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AUTOMATION

Regtech as a new
legal challenge

ROLF H. WEBER

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CONTENTS

AUTOMATION

- 10 **Regtech as a new legal challenge**
Rolf H. Weber, Professor for Civil, Commercial and European Law, University of Zurich Law School, and Counsel, Bratschi Wiederkehr & Buob AG (Zurich)
- 18 **Bridging the gap between investment banking infrastructure and distributed ledgers**
Martin Walker, Banking & Finance Director, Center for Evidence-Based Management
Anton Semenov, Principal Business Analyst, Commerzbank AG
- 34 **Rethinking robotics? Take a step back**
Ashwin Gadre, Partner, Capco
Ben Jessel, Managing Principal, Capco Digital
Karan Gulati, Principal Consultant, Capco
- 46 **To robo or not to robo: The rise of automated financial advice**
Thomas H. Davenport, President's Distinguished Professor of IT and Management
Babson College, Research Director, International Institute for Analytics, and Digital Fellow,
MIT Center for Digital Business
- 54 **Understanding robotic process automation (RPA)**
Markus Alberth, Managing Principal, Capco
Michael Mattern, Managing Principal, Capco
- 62 **Robotizing Global Financial Shared Services at Royal DSM**
Mary Lacity, Curators' Distinguished Professor, University of Missouri-St. Louis,
and Visiting Scholar, MIT CISR
Leslie Willcocks, Professor of Technology Work and Globalization, Department of Management,
The London School of Economics and Political Science
Andrew Craig, Associate Researcher, The Outsourcing Unit, The London School of Economics
and Political Science
- 76 **The financial auditing of distributed ledgers, blockchain, and cryptocurrencies**
Daniel Broby, Director, Centre for Financial Regulation and Innovation, Strathclyde Business School
Greig Paul, Researcher, Strathclyde University
- 88 **Targeting the robo-advice customer: The development of a psychographic segmentation model for financial advice robots**
Diederick van Thiel, AdviceRobo and Tilburg University
W. Fred van Raaij, Professor of Economic Psychology, Tilburg University



BUSINESS MODELS

- 104 **Avoiding pitfalls and unlocking real business value with RPA**
Lambert Rutaganda, Consultant, Capco
Rudolf Bergstrom, Senior Consultant, Capco
Avijeet Jayashekhar, Managing Principal, Capco
Danushka Jayasinghe, Associate, Capco
Jibran Ahmed, Managing Principal, Capco
- 114 **The impact of financial regulation on business models of cooperative banks in Germany**
Matthias Fischer, Professor of Banking and Finance, Technische Hochschule Nürnberg Georg Simon Ohm, Germany; Adjunct Professor of Banking and Finance at IAE Université Nice Sophia Antipolis, France
- 128 **Transforming the theory and practice of risk management in financial enterprises**
Tom Butler, Professor, GRC Technology Centre, University College Cork, Ireland
Robert Brooks, Director, Risk Advisory, Deloitte, London, UK
- 148 **Reconciliations: Five trends shaping the future landscape**
Arif Khan, Principal Consultant, Capco
- 159 **Thank you and goodbye – ending customer relationships and its significance**
David Lim, Senior Consultant, Capco



INVESTMENTS

- 168 **Intelligent financial planning for life**
Michael A. H. Dempster, Professor Emeritus, University of Cambridge, and Managing Director, Cambridge Systems Associates
- 178 **The hybrid advice model**
Kapin Vora, Partner, Capco Digital
Tobias Henry, Managing Principal, Capco Digital
Jacob Wampfler, Senior Consultant, Capco
Mike Clarke, Senior Consultant, Capco
- 186 **Tax cuts: Fuel share prices, not necessarily a catalyst for economic growth**
Blu Putnam, Chief Economist, CME Group
Erik Norland, Senior Economist, CME Group
- 193 **Actively managed versus passive mutual funds: A race of two portfolios**
Atanu Saha, Chairman, Data Science Partners
Alex Rinaudo, Chief Executive, Data Science Partners
- 207 **Aligning interests over the long term: An incentive structure for U.S. 501(c)(3) private foundations**
Christopher Rapcewicz, Director of Investment Risk Management and Operations, The Leona M. and Harry B. Helmsley Charitable Trust
- 219 **Financial inclusion and consumer payment choice**
Allison Cole, Ph.D. Candidate, Massachusetts Institute of Technology
Claire Greene, Payment Analyst, Consumer Payments Research Center, Federal Reserve Bank of Boston



Regtech as a new legal challenge

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ABSTRACT

In view of the digitization of many parts of the economy, regtech will gain importance and constitute a growing challenge for private organizations as well as for regulators. As far as businesses are concerned, the new technological environment requires the implementation of better risk management and IT compliance systems. Regulators should provide an example of a forward-looking implementation of IT-enabled systems.

