REPORT



RegTech

the importance of regulatory innovations for the financial sector and the state

2017

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foreword

Dear Readers



The report "RegTech: the significance of regulatory innovations for the financial sector and the state" is aimed not only at defining and understanding the notion of RegTech, but also placing it in a broader market and technological context. It is vital to understand the needs that RegTech responds to, and how this term relates to the notion of FinTech, which has spread broadly in recent years. The report not only focuses on an analysis of regulatory technologies, the needs of the market, and the benefits financial institutions can gain from RegTech solutions, but also stresses the role of the state in this process. To this end, the report includes an overview of approaches to RegTech taken by regulatory and supervisory authorities in selected countries. Moreover, through a set of recommendations and strategic scenarios, the authors of the report present proposals for Polish lawmakers and national regulators with respect to the directions for the growth of RegTech for Poland.

Although RegTech has applications across numerous regulated sectors of the economy, such as environmental protection, transport, logistics, and telecommunications, this report is limited to regulatory technology in the financial services sector.

The need to apply RegTech solutions is called for not only by market participants, but also by European Union bodies. In a resolution of 17 May 2017¹, the European Parliament stressed that RegTech can lead to considerable benefits for financial institutions and regulators by allowing new technologies to be used to address regulatory and compliance requirements more transparently and efficiently. EU bodies, particularly the European Commission, should therefore take a proactive approach to RegTech. Patrick Armstrong of the European Securities and Markets Authority also points out² that RegTech is an important tool supporting the process of monitoring the financial sector and improves the efficiency of firms on the market. RegTech can change the way financial institutions perceive regulations and also impact oversight instruments. RegTech can also raise the effectiveness of monitoring and increase financial institutions' capacity to comply with regulatory requirements in a financially feasible manner.

European Parliament resolution of 17 May 2017 on FinTech: the influence of technology on the future of the financial sector (2016/2243(INI))

> RegTech: A Practical Gui nessing the Benefits of t mpliance Function, Patr

Compliance Function, Patrick Armstrong, Senior Risk Analysis Officer, Innovation and Products Team This report was created thanks to the joint efforts of the FinTech Poland Foundation and the Centre for New Technology Law at the Faculty of Law and Administration at the University of Warsaw, in cooperation with knowledge partners Accenture, Bird & Bird, and PwC.

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Introduction

Cognitive algorithms, big data and advanced analytics already allow financial institutions to take critical decisions practically in real time. The level of advancement of IT at banks makes them more into tech firms, contributing to their perception as highly efficient organizations. Financial institutions are also subject to complex regulatory and oversight regimes, a positive consequence of which is the high level of safety of regulated institutions and the entire financial system. However, a side effect is the need to incur high compliance costs, which often significantly hurt the efficiency of these institutions. Can safety and a high level of efficiency be reconciled?

One of the effects of the global financial crisis was an increase in oversight regulations by 492% (2008-2015). In 2011–2014 Bank of America increased employment in its audit and compliance function by nearly half. In 2014 Citi employed 30,000 people in its compliance division (13% of the total employment in the group), a 33% increase compared with 2011 against overall declining employment. A year earlier, JP Morgan Chase

increased employment in the risk management area by 30% while directing an additional \$4bn to risk and compliance staffing. Meanwhile, fines imposed on the largest banks in 2009–2014 grew 45-fold.³ In 2014 Deutsche Bank spent an additional €1.3bn on new regulatory requirements, and UBS spent \$946m. Deloitte estimates that the European insurance industry spent \$5.7–6.6bn on implementation of new regulations, 58% of that connected to Solvency II.

The average regulatory burden on banks accounts for a fifth of their operating budget. The dramatically rising costs of reporting and compliance drag down the efficiency of the financial services sector. This is also a source of frustration for managers. On the other hand, this situation creates a real need that can be met by firms specializing in regulatory technologies – RegTech.

In the reality of the digital transformation of public administration and the entire economy, where machines communicate with one another in multiple directions, protocols are becoming the natural language of communications. Can relations between banks and regulators also reach a higher, more productive and automated level?

3 Source: McKinsey http://www.mckinsey.com/ business-functions/risk/ our-insights/a-best-practicemodel-for-bank-compliance Application programming interface (API) and machine protocols are the future of reporting and compliance. Building regulations into technologies at the stage of their creation (RegTech) will translate into faster growth in financial innovation and more stable growth in coherent national transactional infrastructures, which ill play a key role in Industry 4.0. There is no time like the present to begin preparing. 2.

RegTech - meaning and definitions

The global financial crisis in 2008–2009 sparked an unprecedented response from states all over the world, resulting in the enactment by lawmakers and international and national regulators and watchdogs of new regulations impacting virtually every aspect of the operations of the financial sector: at the macro level, affecting the activity of entire markets, including the institutional and technological infrastructure essential to the functioning of the financial system, and on a micro scale, applying to the activity of specific financial institutions. The quantity of these regulations is sometimes referred to as a "regulatory tsunami".

The new regulations significantly increased costs for the financial sector connected with requirements for compliance, reporting, and supervision. Given their dimensions, the costs of satisfying the new requirements can impact banks' ability to satisfy the financial needs of the real economy.

Consequently, many financial-sector entities have invested significant funds, including through increasing employment in compliance units, in order to achieve compliance with the new regulations. But banks sometimes maintain regulatory compliance processes in a manual form that is not always capable of keeping pace with the requirements imposed by supervisory authorities. These processes should undergo digitization and automation using new data-processing technologies: business intelligence, artificial intelligence and predictive analytics.

The market took note of this need and responded to it by directing the latest technologies to regulatory needs – therefore giving rise to RegTech. RegTech solutions can support the collection, interpretation and reporting of data in order to meet regulatory needs with the help of such technologies as big data, advanced analytics, automation (roboting) of processes, machine learning and data visualization.

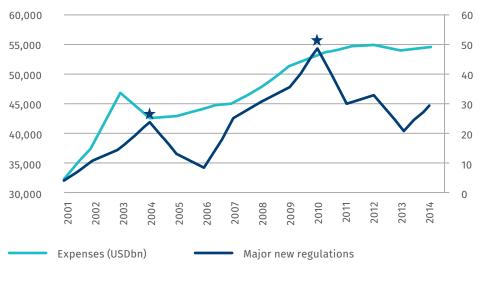


Diagram illustrating the pace of growth in compliance-related expenses on the US market

Figures on expenses from the joint report "Regulators budget", major new regulations from *Red Tape Rising* and the US Government Accountability Office Federal Rules Database. Source: Daily Signal. Despite significant expenditures connected with the implementation of new regulations, sanctions for incomplete adjustment have been unavoidable. In the US alone, financial institutions have been hit by fines of over \$160bn since the time of the global economic crisis in 2008. Of course the crisis itself contributed to the significant stiffening of penalties and more frequent controls. Before the crisis, the scale of penalties for non-compliance or incomplete compliance with regulations was just a fraction of what it would be.

It is estimated that banks currently spend over \$70bn annually on achieving compliance, presenting a huge opportunity for RegTech solutions because they can offer great value in this field. By supplying specialized services and products, these costs can be reduced while raising quality and productivity.

Cost aside, RegTech offers one other advantage: the ability to quickly adapt to the evolving regulatory environment. Traditional solutions had a problem with this, mainly due to technology: it is often difficult and costly to adjust older IT systems at large institutions to new regulations. RegTech solutions are designed on the assumption that regulations will change, with tools that can easily be adjusted to changing requirements. They also usually offer much more precise data for regulators.

From the perspective of regulators as well, RegTech solutions offer distinct advantages. An increased level of precision and availability of information – in some solutions even in real time – should make it easier for them to monitor systemic risk.

Two approaches to RegTech should be indicated:

Pragmatic – use of available innovative technologies for fulfilling regulatory and reporting requirements, understood as makeshift use of existing tech solutions, for example for creating the required reports and summaries, automated completion of forms, analysis of collected data, verification of client data, and risk analysis, accompanied by a rather passive approach by the regulator.

Proactive – architecture of regulations and compliance, i.e. a set of standards enabling the fulfilment of regulatory requirements by the regulated entities, respecting the call for optimal fulfilment of regulatory requirements and ensuring compliance as early as the stage of creation of the law. The aim is to ensure efficient transfer of data between the regulated entity and the watchdog, followed by productive analysis of the data. In effect, the regulator will exploit innovative solutions enabling exercise of supervision through automated gathering of the required data from the regulated institutions. At the same time, the regulated entities can apply the philosophy of "compliance by design" involving building compliance elements into business practices and processes key for the organization. This, in turn, enables a significant reduction in the costs of compliance and increased effectiveness of risk management.

This model requires an active role of regulatory and supervisory authorities as facilitators of initiatives of this type.



Alan Meaney, CEO of the reconciliation platform FundRecs: As in the case of the FinTech market, RegTech is another example of a sector undergoing dynamic changes in connection with the development of technology. Financial watchdogs have used technology for the last 20 years to varying degrees. RegTech is a response to the growing gap between services performed using software and without.

RegTech should therefore be, on the one hand, a tool for cutting costs generated by financial institutions in achieving compliance, and on the other hand should bridge the technology gap in the area of efficient communications between watchdogs and regulated entities, as well as a method for raising the watchdog's own efficiency.

RegTech and FinTech

The foregoing position is reflected in the connection between FinTech and RegTech. Support by the state and business for newly developed financial technologies has led to the creation of many innovative services while at the same time steadily increasing the regulatory burdens connected with the watchdogs' technological stagnation.

Effective oversight using conventional paper-based tools may exert an anti-innovative effect, holding back the growth potential of the economy in a digital reality.

