.cadastre.ch/internet/gb/de/home/egris.html>> and NZZ am Sonntag, Web page, March 15, 2015, <<http://www.pressreader.com/switzerland/nzz-am-sonntag/20150315/282351153254385/TextView>>.

⁶⁴ With focus on lessons learned from the Swiss experience, see, TRECHSEL/GASSER (N. 24).

⁶⁵ See WINCHEL VINCENT «TODD», Legal XML and Standards for the Legal Industry, in: SMU Law Review 2000, p. 101 et seq. PALMIRANI MONICA, Legal XML, 2014, Web page, n.d. <http://eucases.eu/fileadmin/EUCases/documents/Presentations/Torino2014/Palmirani_LegalXML2014.pdf>.

representatives of the Federal Office of Justice, the Federal Chancellery, the Federal Supreme Court, and various cantons. CHLexML is the Swiss legislation data standard that serves as a structural framework for the storage, transmission, and representation of Swiss law texts.⁶⁶

Technical standards for structuring legal documents and information using XML and related technologies are important milestones for Open Access to law. However, many additional challenges remain at the data layer as the focus shifts from free access to law towards an enhanced vision of linked legal open data as a stepping stone towards a future legal semantic web.⁶⁷ For instance, standards for establishing legal links, citation techniques, and uniform identifiers are still under development.⁶⁸

Looking beyond access to public legal data, the Swiss association («Verein») eCH has become a key actor in developing and promoting Swiss e-Government standards, which are released as recommendations, but can be adopted as mandatory standards at the federal, cantonal, or municipal level.⁶⁹ The work of eCH is illustrative of the great variety of standards that need to be developed and coordinated when implementing e-Government strategies, ranging from data standards regarding mailing addresses of citizens to data standards for notarized land registry documents («notarielle Grundbuchbelege»)⁷⁰. Data standards also play a key role in the context of Open Data initiatives such as the Swiss Open Government Data Pilot Portal,⁷¹ which makes data from public authorities via open Application Programming Interfaces (API) available for secondary use by all interested parties, free of charge, and typically in machine-readable form.⁷²

⁶⁶ See eJustice.ch, CHLexML, Web page, n.d. <<http://www.svri.ch/de/CHLexML.html>>, and Schweizerischer Verein für Rechtsinformatik, CHLexML: Data Standard for the Representation of Swiss Law Texts, Web page, n.d. <http://www.svri.ch/de/pdf/CHLexML_Reference_1.0.pdf>, CHLexML, Legal Magazine, Legal resources and news for lawyers and their clients, Web page, n.d. <<http://www.legal-magazine.com/chlexml/>>.

⁶⁷ Linked data «is a format for publishing data online in a machine readable way, which allows different sources to be aggregated and referenced without knowing every potential source of information in advance», see, e.g. SUTHERLAND SARAH, The Case for Linked Data as Legal Information Infrastructure, in: *Slaw*, 2013.

⁶⁸ For the situation across the EU, see BOELLA/KOSTANTINOV (N. 41).

⁶⁹ See Web page, n.d. <http://www.ech.ch/vechweb/page?p=page&site=/ueber_eCH>.

⁷⁰ See for a full thematic list of standards, Web page, n.d. <<http://www.ech.ch/vechweb/page?p=categoryList&site=/documents/Alle/nach%20Themenbereich>>.

⁷¹ See, e.g., Bundesrat, Open-Government-Data-Strategie Schweiz 2014–2018, April 16, 2014, p. 3501 et seq.