A paradigm shift is expected to occur in financial regulation. Among others, the well-known principle of “know-your-customer” (KYC) might be complemented by a new principle, “know-your-data” (KYD). This new perspective leads to more data-driven regulations and compliance models.

Since the challenges rapidly evolve in the technological environment, regtech should be built into a reconceptualized (financial) regulatory regime. The paradigm shift based on a holistic approach will have to put more emphasis on the nexus of data and digital identity. Data needs to be gathered globally on a real-time basis and processed in a coherent way in order to meet the cross-border needs of businesses and regulators.

1. REGTECH: TERM AND MEANING

Officially, the term “regtech” was used for the first time in March 2015 in the U.K., mainly related to the potential of fintech, by the U.K. Government Office for Science¹ and by the British Finance Ministry.² Since then, regtech has become a buzzword for private enterprises as well as public regulatory authorities. Nevertheless, there is not a universally accepted definition of regtech; instead we have a number of different descriptions.³

In the U.K., regtech is usually linked to fintech; it is even argued that fintech encompasses regtech.⁴ Such an approach appears to be problematic: regtech has the potential for application in a wide range of contexts; for example, the potential of continuous monitoring capacity, of providing close to real-time insights, of using deep learning and artificial intelligence, and of enabling the functioning of the markets nationally and globally.⁵ Even if regtech might remain a major driver for fintech, the two terms need to be distinguished since regtech represents more than just an efficiency tool; rather it is a pivotal change leading to a paradigm shift in regulation [Arner et al. (2017), 382 and 383].

By harnessing the capabilities of new technologies such as big data, cloud computing, and distributed ledger technologies, regtech is able to design solutions to help enterprises and supervisory authorities across all sectors of the economy to ensure that they comply with the given regulatory environment.⁶ In this sense, the contours of regtech can be described as follows:⁷

- **Regtech in a narrow sense:** organizational compliance processes of (financial) enterprises can be designed and implemented in a more efficient way by using new technologies through, for example, the replacement of analog by digital processes. Automation is suitable for facilitating the reporting requirements and the supervision of regulated enterprises.
- **Regtech in a wide sense:** if regulatory and supervisory authorities also apply digital technologies for the execution of their activities, better efficiency objectives are achievable; thereby, coherence between public and private technologies becomes essential. In other words, unified data formats, compatible programming interfaces (API), and machine readable interactions are needed.⁸

Regtech can be understood as a new regulatory program and could deal with everything from digital identity to data sovereignty, thereby extending beyond the financial sphere.

2. REGTECH: IMPORTANCE AND SCOPE OF APPLICATION

From a business perspective, regtech is an answer to the increasing administrative tasks caused by the growing number of regulations that have been released during the last ten years since the outbreak of the financial crisis.

2.1. Economic relevance

According to a survey, regulators and authorities of the G-20 have implemented about 60,000 regulatory ordinances.⁹ The costs following the observance of and compliance with the new regulations might exceed U.S.\$ 100 billion in the financial services sector.¹⁰ Approximately 10% to 15% of all working places of financial intermediaries are devoted to functions of governance, risk management, and compliance.¹¹ Overall, banks spend 3% to 5% of their total costs on compliance efforts [IIF (2015), 1].

The increasing complexity of the regulations and the subsequent operational risks in case of non-compliance requires that financial intermediaries invest high amounts for compliance matters. The fines paid by the banks between 2010 and 2014 have grown by the factor 45;¹² hence, avoidance of such consequences might be cheaper than the increased compliance costs. Looking from this perspective, the bank crisis has caused a compliance crisis.