Focused on their statutory duty to ensure the safety and stability of financial markets, watchdogs often fail to keep pace with technology as it picks up speed every day. One possible solution to this problem is optimization of reporting and compliance requirements. In practice this can prove very difficult, as witnessed by the negative experiences on financial markets around

the world, including Poland (e.g. Amber Gold). With the current complexity of financial markets, it is too risky to loosen regulatory constraints. So how to effectively regulate and exercise oversight while at the same time not strangling new tech phenomena just because they do not fit the existing regulatory framework?

The challenge is to bridge the tech gap between more widely available new technologies and the tools in the hands of regulators. A hope for resolving this problem is RegTech, which on the other hand enables efficient transfer of data from regulated entities to the watchdog and on the other hand offers a streamlined performance of oversight duties, e.g. through productive analytics and quick identification of risky situations inside financial institutions.

Thus financial RegTech complements FinTech and is essential for the growth of financial technologies.

There is a peculiar dichotomy in the tech arena, and consequently the legal arena, in implementation of RegTech solutions. In the pragmatic approach to RegTech, fulfilment of regulatory and compliance obligations will be realized primarily using a virtual environment (cloud computing) made available to regulated entities by the regulator or (in certain instances) vice versa. This solution is particularly realistic "here and now" given the increasingly common use of the cloud for financial services across most jurisdictions, even notwithstanding shortcomings in the relevant legal regulations (gaps that should be filled rather in a matter of months than years).

In the proactive approach to RegTech, tech solutions are also presented based on an architecture of distributed ledger technology (i.e. using blockchain/ DLT). Given the lack of relevant legal regulations, such proposals are now practically impossible to carry out. But the potential benefits of applying them can already be pointed out: the automation and security of procedures for processing and forwarding of data which this technology offers. Thanks to its properties, and self-regulating mechanisms built into the protocols, blockchain/DLT potentially presents a good solution for ensuring high quality of the data in the chain, high accessibility to the data, and a number of other functions such as combating money laundering and financing of terrorism (AML) and customer identification (KYC). 3.

RegTech - market prospects

The costs of regulation and supervision are a growing burden for the financial sector. In an environment of low interest rates, snowballing regulatory requirements (quantitatively and qualitatively), and strong competition on financial markets (national and international), an analysis of the possibilities for reducing these costs is particularly urgent. To understand the scale of the burdens and identify the needs of Polish banks and the changes they are expected to face, the consulting firm PwC, a partner on this report, prepared a qualitative analysis at the request of selected banks in Poland. The research sample reflects the domestic structure of banks, including entities from the top 10 or 20 banks as well as cooperative banks.

The results of the study show that costs of regulation and supervision currently soak up from 7% to as much as 23% of the total budget for tech implementations and the costs of central functions of Polish banks. Although the main aim of the analysis was to identify areas for improvement, the general picture of cooperation with regulators which emerged is positive. The banks value the work of oversight authorities and stress their focus on substance. Their reservations mainly involved process and productivity aspects. First and foremost the banks expect:

Reduction in regulatory costs through better organization of oversight processes, including reporting and supervision.

Efforts at better coordination of the work within the supervisory authorities, and synergies in their activities, e.g. to avoid duplication of the burdens imposed on banks, and greater use of modern technologies – both in the work of the watchdog and in permitting the use of new solutions (in regulatory and supervisory practice) for compliance with oversight requirements.

Łukasz Bystrzyński Partner, Banking and Insurance, Business Consulting, PwC:

The cost of maintaining compliance with regulations is not just the costs of immediately dedicated units at the bank (known as compliance cost), but first and foremost the necessary infrastructure and involvement of management and staff of the entire organization (cost to comply). This is a growing problem all banks in the world are struggling with. Application of the latest technologies, growth of common initiatives and platforms (utilities, e.g. KYC Utility) within the sector or country, or outsourcing, are just a few examples of growing global trends aimed at cutting costs while maintaining the required standards expected by regulators. Recent supervisory asset quality reviews (AQR) and stress tests at banks in the EU show that the use of modern IT tools, including big data/data analytics techniques by watchdogs and banks preparing data for submission to them have significantly streamlined the work and raised the objectivity and precision of evaluations. That is how it is going, but it is still early days. Main areas for improvement: optimization of processes and regulations and exploitation of technology

I. Optimization of processes and regulations standing in the way of efficiency

Aimlessness and chaos in reporting

The point of departure for process improvements is always a good understanding of the purpose of the processes to be optimized. From the perspective of evaluating the effectiveness of oversight processes, it is telling that most banks gave a negative answer when asked: **Are the oversight models currently followed by watchdogs effective at achieving their aims, and are the costs incurred by the watchdog and the banks justified by the results?**

Based on the banks' comments, the justification for this negative evaluation is primarily the following factors: the ineffective and overly complicated Supervisory Review and Evaluation Process (SREP) (some of the banks indicated that SREP is essentially a source of historical data, e.g. a SREP evaluation based on the status in 2014 was completed in February 2016); the large number of requirements, questionnaires and one-off questions, unplanned and sometimes chaotic (unscheduled events often requiring the banks to make a rapid allocation of additional resources, overtime, etc.); overlapping areas of oversight and reporting activity for specific authorities, such as the Financial Supervision Authority (KNF) and the General Inspector of Financial Information (GIIF) in AML, and the KNF, the Office of Competition and Consumer Protection (UOKiK) and the Financial Ombudsman in the protection of financial consumers, the KNF and the Bank Guarantee Fund (BFG), etc. (as a potential solution for this problem some banks suggest that all such competencies be absorbed by one of the authorities, e.g. the KNF).

As the banks indicate, ineffectiveness in the use of information and actions undertaken is particularly noticeable in the case of GIIF, where *clearly there is a lack of time to analyze the data (scale is too large) and as a result not many of the cases are continued by the prosecutor's office* (opinion of one of the participants in the analysis).

The banks also assert reservations about the lack of coordination of actions or a consistent approach by different watchdogs, as well as inconsistency within each watchdog organization (inspection and analytical oversight at the KNF) and the lack of effective flow of information between watchdogs. *Thus there is a need for greater coordination of supervisory activities, perhaps combining watchdog institutions (the KNF, the National Bank of Poland, and BFG functioning as a resolution authority).*

Simplification of the scope and quantity of reporting information and other required data

The second predominant theme in the banks' comments is the great burden in the sense of the volume of processed documents and data. As the banks indicate, this problem has two sources:

- 1. First, the watchdog generally demands too many documents. The banks surveyed characterized the watchdog as demanding:
 - a. Detailed analysis, documentation and reporting of nearly every activity.
 - b. Printout in a hard copy of every communication with the customer.
 - c. Delivery of bank statements, confirmations and approvals of clauses forevery account.
- 2. Second, in many instances banks must duplicate and submit the same data multiple times. As a mid-sized bank mentioned: Each time during SREP or a comprehensive or issue-based inspection, the regulated entities provide numerous data and internal documents, constituting a major burden for the regulated entities, and during the verification or inspection by the KNF the regulated entities often have to provide the same data and clarifications multiple times. This points to low or non-existent effectiveness of the initial verification of the set of documents. Meanwhile, evolution in the SREP methodology is indicated as a positive example of changes in the supervisory approach and seeking more optimal solutions. Among other things, the banks praise the change from the tabular version in Excel (several thousand lines to complete) to the current version, limited in number and topics and enabling submission of qualitative comments on the numbers. Nonetheless, the banks agree that this change has not solved the problem of overly broad SREP, particularly burdensome for small banks.

In response to this problem, the banks primarily indicate the need to create clear and systematic guidelines with respect to key information for the oversight process, weighing by watchdogs of the importance of the oversight requirements (key data and additional data), an indication of the weight (importance) of the oversight findings, and more careful tailoring of the oversight requirements (often created for the biggest international banks) to suit smaller banks with limited risk and operating scale. In this context the banks also stress the need for more frequent contacts with the watchdog and discussions on this topic. As one of the surveyed entities said: **Banks are hungry for contact with the regulator**. A positive example of such contacts is the KNF training sessions in the CEDUR program, but as a participant pointed out: **They are offered too infrequently and in not very accessible locations**.

Need for proportionality

Small, medium-sized and cooperative banks stress the absence of a rule of proportionality in the flood of regulations adopted at EU level, and in oversight activities. The excessive burden particularly on small and medium-sized entities is especially evident in the context of oversight and reporting requirements, forms, SREP, the numerous guidelines included in the KNF recommendations, and often excessive legal regulations. One of the cooperative banks surveyed commented, *SREP is a very wide-ranging instrument, too highly standardized in assumptions and construction, not reflecting the principle of proportionality.* As the same bank also stressed: *The regulations may lead to a situation where cooperative banks are excellently regulated but have no room left to do business.* It should be mentioned here that the declared share of regulatory costs in total IT and operating costs at cooperative banks exceeds 20%. One of the cooperative banks surveyed indicated an urgent need to change the model for the supervision of this segment, including a need to give up entirely the use of SREP forms in the case of small banks.