⁷² See, Web page, n.d. <<http://www.opendata.admin.ch/>>.

c) Institutional Layer

The previous sections and paragraphs have already indicated that the effects of digital communication on the legal system are not merely a matter of technology and data. Rather, its impact is significantly shaped by non-technical factors, including the surrounding institutional framework. From an interoperability perspective, laws and policies are important elements at the institutional layer that shape digital communication and its effects on the creation, dissemination, access, and use of law as information. By and large, such institutional settings can have enabling or constraining effects on the digital phenomenon. For instance, in most European countries the shifts in how citizens access legal information, as described in the previous section, have been enabled and bolstered by different pieces of legislation, including Freedom of Information and Access to Information legislation, legislation permitting the re-use of public sector information, and, most recently, Open Data laws and regulations.⁷³ Further, general laws such as copyright law or liability regimes have an (often limiting) impact on the accessibility and use of public legal data.⁷⁴

In Switzerland, several of the digital transformation processes affecting the legal system have been shaped in important ways by public policy and strategy. For instance, the Swiss Open Government Data strategy has to be read in the context of the Strategy of the Federal Council for an Information Society in Switzerland,⁷⁵ as well as the Swiss e-Government strategy.⁷⁶ Various pieces of legislation, including Federal and Cantonal Freedom of Information Acts have played a key enabling role by shifting the default from confidentiality to accessibility for official documents.⁷⁷

It is important to note that the institutional layer consists not only of laws and regulations that affect digital communication. Policies and best practices embraced by government agencies, as well as by private entities might also play an important role. One example is the Swiss Association eJustice.ch, which promotes the use of information and communication technologies in governments and provides a forum for

⁷³ See, e.g., BOELLA/KOSTANTINOV (N. 41), p. 11 et seq. for an overview; See also BURKERT HERBERT, *Internet, E-Government and Information Access*, Beijing 2005, Web page <http://www.kas.de/wf/doc/kas_6952-1522-2-30.pdf?051011092006>.

⁷⁴ BOELLA/KOSTANTINOV (N. 41), p. 3.

⁷⁵ See Strategy of the Federal Council for an Information Society in Switzerland. Federal Department for the Environment, Transport, Energy and Communications (DETEC), March 2012, Web page <http://www.bakom.admin.ch/themen/infosociety/04837/index.html?lang=en&download=NHzLpZeg7t,lnp6lONTU042l2Z6ln1ad1lZn4Z2qZpnO2Yuq2Z6gpJCDe3x3g2ym162epY-bg2c_JjKbNoKSn6A->>.

⁷⁶ Bundesrat, *E-Government-Strategie Schweiz*, January 24, 2007.

⁷⁷ See, e.g., GASSERT HANNES, et al., *Open Government Data für die Schweiz: Ein Manifest*, 2011, Web page <<http://opendata.ch/files/2011/06/OGD-Manifest-Schweiz-1.0.pdf>>.

knowledge transfer. Another example is the Swiss National Science Foundation, a private foundation awarding public research money based on a competitive system to outstanding researchers, which recently adopted an Open Access policy to ensure that research funded by the public is accessible as widely as possible and free of charge.⁷⁸ Such a decision at the organizational level has an impact on the dissemination, accessibility, and use of legal research and knowledge.

d) Human Layer

As already noted, human factors also play a decisive role in the ways in which digital communication affects the legal system and the future trajectory of the law's digital revolution. As in other sectors, people's adoption and use of digital technology in the context of law depends on a large number of variables, from general preconditions such as access to technology and digital literacy to more specific issues, like individual preferences regarding information seeking, evaluation, and usage. Various empirical studies suggest that young users particularly prefer accessing and interacting with different types of information online.⁷⁹ These general usage trends and preferences indicate that the current and future population of users will engage with the various types of legal information and broad range of legal services over digital channels and platforms.⁸⁰

An important human layer factor is education.⁸¹ Generally, education shapes the level of digital skills across populations and sets the baseline condition for the meaningful use of digital technology, including as a way to interact with the legal system in general and legal information in particular. More specifically, professional education of individuals who will become part of the legal system, broadly defined, and/or who will be involved with the creation, dissemination, or use of legal information, will have a significant impact on the future trajectory of law's digital revolution.