The reason why regtech has become an important issue can be attributed to (i) the post-crisis regulation

¹ U.K. Government Office for Science (Sir Mark Walport, Government Chief Scientific Adviser), 2015, “FinTech futures: the U.K. as a world leader in financial technologies,” March 13, (<http://bit.ly/2yihTDV>), 5 et seq.: “FinTech has the potential to be applied to regulation and compliance to make financial regulation and reporting more transparent, efficient and effective – creating new mechanisms for regulatory technology, Regtech”.

² HM Treasury’s 2015 Budget Report, March 18, 53 (Section 1.204), 98 (Section 2.272).

³ For an overview of publications related to “The birth of Regtech” see Robinson, M., 2016, “The Regtech ecosystem: in depth analysis (part 3 of 3)”, March 10, <http://bit.ly/2xROAqr>.

⁴ See for example Financial Conduct Authority (FCA), 2015, “Call for input: supporting the development and adoption of Regtech,” November, <http://bit.ly/2fE7zLb>, 3; a detailed overview is given by Arner, D. W., J. Barberis, and R. P. Buckley, 2017, “FinTech, Regtech, and the reconceptualization of financial regulation,” *Northwestern Journal of International Law & Business* 37/3, 371, 381 et seq.

⁵ Regtech has the potential for application in a wide range of contexts [Arner et al. (2017), 383].

⁶ Larsen, K. S., and S. Gilani, 2017, “Regtech is the new black – the growth of Regtech demand and investment,” *Journal of Financial Transformation*, 45, 22 et seq.

⁷ Contratto, F., 2016, “Regtech”: Digitale Wende für Aufsicht und Compliance, *Weblaw-Jusletter* 15 August, no. 6.

⁸ Le Brocq, N., 2016, “Regtech – the new paradigm, recognizing the potential for technology to manage regulatory data and improve internal control and compliance,” April 13, <http://bit.ly/2x9fC8R>.

⁹ Simpson, D., 2017, “The collaborative path through the Regtech and FinTech jungles,” April, 25, <http://bit.ly/2pge7p1>; for a detailed overview see Larsen and Gilani (2017), 23–25.

¹⁰ Institute of International Finance (IIF), 2015, “Regtech: exploring solutions for regulatory challenges,” Washington D.C., October 29, <http://bit.ly/2yDgvr1>, 1.

¹¹ BBVA Research, 2016, “Banking outlook,” March 6, <http://bit.ly/2fDaHGw>, 14/15.

¹² Kaminski, P., and K. Robu, 2016, “A best-practice model for bank compliance,” McKinsey & Co. <http://bit.ly/2drDAVB>; see also Larsen and Gilani (2017), 25.

requiring massive additional data disclosure from supervised entities, (ii) the developments in data science allowing the structuring of unstructured data (through artificial intelligence and deep learning), (iii) the economic incentives to minimize rising compliance costs, and (iv) the efforts of regulators to enhance the efficiency of supervisory tools [Arner et al. (2017), 383].

2.2 Scope of application

Regtech has many application fields. The main areas, due to the complex, fragmented, and ever-evolving financial regulatory regimes are:

- The most important area of regtech relates to **reporting** and **recordkeeping**. The availability of regtech products could make regulatory reporting easier and cheaper for market participants, and allow them to meet changing regulatory requirements [Larsen and Gilani (2017), 26/27]. Equally, market entrants might have fewer obstacles to offer their services if well-established regtech products and services are available. The newest technologies, in particular the distributed ledger approaches (DLT, for example blockchain),¹³ may contribute to cost savings for companies. Instead of the traditional delivery of documents to the regulator for its review, DLT is in a position to provide regulators with almost instant access to transaction information. Experience shows that the use of new technologies can lead to significant cost savings by simplifying reporting and recordkeeping processes [Larsen and Gilani (2017), 27].
- Another area for regtech concerns **monitoring** and **surveillance**. Thereby, a starting point lies in the automated processing of data [Contratto (2016), no. 7/8]. The objective of these regulatory activities is to be seen in the identification and reduction of market abuse risks, apart from the notification of suspicious transactions to the relevant regulator [Larsen and Gilani (2017), 27].
- Often, the details of the monitoring activities, as well as the notification requirements, are not clearly stated in the applicable legal framework. Regtech could help to standardize the respective obligations and to provide means for cooperation in a responsive manner.¹⁴