Smaller specialized banks also took a similar view of SREP, indicating as well a need for clear definition and application of the principle of proportionality by banking supervisors: *The very aim of oversight activities may not be ideal from the industry's viewpoint. Nonetheless, it is hard to disagree. But what hurts is the manner in which it is carried out, particularly the failure to apply the principle of proportionality.*

The theme of proportionality is also present in the comments by banks in the FinTech context. Interestingly, however, there is no consensus in this area. Although the predominant attitude in the comments supports a clear reduction in regulatory rigour for all small players, including FinTech providers, some banks claim the FinTech sector should be subject to the exact same rules as banks: *This is a condition for presence on a regulated market and all players should be subject to it.* Concerns are expressed that awarding special rights or privileges to FinTech firms, taking a more lenient approach without allowing the same "relief" to other entities, could have a negative impact on banks, conditions of competition and customers directly, if state-of-the-art FinTech solutions are not accompanied by appropriate investments in IT security so strongly enforced against banks (e.g. KNF Recommendation D). Banks have doubts whether small FinTech players are investing adequately in cybersecurity, an area where banks incur rising costs.



Krzysztof Marszałek

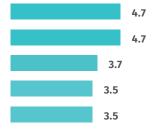
Manager, Financial Sector Advisory Team, PwC:

Proportionality is a challenge for the EU and for Poland, where strict supervisory requirements applied to the largest banks are not adjusted and calibrated for smaller entities. Although the European Commission's proposals in the draft CRR 2.0 and CRD V regulations are a step in the right direction when it comes to reducing burdens for smaller institutions, they are disappointing and do not go nearly far enough. Therefore the basic question arises whether in the banking ecosystem, as a result of postcrisis over-regulation, small and medium-sized institutions will survive, or we will see greater concentration, leaving the market only to those "too big to fail", which would be a dangerous and unintended result of post-crisis reforms in the EU. It is time to reflect on the type of banking system we are heading toward and what model of banking services will be forced by the flood of increased regulatory burdens on banks and the continuing limitations on the application of new technologies and processes.

Key areas for improvement

The banks surveyed displayed great unanimity on the direction of needed improvements in processes and regulations. The categories of "Need for better coordination in exchange of data between oversight authorities" and "Need for greater consistency in approach to the same topics by oversight authorities" were indicated as the key areas for improvement. The banks selected key areas of improvement among 5 proposals, rating their potential to improve the activity of watchdogs on a scale of 1–5 (results in the table below).

Would the introduction of these legal solutions or processes lead to better functioning of supervision? (average response): 0 – not at all 5 – very much From PwC study Better coordination by authorities in exchange of data Consistent approach of authorities to the same topics Initiatives outside the banking sector, e.g. digital ID Greater possibilities of outsourcing mass activities More efficient, more automated obtaining of data



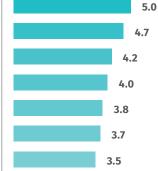
II. Exploiting (modern) technologies to save time and operating costs

Areas with the greatest potential for new technological solutions

Banks indicate as the most critical area for improvements in cooperation with regulators *integration of data, methods and analysis between authorities*. Second is the potential inherent in exploitation of new technologies like *artificial intelligence or robotics*. Other categories that should be mentioned include *automated retrieval of data from banks*, which would bring manual exchange of data to an end (results presented in table below).

Would the introduction of these technologies at oversight authorities improve their functioning? (average response): 0 – not at all 5 – very much From PwC study

Integration of data, methods, analysis between authorities AI, robots, for simple risk assessments (customers, transactions) Automated retrieval of data from banks Regulators' support for central shared services Better processing of data (BI tools) Automatic download of data from external sources Automated, robot supervision of small institutions



How can the regulator help?

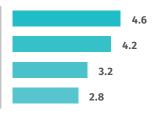
In the business context, the banks indicate the main fields where they expect support and particular attention from regulators:

- 1. Better exploitation of existing information platforms and online data for analysis of risk (as the banks surveyed claim, they offer greater discriminating power than standard models).
- 2. Support for biometric solutions (customer identification).
- 3. Inspiration for legal solutions enabling more effective and cost-efficient compliance with regulatory requirements (concerning such issues as outsourcing and automation of processes).

The banks also stress the regulator's essential role in protecting banks against excessive cost burdens, including fiscal burdens, hindering investment in stateof-the-art IT solutions. In this sense, the regulator is expected to help maintain the appropriate legislative environment. Banks point to EU regulations as the main barrier to innovation and one of the main sources of growing regulatory requirements more and more burdensome to banks. After that, they stress the need for lighter regulatory rigours for small entities, in line with the principle of proportionality. Nonetheless, equal conditions of competition should be maintained between traditional banks and FinTech firms (results presented in table below). They single out prudential requirements as costly (including COREP, FINREP, regulatory questionnaires, costs of implementing recommendations), while the GDPR generates significant concerns.

Are these regulations a barrier to innovation? (average response): 0 – not at all 5 – very much From PwC study

EU regulations Lack of regulations permitting lighter regulatory rigours Regulations/restrictions on outsourcing Bank secrecy regulations



Łukasz Bystrzyński Partner, Leader of the Financial Sector Advisory Team, PwC:

Pointing to EU regulations as the main barrier to innovation is justified by the related costs. As the banks themselves point out, the share of regulatory expenses in relation to the budget for IT implementation and central functions can be as high as 20% for some banks. It must be stressed that this is not all the costs. This amount should be supplemented by the opportunity cost of frozen projects. In this context, while under current reporting there is no standard for the most costly regulation, most banks agree that from 2018 the main cost centre will be the GDPR. Moreover, MiFID2, PSD2, Basel, and GDPR do not mean just regulatory changes, but primarily the transformation of business models. Considering that banks in Poland already feel like, and are, FinTech companies due to the "testing ground" of rapid technology growth and adoption by consumers in Poland, the effort of implementing such a tsunami of EU regulations is certainly a big challenge for banks. Of course, the final benefit for customers is the most important.





RegTech - legal and regulatory aspects

Introduction

Over the past 5 years financial institutions in the European Union have become subject to a dozen or more new regulations generating significant compliance burdens, including such regimes as:

Alternative Investment Fund Managers Directive

– establishing the legal framework for licensing and supervision of managers of various types of alternative investment funds (AIFM), including hedge funds and private equity funds.

Capital Requirements Directive IV

- regulating issues such as capital requirements for banks and investment firms.

General Data Protection Regulation

- which will govern the protection of personal data and rules for processing personal data.

Directive on Undertakings for Collective Investment in Transferable Securities

– establishing uniform rules for investment funds enabling cross-border offering of funds regulated at EU level and laying down the main rules governing UCITS in the EU.

European Market Infrastructure Regulation

– laying down rules governing contracts involving derivatives traded outside the regulated market, central counterparties, and repositories for transactions in line with the G20 obligations undertaken in Pittsburgh in September 2009. The aim of the regulation is to reduce systemic risks, increase transparency on the market for unlisted derivatives, and maintain financial stability.

4th Anti-Money Laundering Directive

– designed to prevent exploitation of the financial system for money laundering and financing terrorism, strengthening EU provisions and ensuring their consistency with global standards set forth in international guidelines adopted by the Financial Action Task Force on money laundering (FATF).

Market Abuse Directive II

- establishing criminal sanctions for the most serious intentional market abuses.

Market in Financial Instruments Directive II

– aimed at ensuring greater efficiency and transparency of financial markets in the EU. It also creates a new legal framework to better regulate commercial activity on financial markets and reinforce protection of investors.

Payment Services Directive II

- providing a legal basis for further growth in the integrated internal market for electronic payments in the EU. The aim of the directive is to open payment markets to new players, which should increase competitiveness and provide consumers with choice and better prices. The directive also provides the essential legal platform for the Single Euro Payments Area (SEPA).

Solvency II

- (Directive on the taking-up and pursuit of the business of Insurance and Reinsurance), regulating minimum capital requirements for insurers and establishing rules for management and supervision of insurers.

The new regulations significantly raise the challenges and costs for the financial sector connected with compliance, reporting and oversight requirements. Because of their scale, the costs of satisfying the new requirements can negatively impact the capacity of banks and other financial institutions to satisfy the financial needs of the real economy. The necessity to regulate the activity of these entities is clearly beyond dispute, as it is aimed at ensuring the safety of customers' funds and maintaining the financial stability of regulated institutions and the entire market. But the number of regulatory obligations has grown disproportionately, and performing them is becoming more and more burdensome due to the extensive executive regulations.

Reporting, notification and record-keeping obligations resting on financial institutions

A comprehensive treatment of all regulations which financial institutions are subject to would greatly exceed the scope of this report. Nonetheless, it is worth at least attempting a list containing the legal basis and a brief description of the regulatory duties to depict their abundance and point to the areas where RegTech solutions could benefit both public authorities and regulated entities.