Students at Swiss Law Schools are deeply embedded in the world of digital information and platforms. Electronic library catalogues such as Alexandria, JusBib, or Swiss-

⁷⁸ Swiss National Science Foundation, Open Access, Web page, n.d. <<http://www.snf.ch/en/researchinFocus/dossiers/open-access/Pages/default.aspx>>.

⁷⁹ In the context of youth, see, e.g., GASSER URS, et al., *Youth and Digital Media: From Credibility to Information Quality*, Berkman Center Research Publication, Cambridge 2012.

⁸⁰ See generally PALFREY JOHN/GASSER URS, *Born Digital*, Basic Books, 2008. See also PALFREY JOHN, *Smarter Law School Casebooks*, in: Edward Rubin (Ed.), *Legal Education in the Digital Age 2014*, p. 106 et seq.

⁸¹ Other important dimensions include communities and movements. For instance, the Open Data movement plays an important role and has gained additional visibility through its legal hackathons, see, e.g., for Switzerland opendata.ch and its make.opendata.ch Hackdays, Web page, n.d. <<http://make.opendata.ch/?lang=en>>.

lawbib,⁸² legal databases like Swisslex, online sources such as cantonal and federal websites that provide access to legal materials,⁸³ newsletters such as Jusletter,⁸⁴ Open Access journals such as sui-generis.ch or interactive electronic study platforms are part of everyday life for most students, as are general purpose search engines, social media, and instant messaging. More broadly, Law Schools in Switzerland have embraced digital realities in many different ways and to varying degrees, for instance, in pedagogy and teaching through the use of digital technology in the classroom and investments in digital infrastructures for distance and e-learning,⁸⁵ to name just a few examples.

While personal experience suggests that at least individual faculty members discuss digital research strategies and skills with their students, and that digital communication and the impact on legal information has also become a topic of continued education,⁸⁶ the Swiss discussion about the reform of legal education in the digital age has not yet reached the level of intensity seen in the US, where a relatively broad discussion about creating digital course materials, teaching with digital tools, and curriculum reform is currently taking place⁸⁷—culminating in proposals for «Educating the Digital Lawyer»⁸⁸.

3. Conclusions

As previously discussed, the rise of digital communication in recent years has profoundly affected the legal system. Specifically, the structural shifts resulting from digitization have led to changes in the creation, dissemination, access, and use of law.

⁸² See «Alexandria Portal» Web page, n.d. <<http://www.alexandria.ch>>; «Jusbib», Web page, n.d. <<https://jus.swissbib.ch/>>; «Swiss Law Bibliography», Web page, n.d. <<http://www.swiss-lawbib.ch/fmi/webd#SwissLawBibliography>>.

⁸³ See, e.g., Swisslex see <<https://www.swisslex.ch/>>; Federal law search, Web page, n.d. <www.bundesrecht.admin.ch>; Jusbib, Web page, n.d. <<https://jus.swissbib.ch/Search/Home?lng=de>>; Registerinformatisierung, Web page, n.d. <<https://www.bj.admin.ch/bj/de/home/staat/rechtsinformatik/registerinformatisierung.html>>.

⁸⁴ Web page, <<http://jusletter.weblaw.ch/>>.

⁸⁵ See, e.g., Rechtswissenschaftliche Fakultät – E-Learning an der Rechtswissenschaftlichen Fakultät, Universität Zürich, Web page, n.d. <<http://www.ius.uzh.ch/studium/ELearning/Online-Angebote/LexNet.html>>; LexNet, Web page, n.d. <<http://www.rwi.uzh.ch/lexnet/lexnetdb/startseite.htm>>.

⁸⁶ See, e.g., Swissuni, Web page, n.d. <http://www.swissuni.ch/index_DE>.

⁸⁷ See, e.g., the contributions in: Edward Rubin (Ed.), *Legal Education in the Digital Age 2014*; GOODENOUGH OLIVER R., *Developing an E-Curriculum: Reflections on the Future of Legal Education and on the Importance of Digital Expertise*, in: *Chicago-Kent Law Review* 2013, p. 845 et seq.