- As far as banks are concerned, the **capital adequacy** and the **liquidity** requirements according to Basel III, CRD IV, Dodd-Frank, and Solvency II require a far-reaching data aggregation of risk information. Regtech appears to be an instrument that could support model simulations and scenario analyses that are typically applicable in the context of stress-tests [Arner et al. (2017), 393 and 395/96].
- An increasingly important number of regulatory provisions in the financial markets require the authentication and/or the identification of persons (customers) in view of compliance with the **KYC** requirements [Larsen and Gilani (2017), 25/26 and 27]; Arner et al. (2017), 391/92 and 395]. Hence, the traditional paper-trail inquiries are increasingly replaced by the use of biometric identification methods (iris identification, scanning of finger prints). Regtech products could become a tool in the harmonization and/or standardization of the respective identification processes [Contratto (2016), no. 18].
- The number of automated applications in the context of **trade surveillance** [for example, with the purpose of securing best execution or to comply with risk parameters in the securities trade (margins)] gain importance in view of MiFID II, EMIR, or SEC Rule 15c3-5 [Arner et al. (2017), 408 and 410, Contratto (2016), no. 17].
- **Cybersecurity** issues have become another important topic in financial regulation. The vulnerability of existing frameworks requires the implementation of security measures [Arner et al. (2017), 400/01, Larsen and Gilani (2017), 27/28]. As outlined below, IT architecture issues will have to play a key role.

¹³Weber, R. H., 2017, "Regulatory environment of the ledger technology," *Computer Law Review International* 18:1, 1-6

¹⁴An obvious condition would be that international standard-setters are becoming more active.



3. REGULATORY ACTIVITIES

As mentioned, regtech has become a buzzword and caused international organizations and regulators to tackle the new developments.

3.1. International standardization organizations

The Financial Stability Board (FSB) and, to some extent, the International Monetary Fund (IMF), looked into regtech matters; the most important document addresses financial stability issues.¹⁵ The Financial Action Task Force (FATF) and the Bank for International Settlements (BIS) have also been quite active;¹⁶ IOSCO has equally issued a detailed report on regtech issues.¹⁷ However, clear recommendations are not yet available.

A valuable contribution of the International Institute of Finance (IIF), a private organization representing the finance industry on the global level, also merits mentioning. IIF published a detailed report describing possible regtech products and services combined with proposals for implementation.¹⁸ Since the IIF is not a public body, however, its activities can only show possible pathways to the regulators.

3.2 U.K.

The most active player in regtech has been the U.K. Financial Conduct Authority (FCA). As mentioned, the FCA coined the term regtech in 2015 and published a “Call for Input,” inviting market participants to describe

their activities and objectives. The success of the consultation was noteworthy in respect of the number of participating enterprises as well as of the involved high-ranking officers.

On July 20, 2016, the FCA published a Feedback Statement summarizing the contents of the submissions.¹⁹ In addition, the FCA formulated four strategic objectives, namely:

- **Efficiency in data exchange:** cloud services or other online platforms should be used by financial intermediaries to increase efficiency at the interface between enterprises and supervisory authorities.
- **Standardized and automated data processing:** regulations should be machine-readable or even interactive (robo Handbook) in order to decrease the costs, particularly in case of ongoing regulatory reforms; the API needs to be designed in a way that systems can interact with each other without data losses or other problems.

¹⁵ Financial Stability Board, 2017, “Financial stability implications from FinTech – supervisory and regulatory issues that merit authorities’ attention,” June 27, <http://bit.ly/2seQzE4>; see also FSB/IMF, 2016, “The financial crisis and information gaps: second phase of the G-20 data gaps initiative. (DGI-2) first progress report,” <http://bit.ly/2lglngL>.

¹⁶ FATF FinTech and Regtech Forum 2017, “Guiding principles (San José principles),” <http://bit.ly/2xRlJ4d>. See also BIZ: FX Global Code, “A set of global principles of good practice in the foreign exchange market,” <http://bit.ly/2tiqunG>.