	Banking Law
Art. 6c(2)–(3)	Notification and record-keeping obligations connected with outsourcing
Art. 9cc	Obligation to document certain systems and processes indicated in the Capital Requirements Regulation
Art. 22	Notification of membership and changes in the bank's supervisory board
Art. 22a	Notification of membership and changes in the bank's management board
Art. 22c	Submission of minutes from general meeting to the KNF
Art. 25	Notification of intended acquisition or taking up of certain share rights in a bank
Art. 25p	Notification of the intended sale of certain stakes of shares or share rights
Art. 48c	Duty to notify the KNF of intention to establish a branch
Art. 48f	Duty to notify the KNF of intention to conduct cross-border activity
Art. 56a	Notification of the possibility for an account holder to issue a disposal of a contribution in the event of death
Art. 79b	Duty to notify the KNF of issuance of credit, loan, bank guarantee or surety to persons holding certain positions
Art. 89	Duty to inform the KNF of an intended program to issue securities
Art. 92ba	Duty to provide certain information about bank accounts for certain entities
Art. 92bb	Duty for banks to maintain central information about accounts
Art. 105	Duty to provide information covered by banking secrecy
Art. 106a	Informing the prosecutor of justified suspicions of use of a bank to conceal certain criminal acts
Art. 111	Notice of basic information about the bank posted at its operating location
Art. 111a	Expanded financial reporting by a bank

Art. 111b	Duty to publish information about outsourcing
Art. 128a	Duty to inform the KNF of equity structure
Art. 128c	Notification to the KNF of intended acquisition of stake of shares with a value exceeding 5% of the bank's equity
Art. 134	Duty to submit to the KNF audited consolidated and unconsolidated financial reports together with an auditor's opinion and report
Art. 138	Need to carry out the KNF recommendations in the exercise of supervision
Art. 141g	Duty to provide information by banks operating in a holding structure

	National Bank of Poland Act
Art. 23(2)(1)	Duty to provide the NBP data necessary to establish the monetary policy and conduct a periodic evaluation of the cash position of the state
Art. 23(2)(2)	Duty to provide the NBP data necessary to prepare the balance of payments and international investment position
Art. 23(2a)	Duty to provide the NBP data necessary to conduct an evaluation of the functioning of interbank cash settlements and clearance
Art. 23(2a)	Duty to provide the NBP data necessary for evaluation of the banks' financial situation and the stability and risk of the banking system

	Payment Services Act
Art. 14a	Forwarding of quarterly information to the NBP by acquirers
Art. 14b	Forwarding of quarterly information to the NBP by issuers of payment instruments
Art. 14c	Forwarding of quarterly information to the NBP by issuers of electronic money
Art. 14c	Forwarding of quarterly information to the NBP by acquirers
Art. 83	Duty to provide the KNF quarterly and additional annual financial and statistical reports
Art. 86(3)	Duty to notify the KNF with respect to contracts entrusting the performance of core operations
Art. 92	Duty to notify the KNF of intended performance of payment services in another member state via a branch or agent
Art. 95	Duty to notify the KNF of the intention to conduct cross-border activity
Art. 123	Duty to notify the KNF of the intention to cease economic activity or activity as a payment service office
Art. 131	Notification of the KNF by the savings and loan association of commencement of payment service activity

Art. 132zl(3)	Duty to submit information or documents necessary for an evaluation of the functioning of payment schemes
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	Trading in Financial Instruments Act
Art. 68f(1)	Duty to forward data to the president of the NBP concerning current operation of securities depository or system for registration of financial instruments other than securities
Art. 81(6)	Duty to notify the KNF in writing of any change in data covered by the application for entry of an agent of an investment firm in the register of investment firm agents
Art. 93a	Reporting duties of an investment firm concerning concluded transactions
Art. 94	Duty to maintain records of transactions and archiving of documents and other information media
Art. 106	Notification of the intended sale of certain stakes of shares or share rights
Art. 110n(4)	Duty to verify whether an entity controlling brokerage is a financial holding company, financial holding company with mixed operations, or holding company with mixed operations
Art. 110v(5)	Duty for a brokerage house to forward data on compensation

These obligations may take various forms. They may be divided into those that are (I) *one-off* in nature, e.g. connected with the establishment of a financial institution; (II) *periodic*, e.g. the duty to submit quarterly reports and updates of data submitted to regulators; or (III) *ad hoc*, arising in extraordinary situations, e.g. in connection with the performance of a rehabilitation program.

Without questioning the need to obtain information from regulated entities, certain difficulties in the manner in which some reporting, notification and recordkeeping are performed should be noted. Firstly, the lack of a centralized and common channel of communication between obligated entities and regulators should be stressed. Generally, the transmission of data and information is governed by separate executive regulations applicable to specific entities. There is no consistency in the form of authentication or in the teleinformatic systems used. For example, the KNF and NBP provide separate systems, lacking complete consistency as to authentication certificates, the form of the submitted documents, and procedures for transmitting information to these authorities. RegTech tools create the possibility of a common and uniform system of reporting and communication used by all financial institutions and public authorities, together with the potential functionality offered by the application programming interface (API). The public authorities themselves could exchange data using properly encrypted communication channels.

The duplication of certain obligations should also be mentioned. For example, the statute of a bank or insurance company is examined and approved by the KNF

and by the registry court competent to enter the institution in the National Court Register. Nonetheless, progress can be observed in this respect.

For example, the proposal of 13 April 2017 to amend the Act on Trust Services and Electronic Identification and certain other acts⁴ provides for the gradual elimination of situations where citizens or businesses filing submitting to public entities are required to provide data that are already included in public registers or other public records.

According to a report by Grant Thornton, in Poland about 26,000 pages of acts and regulations enter into force each year and 34,000 tax interpretations are published, not to mention the thousands of pages of new regulations adopted every year at EU level.⁵ According to Grant Thornton's estimates, the average large firm in Poland had to complete 345 forms and reports in 2015. This means that every business day the accounting department must fill out and file with a public office an average of 1.4 reports. As indicated by the results of the study presented in the Grant Thornton report, the largest businesses operating in Poland may be required to complete and submit to public offices 484 forms of various sorts each year. Moreover, this number was calculated assuming that each company holds only one piece of real estate and thus submits only one real estate tax declaration each year. For some firms the number of forms to be filled out may be much higher.

https://legislacja.rcl.gov.pl/ projekt/12297458

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"Offices drown businesses in stacks of forms: Study on the scale of Polish businesses' obligations to report to public institutions," Grant Thornton, July 2015

As estimated by the authors of the Grant Thornton report, the central bank expects the average large business operating in Poland to fill out 85 forms over



the course of a year. This means that an accountant at such a firm must on average send a report of some kind every third day to the NBP alone. In addition, the average large firm had to file 78 forms with the tax office in 2015 and 77 forms with the Central Statistical Office (GUS).

These numbers confirm the scale of regulatory burdens imposed on financial institutions. For example, the Regulation of the Minister of Finance of 15 October 2014 on reporting to the National Bank of Poland by acquirers, issuers of payment instruments and issuers of electronic money (Dz.U. 2014 item 1427 as amended) contains 37 specimens of forms, while the Regulation of the Minister of Development and Finance of 27 October 2016 on submission to the NBP of data necessary for establishing the monetary policy, periodic assessment of the cash position of the state and analysis of systemic risk (Dz.U. 2016 item 1786 as amended) contains 31 specimens of forms. This is just two executive regulations, and on top of that are statutory reporting obligations for which no official form has been published.

The current regulations also impose on financial institutions the need to document numerous processes, systems and transactions. For example, under Art. 94 of the Trading in Financial Instruments Act, an investment firm is required to maintain records of concluded transactions and to archive documents and other information media prepared in connection with its business. Art. 90 of the same act requires the entity storing the documents to promptly prepare at its cost and forward to the KNF a copy of archived documents and media. A comparable obligation to submit copies of documents and information media is imposed on entities subject to oversight under the Financial Market Supervision Act. Another apparently onerous obligation is for the regulated entity to promptly prepare at its cost copies of documents, electronic correspondence, telephone logs, records of transmission of data or other information media and to provide written or oral clarifications concerning the subject of oversight upon any request by the authority (Art. 32(5) of the Capital Market Supervision Act, and similarly under Art. 18f of the Financial Market Supervision Act). Copies of documents must be certified as authentic, requiring the relevant clause and signature of the person providing the certification. The authenticity of copies of data included in IT systems or copies of data stored in media other than documents must be confirmed in writing, indicating the type of medium and its contents (Art. 34a(2)–(3) of the Capital Market Supervision Act).

And often regulated entities perform their reporting obligations in writing even though there is no technical reason why they cannot make their filings electronically. For example, Art. 81(6) of the Trading in Financial Instruments Act requires an investment firm to notify the KNF in writing of any change in data covered by an application to enter an agent in the register of investment firm agents. The same obligation is imposed on brokers and advisers entered in the list of brokers or the list of advisers. Another example is Art. 204(7) of the Act on Organization and Operation of Pension Funds, where if the regulator finds a violation of the rights or interests of members of the fund, the company, depository or third party receiving the notice is required to notify the regulator in writing within 3 days of the manner in which the irregularity will be addressed.

RegTech solutions enable better organization of reporting, informational and archiving processes. The aim should be to ensure that these processes are conducted in a fully digital manner, more automated and with less involvement of the human factor, translating into faster and cheaper fulfilment of regulatory requirements by regulated entities. This would also give the public authorities more time to devote to substantive rather than merely formal supervision.

Competencies of public authorities, manner and method of exercise

One of the most burdensome and costly obligations is to share information covered by banking secrecy upon the demand of authorized external entities. This obligation arises under Art. 105 of the Banking Law, which also provides a long list of authorities and other entities entitled to request information covered by banking secrecy. But the costs of providing such information and maintaining the necessary infrastructure represent a huge burden for banks. This example shows that the need to adjust to how entitlements of public authorities are exercised can be onerous.

On the other hand, regulators must devote huge investments of time and work to carrying out the oversight obligations imposed on them and their statutorily defined tasks. The Supervisory Review and Evaluation Process (SREP) is particularly engaging, requiring consideration not only of national laws but also resolutions, recommendations and other documents indicating good market practice. Undoubtedly, proper evaluation of risk, compliance with the applicable regulations by regulated entities, the adequacy of allocation of resources, and the quality of management processes are key to the stability of the entire financial and capital market.

In connection with the large number of regulated entities, the complicated organizational structure and the multiplicity of legal acts and prudential regulations, the identification of the most important types of risks and proper assessment of key business areas requires solutions offered by RegTech. These tools enable not only more effective performance of regulatory, analytical and oversight activities by the authorities, but also provide regulated entities with less burdensome methods of complying with their obligations. Obviously this requires appropriate action at the central level and construction of the proper infrastructure, but the long-range benefits surely justify the upfront costs.