⁸⁸ See, GOODENOUGH OLIVER R./LAURITSEN MARC (Eds.), *Educating The Digital Lawyer*, Providence 2012.

As the legal system undergoes this digital revolution, changing the way that both practitioners and the general public must approach law, it has become increasingly clear that there is a need to take a systematic approach to the system's technological, data, institutional, and human layers in order to both enable and take advantage of the above mentioned tectonic shifts.

In the context of the technological and data layers, the «enabling» strategy (which needs to be complemented by adequate safeguards) is one which focuses on the development of the legal system's technical infrastructure ranging from components which facilitate e-voting and signatures to online case management, and standards that provide for increased interoperability and access. While engaging the government in such development must be an essential component of any framework, involving private industry in such infrastructure creation and standard setting is equally key, as true digital interoperability in the legal system cannot be achieved unless all actors – from courts, to law firms, to corporations, and civil society organizations – are operating under the same standards and with similarly advanced infrastructures.

While technological factors are significant when discussing the impact of digital communication on the legal system, non-technical factors – specifically the institutional framework and human layer – are equally impactful. In regards to the institutional layer, the shifts in how law is disseminated and accessed are particularly important. As legal resources – including case law, legislation, legal analysis, legal news, and so forth – are increasingly disseminated by firms and government entities online, and as users increasingly access this information in real-time, governments must look for ways to «shift the default» not only in terms of confidentiality versus accessibility, but also in ways that enable wide access to and use of legal resources. Furthermore, governments must not only seek to increase accessibility, but also to do so in a way that allows the public to navigate and make use of relevant information as a «digitized» legal environment, for instance through simple and user-friendly databases design, public awareness campaigns, etc.

Finally, the above discussion illustrates how the human layer will play an equally significant role as technical factors and the institutional framework in enabling law's digital development, as well as allowing professionals and the population to take advantage of the significant opportunities presented by digital communication. The human layer is important from both a «supply» and «demand» perspective: both an informed population – with regard to the legal resources available, how to access these resources, etc. – and legal professionals educated about the creation, dissemination, and use of legal information in a digital context are necessary. Moving forward, it is critical to assure that we are «educating the digital lawyer» in terms of the content and structure of legal education, thus preparing next generation legal pro-

professionals to work in the globally networked digital environment and with clients who have the skills necessary to readily engage with legal resources online.⁸⁹

IV. Outlook: Call for a Strategic Approach to Shaping the Legal System's Digital Future

1. Need for a Strategy and Strategic Literacy

The framework outlined in the previous section serves as a vehicle to analyze and evaluate the various moving elements – as well as their interplay – that collectively constitute law's digital revolution. It also allows the mapping of the existing body of relevant knowledge, whether theoretical or empirical, that helps us to better understand the tectonic shifts and their consequences, as well as the identification of knowledge gaps. Most importantly, however, the framework serves as a foundation to move from analysis and evaluation towards *action*, acknowledging that the future direction and implications of law's digital revolution *can and should be shaped*.

Given the highly dynamic nature of the development of digital technology, its complex interactions with the legal system as summarized in the first part of the essay, and in light of the values and issues at stake, we propose that any action aimed at shaping law's digital future should be embedded in a set of meta-considerations that we see as part of a *strategic approach* to law's digital future. The very nature of the revolutionary process associated with digital communication calls for such a strategic perspective in view of certain characteristics of the issues at stake.

Many of the issues are unprecedented and future-oriented, affect core values and interests, and are unusually complex because of their trans-border nature and systemic interdependencies. They require an above average management of time and timelines, and knowledge of multistakeholder and other processes. Dealing with the law's digital future involves fundamental decisions across all stages of policy-making and shaping, ranging from goal-setting to execution and control, and calls for specifically designed, flexible implementation paths when attempting to pursue the respective objectives in today's quicksilver technology environment. Overall, the phenomenon is characterized by a very high degree of complexity, which requires dealing with unpredictable future developments, inherent contradictions of positions, and inconsistent perceptions.