¹⁷ IOSCO research report on financial technologies (FinTech), February 2017, <http://bit.ly/2kZVzlc>.

¹⁸ Institute of International Finance (IIF), 2016, “Regtech in financial services: technology solutions for compliance and reporting”, Washington DC, March 22, <http://bit.ly/2xROajk>.

¹⁹ Financial Conduct Authority (FCA), 2016, “Feedback statement, call for input on supporting the development and adopters of Regtech, FS16/4”, July 20, <http://bit.ly/2x9z4m9>.

- **Systematic data analysis and data prognosis:** analytics solutions should allow the creation of so-called “data lakes.” As a consequence, the interpretation of extremely wide ranging and unstructured data would become more accurate.
- **Innovative approaches for compliance processes:** the use of DLT for the storage, verification, and encryption of data should be promoted, mainly in the context of the KYC principle and the anti-money laundering (AML) regulations.

In addition, the FCA invites market participants to pay much more attention to regtech products and services and to invest funds into the development of new processes in this field. Furthermore, the creation of machine-readable formats for the “Regulatory Handbook” is proposed [Contratto (2016)].

3.3 Hong Kong

The Hong Kong Monetary Authority (HKMA) published a report about innovative finance technologies in February 2016.²⁰ The main focus of this report was defining the conditions for Hong Kong to become a “fintech hub,” however, the advantages of the use of regtech are also mentioned.²¹ In particular, market participants are invited to more thoroughly realize the potential of regtech by cooperating with technology enterprises.

3.4 Singapore

The Monetary Authority of Singapore (MAS) organized a “fintech festival” in November 2016, which also tackled regtech issues. In the meantime, the fintech Guidelines of the MAS are published.²²

3.5. Australia

The Australian Security and Investment Authority (ASIC) established a regtech team in June 2016.²³ The task of this team consists of cooperating with other organizations related to the development of new regtech software.

3.6 Switzerland

In March 2016, a member of the House of Representatives filed a motion under the title “Improvement of the Digitization in the Regulation (regtech)”;²⁴ therein, the Federal Council is asked to analyze the possibilities for broadening the scope of application of regtech initiatives.²⁴ The Federal Council has agreed to consider the related questions within the realization of the parliamentary motion no. 15.4086 “Für einen wettbewerbsfähigen Finanzplatz im Bereich neuer Finanztechnologien” (competitive finance market in the

area of financial technologies). Additionally, a report regarding the framework requirements for the digitization of the economy has been published.²⁵

On February 1st, 2017, the Federal Council initiated the consultation on amendments to the Banking Act (BankA) and the Banking Ordinance (BankO) in the fintech area. The proposed amendments should ensure that barriers to the market entry of fintech firms are reduced by separately regulating the firms that provide services outside the normal banking business according to their risk potential.²⁶ The three deregulation elements are: (i) the holding period for the acceptance of funds for settlement purposes (Art. 5 para. 3 lit. c of the BankO) is extended (60 instead 7 days); (ii) an innovation area (sandbox) is introduced in which the acceptance of public funds up to CHF 1 million is not classified as operating a banking business; as a consequence, this activity is exempted from authorization; and (iii) simplified authorization and operating requirements compared to the current banking license apply in the areas of accounting, auditing, and deposit protection for companies that accept public funds of up to a maximum of CHF 100 million but do not operate in the lending business.

In July 2017, the Federal Council adopted the amendment of the Banking Ordinance, which entered into force on August 1st, 2017.²⁷ The other amendment that concerns the Banking Act was already addressed by the parliament in the context of the deliberations on the Financial Services Act (FinSA) and the Financial Institutions Act (FinIA). The new authorization category will be created in the BankA for companies that accept public funds of up to a maximum of CHF 100 million but do not invest funds or pay interest on funds. For this new fintech category, simplified authorization and operating requirements in the areas of accounting, auditing, and deposit protection will be applicable.

²⁰ Hong Kong Monetary Authority (HKMA), 2016, “Report of the Steering Group on Financial Technologies,” February 26, <http://bit.ly/1pmsWmR>.