Safety of personal data

The growth of financial services carries with it new technical and organizational threats to the safety of customers' data. The duty to secure the safety of customers' data partly arises under data protection regulations, and the means applied must be adequate to the threats. In the case of payment transactions and access to financial information, the measures must ensure the highest level of security. It is hardly possible to meet the highest standards for data protection and security without applying regulatory technologies.

In the banking sector, a high standard of care for data security has been forced by banking secrecy and the severe sanctions for violating it. Currently access to personal data is one of the fundamental factors making it possible to operate on the market for financial innovations. The limited grounds for processing of personal data (set forth in Art. 23(1) of the Personal Data Protection Act), the far-reaching informational obligations, and the broad definition of sensitive data whose processing requires express written consent are nonetheless the main barriers to growth of the market for innovative financial services in Poland. Regulations on transfer of data to third countries present another major challenge. Regulatory barriers in this respect significantly hamper the opportunity for growth of the FinTech market, where many services are of a cross-border nature.

With respect to the manner in which oversight competencies are exercised by regulators, the Personal Data Protection Act vests the Inspector General of Personal Data Protection (GIODO) with oversight authority to enable the regulator to protect citizens against unlawful actions by entities possessing and processing their personal data. But without the right tools, GIODO will not be in a position to conduct effective oversight.

One of the greatest challenges in exploiting regulatory technology is ensuring an adequate level of protection against unauthorized access to data, as required by GDPR, PSD2, and the proposed act implementing PSD2. The directive and the bill to implement it provide for obligations in the area of authentication and strong authentication of customers. These are designed to ensure accurate and reliable confirmation of the user's identity, but at the same time the supplier may not demand specially protected data concerning payments tied to payment accounts (proposed Art. 23c(2)(5) of the Payment Services Act, i.e. Art. 1(23) of the bill implementing PSD2). The need indicated in the research to regulate the possibility of using biometrics is hugely important for authenticating users' identity, including after obtaining consent to process biometric data from the data subjects.

The huge sets of such data and their varied classification and handling, as well as the high standards for their protection, demand the application of the latest RegTech solutions. Without the right IT architecture such data cannot be administered effectively and the risk of error will rise greatly.

RegTech - culture of dialogue between regulators and markets

Various regulators, depending on their competence, have different aims and priorities when issuing positions, recommendations and guidelines. It is encouraging to observe the more and more common practice of mutual consultations or appointment of interdisciplinary working groups composed of representatives of different regulators, so multiple aspects are taken into account when issuing guidelines. The inconsistency in regulators' positions on specific issues makes it impossible for regulated entities to meet the requirements of all authorities. They must then choose at their own risk which authority's guidelines to follow in a specific instance and to what degree they should comply with them.

An example of this state of facts is the simultaneous attempt to satisfy the duty to minimize the scope of data and the purpose for which the data are processed, imposed by GDPR Art. 5(1)(b)–(c) and currently Art. 26 of the Personal Data Protection Act, and the obligations imposed by industry regulations, particularly in the banking and insurance sectors.

The duties of "data minimization" and "purpose limitation" mean that a data controller may collect and process data adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed, and only for specified, explicit and legitimate purposes. In short, a data controller should process individuals' data in the minimum scope necessary to achieve the specific purpose. The form in which certain data are processed is also relevant, i.e. whether the data are processed as text or as a copy of an entire document. GIODO presents the established position limiting the possibility of processing personal data in a scope broader than necessary to achieve the specific purpose, i.e. processing additional data "just in case", and often challenges the ability to process copies of personal ID documents or other documents containing data clearly broader than the scope of data necessary for a bank, and therefore not relevant to the purpose for processing of the data.

Meanwhile, the KNF recommendations on the performance of certain statutory obligations often require obligated entities to take multi-step measures to achieve a single purpose, multi-step verification of processed information, including by obtaining copies of documents, or verification of employees' reliability using data broader than permitted by the labour law, without any basis in specific regulations.

In most cases of such conflicts, compromise solutions can be reached under the existing regulations, and inconsistency between recommendations results from a lack of information flow between the regulators issuing them. Consequently, only in a few instances would it be necessary to consider introducing appropriate legal regulations. In other cases, it would be entirely satisfactory to ensure the effective exchange of data between public entities. For this, instruments offered by regulatory technology are the ideal tool.

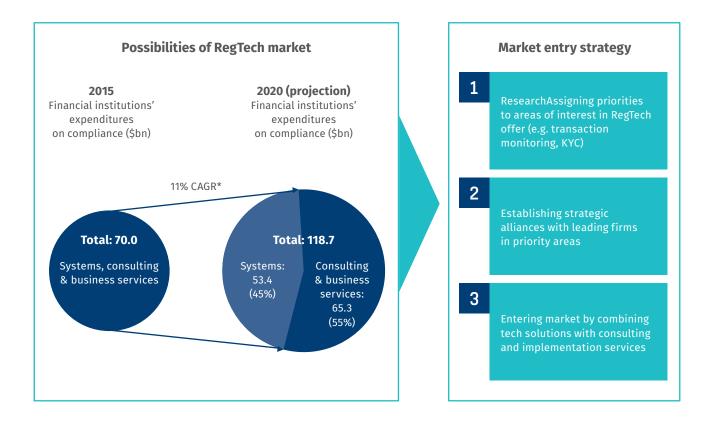
5.

RegTech

- business potential and technology

Market potential

6 Report "Let's Talk Payments, Strategic Analysis of RegTech: a Hundred Billion-Dollar Opportunity" It is estimated that the demand for programming for governance, risk and compliance (class GRC) at financial institutions will grow to \$120bn worldwide by 2020⁶. The estimated rate of return on investment in RegTech solutions may reach as high as 600% within the next three years. Although the RegTech market is still at an early stage of development and there are not many completed initiatives confirming a positive return on investment, its growth potential seems significant.



* CAGR – cumulative annual growth rate

Source: Accenture Research

Probably all banks are considering the use of RegTech solutions, not only because of broad availability and benefits, but also because the biggest players on the market will also use such techologies.

Although the growth in the RegTech field is promising, it is clearly not a panaceum for all challenges connected with the implementation of new regulations and fulfilment of the resulting obligations. It proves itself perfectly in specific regulations based on evaluative assessment, requiring the collection of significant volumes of information, and connected with the identification and management of risk. Typical areas where we can observe growth in RegTech solutions and firms are:

Assessment of compliance with regulations.

Management of data and reporting.

Identifying and combating financial abuses (including AML, KYC, etc.).

Risk management.

Technology

An advantage of RegTech solutions is their flexibility and the possibility of quickly adapting such solutions to an evolving regulatory environment, including tailoring them to local regulations. Traditional solutions are designed to meet specific demands on a specific time horizon, and their adaptation is time-consuming.

Moreover, many traditional suppliers base their business model on multi-module solutions providing full benefits only when many modules are used. The costs of these solutions and the time required to adapt them has generated a need for alternative solutions offered by RegTech.

RegTech covers a wide range of different technologies. It is generally recognized that if there is one common characteristic shared by all RegTech solutions, it is their reliance on cloud-based technologies. This makes it possible to ensure their flexibility and efficiency. Taking this as the point of departure, any technology aimed at improving the management and analysis of information/data may become part of a RegTech solution.

This obviously includes techniques for visualization of data and analysis of big data, blockchain technology, and elements of artificial intelligence, which includes everything from understanding natural language and semantic analysis to machine learning. Similar conclusions are presented by the Financial Conduct Authority in the UK in its recent study on RegTech.

The whole process of reporting and compliance with regulatory requirements involves numerous entities on the side of the organization making the filing as well as the organization receiving the filing. Many different categories of persons, from consultants to external service providers, must cooperate to produce a single report or notification, directly providing data and analyzing the documents. Such a complicated structure of activity requires technology to streamline the operating model for compliance and reporting. A technological solution meeting these challenges is cloud computing, which allows resources (databases, computing power and services) to be supplied via internet for a wide range of business requirements. The flexibility and distributional possibilities of this model seem to be particularly useful for obligations involving reporting and exchange of information. Cloud solutions will surely replace the exchange of data, drafts and documents via email and other classic methods.

Here are just a few examples of the advantages of using cloud solutions for regulatory reporting:

Accessibility – a critical requirement given reporting schedules.

Simplified and outsourced integration with regulators.

Cost reduction.

Capacity and scalability of the cloud – resources meeting needs.

Service on demand – the resources you need, when you need them.

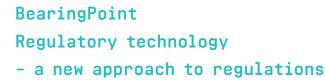
Easy implementation – aunching the reporting function with minimal implementation costs.

A review of solutions implemented around the world with a description of the nature of the service and technology used confirms the foregoing points for technologies now in use.

Name	Description of service and technology
Cloudera	Firm supplying a fast, uncomplicated, secure platform based on Hadoop. By using open source programming, the platform ensures flexibility and provides greater cost controls.
Kreditech	The Kreditech group uses big data and complex self-learning algorithms. The technology enables financial institutions to obtain, identify and evaluate clients within a few seconds. Automated processes combined with self-learning algorithms ensure the highest level of customer service while minimizing costs and human errors.
Ripple	Ripple delivers global financial settlement solutions, operating on the concept of Internet of Value (IoV). The solutions provided by Ripple minimize settlement costs by allowing banks to make direct transactions, quickly and with ensured settlements. Banks use Ripple to raise the competitiveness of their products based on cross-border payments and to join a global network of financial institutions building the foundations of the IoV concept.