⁸⁹ On the person-centered conceptualization of layers as key legal actors in the legal process of globalization see DROLSHAMMER JENS, *A Timely Turn to the Lawyer? Globalisierung und die Anglo-Amerikanisierung von Recht und Rechtsberufen* 2008.

Arguably, many of these features require modes of thinking and acting that are not deeply rooted in the DNA and traditions of legal professionals and scholars. Consequently, the call for a strategic approach when dealing with law's digital revolution and its future is confronted with at least two *methodological baseline challenges*:

- The *mindset* challenge relates to the observation that lawyers and «legal science» traditionally and generally have a record of being *strategy-averse* for a series of reasons discussed elsewhere.⁹⁰ As a variation on this theme, the current state of play as outlined in this essay suggests a missing link between the analysis and action-oriented thinking of lawyers with respect to the complex constellations concerning digital communication and the law. In other words, the proposed strategic approach has to be rooted in a specific attitude of thinking and action, and anchored in a corresponding «mindset»⁹¹ that should not be taken for granted and needs to be developed.
- Related to the mindset challenge is a *methods of law* problem when we seek to shape the law's digital future, requiring the merging of traditional modes and methods of legal reasoning with elements of strategic thinking and analysis. To address this challenge, we propose integrating into legal methodology insights from strategy theory and practice as developed, for instance, in the fields of management,⁹² military, and security policy.⁹³ In the present day tool-kits of military and management strategic thinking, the five «Ps» of strategy, i.e. Plan, Ploy, Pattern, Position and Perspective, might inform the design of analysis and action when bridging the extreme options of «total planning» and «mudding through», in the spirit of *planned evolution* as a manifestation of strategic thinking in the form of a «continuous and collective learning process»⁹⁴. Such an approach needs to consider culture-specific aspects of the legal environment, as further discussed

⁹⁰ See DROLSHAMMER JENS; Risk and Response, Zur Notwendigkeit eines strategischen Umgangs mit «catastrophic risks», in: Grenzbereichen technologischer und wissenschaftlicher Entwicklungen, Festschrift für Jacques Santer, Luxemburg 2007, p. 103 et seq.

⁹¹ GARDNER HOWARD, Five Minds for the Future, Boston 2006.

⁹² See, e.g., MINTZBERG HENRY (Ed.), Strategy Safari: eine Reise durch die Wildnis des strategischen Managements, Wien 1999; MINTZBERG HENRY/QUINN JAMES BRIAN, Ghoshal Sumantra, The Strategy Process, European edition, 1995; MÜLLER STEVENS GÜNTHER/LECHNER CHRISTOPH, Strategisches Management: Wie strategische Initiativen zum Wandel führen, Stuttgart 2001.

⁹³ See, e.g., DE JOMINI ANTOINE HENRI, The Art of War, London and Pennsylvania 1992; DE MONTBRIAL THIERRY/JEAN KLEIN (Eds.), Dictionnaire de Stratégie, Paris 2000; KENNEDY PAUL, Grand Strategies in War and Peace, Yale 1991; MÜNKLER ALFRED, Die neuen Kriege, Reinbeck 2002; STAHEL ALBERT A., Strategie und Konfliktforschung: Klassiker der Strategie – eine Bewertung, Zürich 2003; TZU SUN, The Art of War, London 1995; VAN CREVELD MARTIN, On Future War, London, Washington and New York 1991; WINDSOR PHILIP, Strategic Thinking: An Introduction and Farewell, Boulder 2002, LAWRECNE FREEDMAN, Strategy, Oxford University Press 2013.