²¹ “Moreover, regulators themselves may also benefit from FinTech. For instance, regulatory authorities in most financial centers around the world are increasing the deployment of technology to complement existing regulatory processes and facilitate more effective risk identification, risk weighting, surveillance, and data analytics, commonly referred to as “Regtech”. Regtech results in opportunities for the FinTech sector to provide data standardization, collection, visualization, and analytics solutions to both regulators and regulates.” HKMA (2016), 20.

²² Monetary Authority of Singapore (MAS), 2016, “Regulatory sandbox guidelines,” November, <http://bit.ly/2gDPTAm>.

²³ Australian Securities and Investment Commission, 2017, “Response to feedback on REP 523 ASIC’s Innovation Hub and our approach to regulatory technology,” September, <http://bit.ly/2ytWW4I>.

²⁴ <http://bit.ly/2xU2Pva>, 20.

²⁵ Bericht über die zentralen Rahmenbedingungen für die digitale Wirtschaft, January 11, 2017, <http://bit.ly/2jDjSeE>.

²⁶ See Federal Council, media release, February 1, 2017, <http://bit.ly/2wsye49>.

²⁷ See Federal Council, media release, July 5, 2017, <http://bit.ly/2xJHqVQ>.

Looking from a general regtech perspective, several possibilities to exchange information in a digital way have already been introduced within the financial services sector [Contratto (2016), no. 34]:

- License procedures for collective investment schemes.
- Financial reporting for collective investment schemes.
- Delivery of data by banks to the Swiss National Bank.
- Self-declarations in the context of anti-money laundering legislation.
- Notification obligations of securities' offerors to the SIX Swiss Exchange.
- SIX Swiss Exchange approval for the trading of capital market products.

Apart from the mentioned examples, the automated transaction surveillance and the name-matching systems are accepted digital measures helping to comply with regulatory submission tasks.

4. LEGAL CHALLENGES TO REGTECH

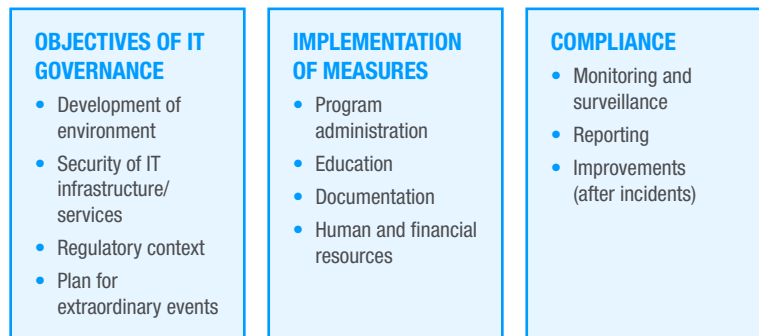
The implementation of regtech products and services creates a number of legal challenges, which must be met in order to achieve a successful implementation.

4.1. System resilience and risk management

System resilience is a key challenge in the regtech environment. Major emphasis must be placed on the areas of data protection and cyber risks, having consequences for IT architecture, the design of IT systems, and the governance/compliance in this field.²⁸ The implementation of Standard 239 of the Basel Committee for Banking Supervision (BCBS) related to the principles for effective risk data accretion and risk reporting (January 2015) has demonstrated the respective difficulties [Contratto (2016), no. 39].

Looking from the perspective of the regulators, a failure to develop the IT capabilities enabling the use of the data provided in response to reporting requirements would severally impact the achievement of the policy objectives of such reporting requirements [Arner et al. (2017), 399]. In other words, the regulators themselves should provide an example of a forward-looking implementation of IT-enabled systems. Reporting must be matched with analytical tools, as good practice has already shown in the securities markets.

As far as business entities are concerned, system stability, as well as system resilience, require the implementation of risk management and compliance measures. The confidentiality, integrity, and availability of data must be guaranteed not only for business operations but also for the fulfillment of the regtech conditions.²⁹ The internal risk management manual has to describe the implementation of digital transactions and the appropriate procedures for the protection of data (authentication, identification). A respective IT governance framework could be designed as follows:³⁰



Cyber risk prevention has been another topic for financial intermediaries for a number of years. With the development and implementation of regtech, the challenges will increase further and the regulatory risk management concepts will need to be adapted to the new digital applications [Larsen and Gilani (2017), 27/28].