Ayasdi	The firm offers solutions exploiting global information resources by automating and accelerating "Insight Discovery" tests. It uses topological data analysis (TDA) to simplify the mining for knowledge even from the most complex datasets organizations face today. Ayasdi's approach combines self-learning algorithms with huge computing power and topological summaries to improve the process of using data in business.
MapR	MapR is used in numerous areas of financial services, retail, media, manufacturing, telecommunications, governments, and Fortune 100 companies. The MapR solution integrates Hadoop, Spark and Apache Drill with database abilities in real time and with scalable data storage to reinforce the new generation of big data applications.
Sift Science	Sift Science software is used to uncover and eliminate abuses and reduce costs. The solution is based on cloud processing employing self-learning algorithms using over 5,000 sources of signals of financial abuses and a network of over 1,500 websites. Sample applications including card complaints and abuses by account holders. Sample fields include tourism, digital money, e-commerce and payment institutions.
FoundApps	The firm delivers a cloud-based solution that monitors and responds to discovery of regulatory changes found by an automatic monitoring service. This service automates one of the most complex processes in the area of financial regulatory compliance.
Passfort	The Passfort solution, based on an online platform, enables collection, authentication and secure storage of all AML and KYC data in the cloud. Passfort combines smart data processing with specific configurable authentication stages, and assessment of risk and decisions. The solution automates authentication of new customers, reducing costs and increasing revenue and customer satisfaction.
Elliptic	The firm creates a trustee bank for blockchain assets. All internal processes have been evaluated as meeting the same requirements as a traditional trustee bank. All blockchain assets of customers are fully insured by a Fortune 100 company. The firm has built AML processes for the purpose of controlling of blockchain transactions and has also provided integration with other global institutions.

Potential of RegTech from the perspective of suppliers

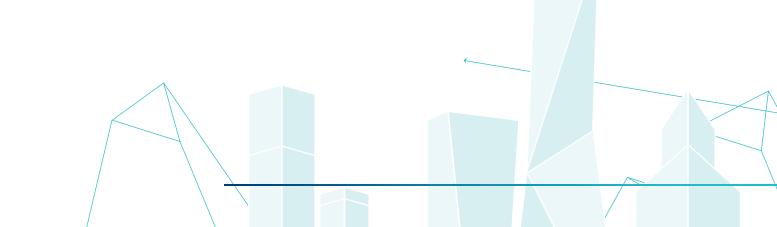


Dr Maciej Piechocki Partner, BearingPoint:

Through our innovative regulatory and risk management technology we enable financial institutions, regulators, and central banks to increase the efficiency of regulatory processes and data management and to comply rapidly with ever-changing requirements. Our RegTech #1 innovative product is Abacus360 Banking, an integrated solution for 360° reporting, risk calculation, and controlling regulatory KPIs. It offers standardized reporting modules for numerous jurisdictions, modules for risk calculation and valuation, such as simulation and risk quantification, as well as additional comprehensive functional components for regulatory analytics. Abacus360 Banking fulfils the requirements of BCBS 239 principles for risk data aggregation and reporting. It also meets the requirements of data lineage through the complete audit trail (CAT).

To address the complexities of the regulatory environment BearingPoint has provided Abacus for AuRep, a regulatory utility. In Austria, the central bank Oesterreichische Nationalbank (OeNB) together with the country's banks and BearingPoint as solution provider implemented a new reporting model including an innovative

outsourcing approach. The largest Austrian bank groups, representing around 90% of the market and 1,200 banks, have founded a joint venture, Austrian Reporting Services (AuRep), which is regarded as Europe's largest regulatory reporting utility, or in other words large regulatory reporting hub. AuRep processes over 1.4 billion records each reporting date. It allows reporting of current prudential and statistical requirements and also incorporates future regulations such as AnaCredit. AuRep runs on BearingPoint ABACUS/GMP, a common software platform which works as the central interface between the banks and the OeNB. But not only the outsourcing of reporting tasks to a joint venture is innovative. Austria has also chosen an innovative approach regarding the data input format. The template-based reporting method is going to be replaced by an "input-based approach" based on data cubes. The Austrian banks deliver micro data on the level of single contracts or deals, like loans, deposits and securities, in the form of "basic cubes" to ABACUS/GMP. These basic cubes are enriched by additional attributes and then the required reports are generated in the form of multi-dimensional data cubes, known as "smart cubes". The smart cubes are finally analyzed, signed off and submitted to the OENB.



5. RegTech - business potential and technology



BILLON

Andrzej Horoszczak Founder & CEO, Billon:

For us, RegTech means introducing groundbreaking technologies within banks into regulatory processes in order to improve the digital interaction with the bank's customer. I fully agree with the description by the FCA (which oversees Billon) from December 2016 that RegTech is thinking about technological innovations that help solve problems in a regulated business model. As regulated entities, banks shift growing regulatory requirements onto their customers, for whom compliance is inconvenient. Often regulatory processes are added on top of the existing customer trail, as a result of which the bank user journey deters customers and they escape to FinTech firms. Thanks to Billon, regulatory requirements are "invisible" to the bank customer. Billon's 2nd-generation blockchain technology provides a base on which such compliance processes can be built for banks, to prevent the flight of customers to FinTech firms. I should mention that we are the first regulated firm in the world with blockchain and DLT products aimed at financial institutions. FCA accepted us in 2016 for the RegTech sandbox also with the aim of observing our blockchain solutions and adapting such solutions for building regulations appropriate to a changing world. Our technological and product platform is a special type of distributed database relying on the conception of a 2nd-generation

blockchain system exploiting knowledge of IT, finance, mathematics and cryptographics on a global level. The architecture uses commonly available computer resources, such as cloud servers and smartphones, to create a network which inextricably links data with the complete history of modifications, as well as rules for proper control of access, which are integrally built into the metadata. Transactions using a distributed main ledger are immediate and intuitive for the user, and integrate well with the bank infrastructure and portfolio. This solution has proved itself since 2015, among other things as a platform for an incontrovertible record of payment for thousands of payment transactions per month in the UK and Poland. Additionally, the architecture, which was developed with the thought of removing the limitations of traditional centralized server rooms and SQL databases, provides a cost-effective medium for securing and accessing data and digital documents for mass customers. Because they are built on a bespoke blockchain and distributed databases (DLT), they are capable of "growing" and adjusting to the rising expectations of regulators. The data are accessible via numerous replicated sources, which guarantees the high accessibility of the system. The distributed ledger technology ensures access to documents for an unlimited time. Excluding or eliminating a participant (publisher) from the network has no effect on entries it has already published.

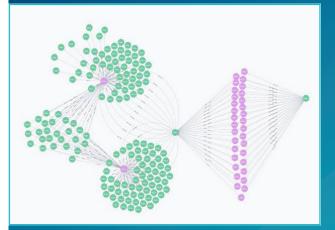


COINFIRM

Blockchain is RegTech - new compliance

Paweł Kuskowski CEO & Cofounder, Coinfirm:

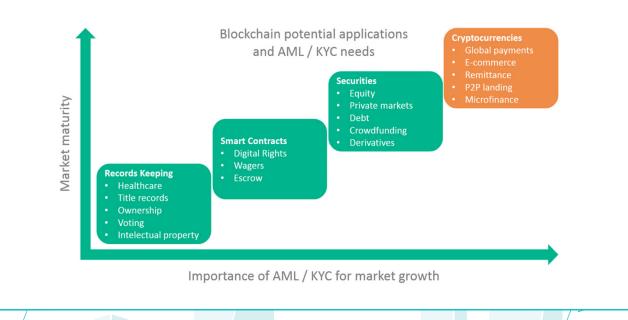
The current regulatory framework is expensive and ineffective as it is segregated and siloed, but this may all change with the emergence of blockchain. The Heritage Foundation has estimated that "the AML regime costs an estimated \$4.8bn to \$8bn annually," and most financial institutions dedicate significant amounts of time and labour to this issue.



Coinfirm: Blockchain transaction cluster

Not too long ago I sat down with the global FinTech influencer Chris Skinner to talk about how blockchain fits into regulatory compliance and AML. At one point he was shocked when I said, "There is around \$1.6 trillion of money laundering globally and less than 2% is caught by the financial system." I added that with the implementation of blockchain along with a blockchain compliance platform like Coinfirm, it could take compliance processes to near automation and that the 2% that is caught could skyrocket to over 90%.

A blockchain is a public ledger based on an open-source code that can be reviewed by anyone. All messages and payments in the blockchain are encrypted and cannot be hacked. The blockchain allows for transfers of value to be made on a peer-to-peer basis with no need for an additional platform or intermediary. It also allows full auditability: for a transaction to be effective all data must be registered in the blockchain and no data can be altered.



This new and growing economy based on blockchain contains a new paradigm: transparency, traceability and auditability – a great basis for efficient and effective compliance, especially around AML/KYC. However, we cannot make the old mistake of doing AML/CFT in data silos. Blockchain can revolutionize the select sharing of data between institutions, and part of the goal of Coinfirm is to create a new global standard for blockchain transactions.

With blockchain set to become the standard for many transactions in the traditional financial world (with around 100 banks currently testing Ripple for example), we must address the reality that we could totally revolutionize AML and compliance and create a new standard. So what problems could be solved if blockchain were applied across the traditional financial sector? Ultimately, with good information provided from the network, illicit funds could be marked and not accepted by market participants. This means the system could, theoretically, reach near 100% effectiveness.

Overall, the cost of compliance would decrease dramatically and effectiveness would increase dramatically as well. In reality, by combining blockchain transactions with tools like our platform, compliance could be revolutionized, moving from a costly headache to an automated utility.