⁹⁴ See DROLSHAMMER JENS, Risk and Response, p. 102 et seq.

below for the Swiss context, but also deal with the transnational and international dimensions of the digital revolution and develop positions on «legal compatibility», «legal competitiveness»,⁹⁵ and «legal interoperability»⁹⁶.

When addressing these baseline challenges and working towards a new strategic literacy for lawyers in the digital age, a move from a «systems-oriented» to a «person-centered» concept of the legal process in grasping and shaping the impacts of the digital revolution could be a helpful complementary perspective.⁹⁷ The strategic analysis of the impacts of digital communication will certainly entail an extension of the capabilities and skills of international lawyers as actors.⁹⁸ Another key dimension of this new strategic legal thinking will be the integration of the concept of law with the concept of communication, establishing the necessary sphere of public consciousness and transparency, which is a precondition for successfully shaping the impacts of digital communication on the legal system.⁹⁹

⁹⁵ HABERMAS JÜRGEN, *On The Pragmatics of Communication*, Cambridge Massachusetts 1998; DROLSHAMMER JENS, *Recht, Rechtsberufe und Rechtsreputation als Faktoren der internationalen Wettbewerbsfähigkeit der Schweiz*, Zürich and St. Gallen 2007.

⁹⁶ See PALFREY/GASSER (N. 59), ch. 10; WEBER ROLF H., *Legal Interoperability as a Tool for Combating Fragmentation*, Global Commission of Internet Governance, Paper Series, November – December 2014, Web page <https://www.cigionline.org/sites/default/files/gcig_paper_no4.pdf>; DROLSHAMMER JENS, «International law is what international lawyers do» in *Festschrift zum 70. Geburtstag von Daniel Thürer*, Summer 2015 (forthcoming).

⁹⁷ See DROLSHAMMER JENS, *A College Of International Lawyers In A Networked Society – The Need For Concepts for A New International Lawyer From A Global Perspective In Reflections Of The Legal Practice Of Law*, in *Liber Amicorum for Bär & Karrer, Nedim Peter Vogt (Ed.)*, Basel and Geneva 2000; *A Timely Turn To The Lawyer, Globalisierung und die Anglo-Amerikanisierung von Recht und Rechtsberufen*, Zürich, 2009.

⁹⁸ DROLSHAMMER JENS, *Internationalisierung der Rechtsausbildung und Forschung*, Basle, Geneva, 2000, p. 164 et seq.

⁹⁹ See DROLSHAMMER JENS, *Verlangt die Globalisierung eine Neuausrichtung der Forschung? Beispiele von Forschungsfeldern im Bereich des Management aus Sicht des International Lawyers*, in: *A Timely Turn To The Lawyer*, p. 373 et seq., in particular j) *On the interrelation of law and communication, with an habermasian insert of the recently deceased sociologist Kurt Imhof on p. 424 et seq.*; on systematic efforts to increase the transparency and compatibility of the Swiss Legal System across the board, see DROLSHAMMER JENS/VOGT NEDIM PETER, *English as the Language of Law? – An Essay on the Legal Lingua Franca of a shrinking world*, Zürich 2003; VOGT NEDIM PETER/DROLSHAMMER JENS (general Eds.), *Swiss Law Bibliography*, Basle, Geneva and Munich 2005; COTTIER THOMAS/DROLSHAMMER JENS (general Eds.), *The Anthology of Swiss Legal Culture*, Web page <www.legalanthology.ch>.