4.2 Coordination and cooperation requirements

The supervisory authorities of the U.K. (Financial Conduct Authority, Payment Systems Regulator, Prudential Regulation Authority, Bank of England) are advised by way of the so-called Productivity Plan 2015 of the British Government to closely cooperate in respect of the development of regtech.³¹ Even budgetary measures are introduced or proposed for implementation.

²⁸ See also Huber, R., 2017, "Kann Regtech die Finanzindustrie aus der regulatorischen Krise befreien?" Weblaw Jusletter May 18, no. 8.

²⁹ Weber, R. H., 2017, "Systemstabilität: neue Herausforderungen durch die Digitalisierung der Geschäftsmodelle," in Festschrift für Hans Caspar von der Crone, Zurich, 405, 410.

³⁰ Weber, R. H., 2017, "IT-governance: unverzichtbar für jedes Unternehmen, schulthes manager handbuch 2017," Zurich, 37, 38/9.

³¹ HM Treasury, Budget 2015 (http://bit.ly/2x8T8d4), 53: "[... the FCA, working with the PRA, will also identify ways to support the adoption of new technologies to facilitate the delivery of regulatory requirements – so called Regtech]."



Such forms of coordination would equally be reasonable for other national regulators and even for cross-border regulatory activities [Contratto (2016), no. 37]. In the medium-term, it should also be considered to establish certification tools for regtech applications and regtech providers (possibly similar than in data protection law); thereby, quality standards are likely to become higher.

Improved coordination and cooperation³² can equally be achieved through a regular exchange of information among the involved interest groups and commercial entities; not only banks but also multinational enterprises [Contratto (2016), no. 38]. Since businesses often act across multiple markets, IT-based systems must be implemented that not only cover specific requirements of national law but also of global standards. Obviously, competition law sets some limits to the information exchange; however, networking in form of roundtables, discussion fora, and conferences should not be critical.

5. OUTLOOK

In view of the digitization of many parts of the economy, regtech will certainly gain importance and constitute a growing challenge for private organizations as well as for regulators. As far as the businesses are concerned, the new technological environment requires the implementation of better risk management and IT compliance systems; attention must be diverted from traditional regulatory topics to the needs of a new technological environment. The developments in distributed ledger technologies (blockchain) as used in securities markets are a good example.

Most likely, the change will even be more “dramatic” for the regulators and the supervisory authorities. A paradigm shift is expected to occur in financial regulation. Among others, the well-known principle of KYC might be complemented by a new principle of KYD.³³ This new perspective leads to more data-driven regulations and compliance models. An interesting example is the so-called “India Stack,” a joint private-public project encompassing four level for a fintech transformation.

³² Huber (2017), no. 7; see also Contratto, F., 2017, „Technologie und Finanzmarktregulierung: Narrative von Interdependenz und Co-Evolution,” in Festschrift für Hans Caspar von der Crone, Zurich, 421, 430/1.

³³ Arner, D. W., J. Barberis, and R. P. Buckley, 2016, “The emergence of Regtech 2.0: from know your customer to know your data,” *Journal of Financial Transformation* 44, 79 et seq.

Elements of such a new regulatory approach, which should be considered in depth, could encompass the following phenomena [Arner et al. (2017), 405/06]:

- Regulatory policy modelling: agent-based modelling as an emerging technique.
- Reporting standards: common compliance standards across multiple jurisdictions.
- Systemic risk tools: mathematical tools developed in cooperation with central banks.
- Harmonization: integration of monitoring systems beyond varied regulatory demands.
- Uniform compliance tools: development of a suite of open source compliance tools.
- Collaboration and selected data sharing: improved cooperation of regulators through transformative processes.

The challenges evolve rapidly in the technological context. Looking forward, therefore, regtech should be built into a reconceptualized (financial) regulatory regime.³⁴ The paradigm shift based on a holistic approach will have to put more emphasis on the nexus of data and digital identity. Data needs to be gathered globally on a real-time basis and processed in a coherent way in order to meet the cross-border needs of businesses and regulators.

³⁴ Arner et al. (2017), 376 and 414. See also Baxter, L. G., 2016, "Adaptive financial regulation and Regtech: a concept article on realistic protection for victims of bank failures," *Duke Law Journal* 66, 567 et seq.

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