TURBINE ANALYTICS

Piotr Smoleń Cofounder of Turbine Analytics, Managing Partner at Data Ventures Fund:

Turbine Analytics is a firm offering FinTech and RegTech solutions in a SaaS model in Central & Eastern Europe since 2012. The main target for the services is financial institutions, primarily investment funds, brokerages, insurers and banks. Turbine Analytics solves issues of compliance, reporting and risk management for investment portfolios of financial institutions' customers. Turbine Analytics is today one of the largest suppliers of RegTech and FinTech solutions for the capital markets sector in Poland.

The main problems of financial institutions in Poland connected with compliance include:

Rapid growth in the quantity of legal regulations

- in recent years the number of regulations connected with the capital markets has grown significantly, leading to a great increase in headcount in the compliance function, as well as a clear increase in compliance budgets. RegTech solutions allow for containment of budgets and greater scalability of the compliance function, as well as automation of reporting processes, so organizations can focus on products, customer service, sales and marketing.

HIgh variability in the regulatory environment – new regulations are adopted at an express tempo, often without a reasonable grace period or adequate consultation with market

participants. The result is that many regulations

are adopted at the last minute, or late, and adaptation of IT systems to the new market conditions costs more. RegTech solutions allow for a more agile approach to rollout of new regulations, so the organization can adjust to the new environment automatically.

Great discretion in interpretation of law

- the fairly broad latitude in interpretation and application of the law by regulators is a big challenge for institutions in Poland. This means that when adapting to new regulations, the compliance officer has no guarantee that the newly launched processes will be consistent with "market practice". By implementing RegTech solutions, the institution benefits from the network effect (as many players on the market use similar tools), thus significantly reducing legal risk.

Growing regulatory risk

- new regulations expand the catalogue of prohibited acts and raise the penalties for noncompliance with the regulations. Faced with large volumes of new acts governing the capital market, it may happen that an institution fails to achieve compliance with new regulations through simple oversight. Implementing RegTech solutions reduces this risk.

In short, RegTech solutions offer an agile approach to implementation of new regulations, allowing the organization to focus on its core business while maintaining a low level of regulatory risk.



6.

Active role of the state in RegTech

- global best practices

Potential benefits for regulators

The manner in which compliance with regulatory requirements is achieved seems to be a secondary issue for regulators and watchdogs. but there are certain areas where the authorities should be just as interested in the processes and tools used within the regulated entities as they are in increasing the effectiveness of their oversight activities. Therefore RegTech solutions generate specific benefits also for regulators, and in many countries around the world initiatives of this type are encouraged by the state authorities.

Many of the RegTech solutions currently functioning globally arose with help from acceleration programs supported by local regulators.

Experiences in the UK, Ireland, Luxembourg and Singapore offer good examples of best practice in the area of regulatory technology.

UNITED KINGDOM

The UK is one of the world's friendliest jurisdictions for innovative technologies, including financial technologies. In October 2014 the Financial Conduct Authority launched Project Innovate, aimed at stimulating financial innovations. Some 500 businesses benefited from the program in its first 20 months. In the first half of 2015 a study was begun on the potential of RegTech. At the same time, the Government Office for Science began a study on the possibilities for support for FinTech, requesting regulators to begin work on this issue.

In November 2015 the FCA announced open consultations aimed at dialogue with the market leading to support for the development of regulatory technologies. In the consultation, the regulator submitted a number of questions to the market, testing the market's expectations for RegTech solutions. The most important questions raised by the FCA included:

The market's expectations as to the methods for implementation of RegTech and preferred forms of contact with the regulator.

The regulator's anticipated role in creating a favourable environment for development of regulatory technologies.

Key factors blocking the development of RegTech, with particular attention to legal factors, and the expected measures to be taken by the regulator.

Concrete examples of RegTech applications with the greatest potential for optimization.

The FCA received over a hundred responses to the queries presented to the market, with the most active respondents being tech suppliers (43%), consultants (23%), and financial services firms (23%). There was notably little interest in the study among startups, accelerators and research centres (3% each).

Continuing this initiative, in March 2016 the regulator held a number of meetings with researchers and consultants. Over 250 organizations participated, mainly represented by senior management. The consultations focused on three key areas identified for improvement:

Communications with the regulator.

Greater effectiveness of the FCA's own efforts at encouraging development of innovations.

Precise definition of the regulator's role in the process of implementing regulatory technologies.

The responses indicated four key issues connected with RegTech:

The need for more efficient technologies for transmitting information – the cloud, online platforms, and generally SaaS serving various stakeholders.

Integration and standardization, to some degree contradicting the expected diversity in forms of communication – a glossary of concepts, a standardized mechanism for submitting questions and responses, processing text into code, and even a "robo-rulebook" (an interactive AI-based guide explaining and assisting in the fulfilment of regulatory obligations), and the regulator's API.

Streamlined data analytics, including big data, risk monitoring, and machine learning.

Innovations – blockchain/DLT, auto compliance, biometrics.

The businesses indicated the following principal aims they would like to achieve through the use of RegTech:

Reduction in compliance costs (mainly HR costs).

Improving the security of services they provide.

Limiting the risk of regulatory sanctions.

The need for RegTech growth as a condition for growth in FinTech.

The consultations and roundtables also identified fundamental barriers to the growth of RegTech:

Uncertainty in law and interpretation.

Unfavourable regulations (among others, requirements for storing and processing of data, including personal data).

Lack of a regulatory "sandbox" for RegTech solutions.

Resistance by financial institutions, mainly banks, to rapid adoption of new technologies, resulting in inadequate cooperation with other institutions and RegTech startups.

Insufficient financing of investments in regulatory technologies.

The identified challenges form a kind of causal loop. The high legal and interpretational risk for new regulatory technologies discourages banks and other financial institutions from trying new solutions; it is safer to conservatively apply makeshift regulatory solutions using the technologies available today. The lack of pressure on regulators by the big players in turn makes it hard to raise funding for investment in designing standardized, highly accessible RegTech solutions.

The respondents also pointed to the need for active involvement by the regulator in the development of RegTech. Here it is worth citing the comments by Christopher Woolard, FCA director for strategy and competition, who said during the consultations in 2016 that in his view, the regulator's role may consist not only of promoting regulatory technologies by ensuring a convenient space for RegTech development, but also by directly implementing such solutions in the public sector. More significantly, Woolard stressed the incredibly important role of blockchain/DLT, the thoughtful and skilful application of which can revolutionize the delivery of financial services and consequently compliance and reporting.

Innovate Finance, an independent British organization with members from the financial innovation sector, estimates that over 30% of its member firms have launched RegTech activity or research.

The RegTech roundtable formula used for the FCA consultations is continuing in the form of numerous conferences, meetings and hackathons organized jointly by the financial and IT industry and the FCA.

BREXIT

The role of London as the European capital of financial technology, including regulatory technology, was thrown into question by the referendum calling for the UK to leave the European Union. Polls of businesses as well as observations of the evolving situation on the British market point to a reduction in its potential, in favour of countries like Ireland, Luxembourg and Poland.

IRELAND

The international financial services industry represents one of the largest sectors of the Irish economy, employing more than 38,000 people nationwide.

"IFS 2020: A Strategy for Ireland's International Financial Services Sector 2015–2020", adopted in March 2015, includes a chapter devoted to support for innovation, entrepreneurship and research in the financial sector, with particular emphasis on risk management, governance, compliance and reporting. Although the term "RegTech" is not used expressly in the strategy, as part of IFS 2020 the Governance, Risk and Compliance Technology Centre (GRCTC) was established at University College Cork. In its work, conducted in conjunction with the IT industry, the financial sector, partner academic institutions and regulators (both the Central Bank of Ireland and foreign authorities), this innovative research centre pursues the development of regulatory technologies and support for enterprises taking up operations in this field. One of the projects led by GRCTC is Financial Industry Regulatory Ontology (FIRO), involving semantic analysis of the text of financial regulations and translation (using experts from the fields of law, finance and ontology engineering) into the machine language necessary for development of "smart regulations" – i.e. regulations enforced through RegTech.

The activity of GRCTC is aimed at preparing the scientific assumptions for implementation by legislators and regulators (in the case of Ireland, the central bank) of the target model for RegTech, based on the "compliance by design" principle.

The initiatives undertaken by the Irish contribute to their image as a country friendly to R&D on emerging transactional technologies. At the beginning of 2017 Dublin became the headquarters of the EMEA Financial Services Blockchain Lab, which researches such issues as the possibilities for processing, encryption and recording of financial data using distributed ledgers. Ireland is also the home of such important RegTech startups as Silverfinch, Trustev, TradeFlow and Corlytics.

LUXEMBOURG

Luxembourg is another potential European leader in regulatory technologies. This is tied to the wealth of experience of its local financial sector and the nature of the financial institutions located in Luxembourg. The numerous investment funds and active securities trading in this jurisdiction translate into extensive regulatory duties, particularly in the area of KYC and AML.

The national regulator, the Commission de Surveillance du Secteur Financier (CSSF), displays a great interest in financial innovations, regarding them as one of the fundamental factors for growth of the country's finance idustry (among other things, it was the CSSF that issued a licence to Bitstamp, the first legal platform for exchanging bitcoin into euro).

Recognizing the potential advantages of RegTech solutions, as well as the expectations expressed by the local financial market, the Luxembourg Institute of Science and Technology (LIST), in cooperation with the Ministry of the Economy and the Ministry of Finance, launched a program in May 2016 called "Smart Finance" with RegTech as one of its key elements.

In the Smart Finance program, a number of initiatives are being undertaken supporting research, development and implementation of a regulatory environment that is stable but also flexible, responding to needs presented by successive innovations. LIST's most important tasks include coordination of the development of the digital platform "RegTech Luxembourg", designed to integrate existing and future reference models, data repositories and analytic software.