2. Four Guiding Questions for the Future

Building upon the proposal for a new strategic literacy as part of a strategic and holistic approach to shaping law's digital future, we suggest four guiding questions for future debate when dealing with the legal system's digital future in Switzerland:

1. *Where does Switzerland stand with regard to digital communication and the law in general and law's digital transformation in particular?* As a next step in the strategy-making process, we propose a systematic, empirical stock-taking – using mixed methods such as desk reviews, interviews, surveys, observational studies, etc. – of the relevant digital transformation processes affecting the law across the federal, cantonal, and municipal levels, across the executive, legislative, and judiciary branches, and including both the public and private sectors.
2. *Where does Switzerland want to be in the future in terms of the digital state of affairs of its legal system?* While digital communication will continue to change the legal system, what are the risks associated with these transformation processes that we as a society and legal community want to address pro-actively, avoid where possible, and manage where necessary? Building upon existing experiences, how can we foster the use of digital communication to embrace the opportunities that come with it for the creation, dissemination, access, and use of law? Which position do we want to achieve internationally, as law has become a key factor in the global competition as reflected in various rankings? What are the desirable levels of legal compatibility, competitiveness, and interoperability domestically and internationally, across spheres and sectors?
3. *How will we achieve these objectives, domestically and internationally?* What are the mechanisms, processes, and resources needed? Considering the full range of instruments available in the toolbox, what are the means to achieve the goals identified in the previous steps – from legislative measures to private-public partnerships, from additional investments in the digital infrastructure to bolster law's digital transformation to investments in the education of «digital lawyers», as well as legally savvy engineers, and from coordinated communication strategies about Swiss law in the international arena to the support of local civil society, including the Open Data and Open Law movements?
4. *How can we measure progress across the areas mentioned above and with respect to the goals defined for the law's digital future?* What are indicators and metrics of success when it comes to the law's digital transformation, across the various sectors and actors? What are appropriate, reliable, transparent, but also privacy-protecting methods for measurement and evaluation? Beyond benchmarking, what are feedback mechanisms for learning and improvement? What sort of foresight analysis and horizon scanning are needed to anticipate complica-

tions and avoid possible pitfalls? What are accountability and correction mechanisms in case of failure or lack of progress? Who takes and shares responsibility for what?

In our views, Switzerland is uniquely positioned to develop answers to these guiding questions and work towards a *national strategy* that has international relevance.¹⁰⁰ Indeed, Switzerland has extensive experience in establishing high levels of technical, but also institutional interoperability among different systems and decentralized components that can bear fruit in the digital law context. Second, a strategy for shaping Swiss law's digital future requires many actors to work together across the public and private divide, taking into account different cultures, interests, and priorities – again, an area where we can benefit from a rich repertoire of processes and organizational formats, including successful multi-stakeholder experiences.¹⁰¹ Third, representatives of the Swiss government, Swiss business leaders, and academics play important roles in international discussions about the future of Internet and its governance, and bring world-class knowledge about the interplay between digital communication and law to the table. And last but not least, Switzerland has highly respected platforms – both in terms of «software» and «hardware» and including unique private-public organizations such as WEF¹⁰² or the Geneva Internet Platform¹⁰³ – available to facilitate not only expert consultations, but also large-scale consultation processes.

In the light of these strengths and opportunities, we hope that this essay – written from a transatlantic perspective – may be received as an invitation and inspiration for a larger conversation about the future of Swiss law in the digital age and, potentially, may serve as a stepping-stone towards a national strategy that enables Switzerland to harness the full potential of digital technology for the public good, also and especially when it comes to Swiss law.

¹⁰⁰ Such a national strategy could be an element of an emerging global framework, see WEBER ROLF H., *Realizing a New Global Cyberspace Framework: Normative Foundations and Guiding Principles*, Heidelberg and Zurich 2014.

¹⁰¹ See, e.g., WEBER ROLF H./SCHNEIDER THOMAS, *Internet Governance and Switzerland's Particular Role in Its Process*, Zürich 2009.

¹⁰² See particularly WEF's Future of the Internet Initiative, Web page <<http://www.weforum.org/news/world-economic-forum-launches-future-internet-initiative>>.

¹⁰³ Botschaft zu den Massnahmen zur Stärkung der Rolle der Schweiz als Gaststaat, 14.0478, Vorabdruck, Web page <<http://www.news.admin.ch/NSBSubscriber/message/attachments/37410.pdf>>.