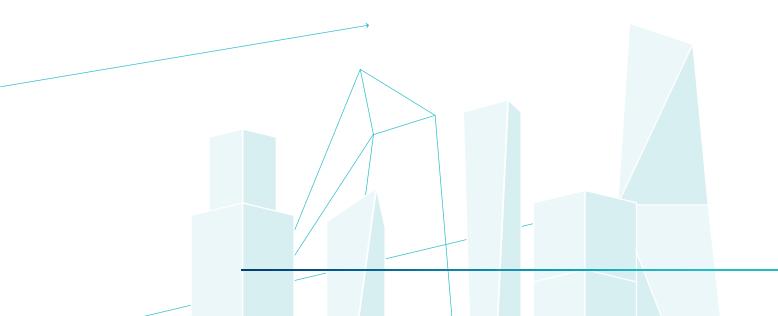
SINGAPORE

Singapore was one of the first countries in the world whose financial watchdog introduced a regulatory sandbox. The Monetary Authority of Singapore (MAS) displays great involvement in financial innovations, including both FinTech and RegTech.

In a speech delivered in April 2017, MAS managing director Ravi Menon raised the issue of the significant growth in burdens arising out of financial regulations, and the consequences for market players. He also stressed that drawing on the experiences from the crisis of 2008, safer alternatives to ordinary deregulation should be sought. He mentioned that the use of risk-management technology – i.e. one of the branches of RegTech – as one such solution. Therefore, in the view of the head of MAS, the regulator's discourse with the market should focus on methods for creating smart financial regulations, capable of merging the interests of financial institutions with the regulator's duties. He announced that MAS is open to cooperation with the FinTech sector with the aim of reducing technological distance and educating itself on the application of new technology on an ongoing basis, which is already happening in the regulatory sandbox created in the Asian city-state.

This is backed by numerous initiatives by the regulator aimed at creating an affiliated community of stakeholders from the financial services and tech sectors. The FinTech Festival in November 2016 attracted over 11,000 participants.

The RegTech solutions designed by the regulator include non-standard analytical tools used to generate reports of suspicious transactions or identify toxic debt securities offered to investors. In the spring of 2017 MAS announced the establishment of a dedicated Data Analyst Group to complement and support inspectors by applying innovative regulatory solutions. The group will also be tasked with reinforcing the exchange of know-how with market participants.



7.

Strategic scenarios and recommendations

Poland is the largest country in Central & Eastern Europe, with high STEM competencies, capable of educating high-quality programmers and computer scientists, particularly specialists in cryptography, and has the conditions for building competitive advantages in the region based on investments in human capital and the creation of dedicated infrastructure for offering secure financial services. A market dialogue supported by a sandbox for testing programming and an openness to international cooperation could provide the impetus for transformation of the oversight and regulatory environment.

Furthermore, patterned on the experience in Ireland, a dedicated centre for research on RegTech and transaction safety would reinforce efforts taken in the industry and provide a framework of competencies for its growth.

Such a profile for the FinTech sector in Poland, with innovative banks at its core, would ground its competitive advantages on a unique approach to regulatory innovation. Two alternative scenarios for growth of the Polish RegTech sector may be outlined. These are extreme scenarios, but they paint a clear picture and can mobilize stakeholders to take action.

Passive scenario

In this scenario, the Polish financial innovation sector is not stimulated by the state toward development of regulatory innovations.

Regulators do not decide to explore RegTech as an important area for raising the efficiency of Polish financial institutions and supporting the growth of the Polish sector for providers of RegTech solutions. Therefore no dedicated program for supporting regulatory innovations is launched. No institutions coordinating measures aimed at expanding regulatory technologies supporting the growth of the FinTech sector in Poland are established.

Financial institutions will make only limited use of innovative solutions for meeting their regulatory obligations, reporting and compliance. Nor will regulators exploit innovative solutions enabling them to exercise oversight through automated collection and analysis of data from regulated institutions.

No RegTech startups are founded in Poland with the potential for achieving European-wide or global scale. London will remain the strongest RegTech centre in the region, with Dublin steadily reinforcing its position. Without RegTech, FinTech will never reach its full potential.

Proactive scenario

This scenario assumes a conscious and active role for the state aimed at building advanced, systemic RegTech solutions in Poland.

Financial institutions will exploit innovative solutions to fulfill regulatory, reporting and compliance obligations. A national regulatory and compliance architecture will also arise, i.e. a set of standards facilitating fulfilment of supervisory requirements by regulated entities. The criterion of optimization of compliance will be taken into account at the stage of law creation. This will ensure efficient transfer of data between regulated entities

and regulators, followed by efficient analysis of the data. Regulators will thus exploit innovative solutions facilitating the exercise of their oversight function through automated gathering of the required data from financial institutions.

A government program dedicated to the growth of RegTech will be developed in cooperation with the private sector and successfully implemented.

At the same time, the functioning of oversight authorities will be optimized in terms of support for the FinTech sector. The regulator will launch a dedicated program of support for regulatory technologies, continuing the work on the regulatory sandbox. To reinforce the position of the Polish FinTech ecosystem within the region, a centre for research on RegTech and transaction security will be established. The market will be characterized by strong cooperation between mature financial institutions (banks, payment institutions, insurers), RegTech providers, and universities, regulators and watchdogs.



Karol Mazurek,

Managing Director, Accenture Poland: The growing expectations of customers and the

dynamically evolving regulatory environment mean that banks seeking to maintain or raise their competitiveness are already eagerly working with FinTech firms, often offering a new perspective on existing services and processes. This is particularly visible in the case of applications accessible to customers, such as mobile banking applications or personal financial management.

For some time we have witnessed great initiative by British officials supporting efforts toward market innovations in banking. In 2015 a working group at the Competition and Markets Authority published a framework for open banking involving access to data via an "open API" and access to non-personal data which could be publicly available. FinTech firms can already develop, test and sell solutions directly to banks or bank customers in a format enabling integration via an API interface, or launch services for banks, bank websites and applications through their intermediation.

The regulatory sandbox launched by the FCA is expanding the scope of interest of tech firms in other banking processes, enabling RegTech to be tested under the watchful eye of the regulator. A lively RegTech ecosystem will be created with the following stakeholders as its pillars:

Regulators and watchdogs

Their role will consist of ongoing education and promotion of useful solutions involving regulatory innovation, with the aim of increasing the operating efficiency of the financial sector. The authorities will also be involved in leading an active dialogue among market players leading to the construction of common standards and solutions optimizing fulfilment of oversight requirements (e.g. reporting) by regulated institutions. The authorities will also decide on gradual implementation of the best analytical solutions, ideally tailored to the local specifics, streamlining the analysis of the data submitted by market players.

Firms providing RegTech solutions

These entities will provide top-class solutions for regulatory technology for both market participants and regulators.

Financial institutions

Their role will consist of the active implementation of RegTech solutions acquired from external suppliers, as well as constructing their own in-house solutions.

RegTech will support the entire financial technology sector, which will strengthen Poland's role as a regional centre for financial innovation. A strong group of tech firms will develop in Poland, supplying RegTech solutions to domestic and international financial institutions.

Making this scenario a reality will require the implementation of the recommendations below.

STRATEGIC RECOMMENDATIONS

- 1. Launching a RegTech development program in Poland.
- 2. International cooperation and acceleration of innovations among regulators (e.g. R2A initiative accelerator for regulators).
- 3. Development of new reporting and compliance standards based on information technologies and data transmission protocols.
- 4. Close cooperation between regulator and startups to regularly update knowledge.
- 5. Cooperation with academic centres to develop new tools for systemic risk management in the form of mathematical, analytical and related techniques.
- 6. Optimization of the functioning of financial regulators in terms of support for regulatory technologies.
- 7. Treating regulatory technologies as fundamental support for growth of the financial innovation ecosystem.
- 8. Building a centre for research on regulatory technologies and transaction security.
- 9. Creating a virtual sandbox for testing financial innovations, as a tool for the development of regulatory technologies.

PRACTICAL RECOMMENDATIONS

Partnership, cooperation and more technology

The list of recommendations for regulators presented below is a direct reflection of the beliefs and opinions of the representatives of banking institutions in Poland surveyed by PwC. It applies equally to the current needs and problems and the directions for seeking solutions. These recommendations are drawn from basic research – information flowing directly from the market.

Recommendations for regulators

	Banks' needs	Problems identified	Possible directions for improvement
1	Coordination of actions, consistent approach to the same thematic areas and oversight requirements within each regulator and in cooperation with multiple regulators covering the same field.	Providing the same data and clarifications multiple times to different authorities and various units within the same regulator (inspectors, analysts) and various regulators handling the same or similar topics (the KNF and GIIF, the KNF and UOKiK/Financial Ombudsman).	Greater exchange of data between regulators and within each oversight institution (avoiding a silo approach). Creation of a common repository of data used by various authorities.
2	Limiting the scope of reporting and avoiding the duplication of requirements for submission of data, seeking greater informational synergies.	Banks are required to provide great quantities of information and reports to various regulators, some of which appears hardly to be used and some of which duplicates existing data. Handling such numerous informational and reporting requirements now imposed on banks (both regular reporting and ad hoc questionnaires and reports) raises operating costs and absorbs significant resources.	Holistic reform of the scope of data needed by various regulators, with a stress on consistency, avoiding the duplication of the same requirements (similar data required by different regulators), with the aim of establishing a balanced and optimal (from the perspective of the aims of oversight) set of informational and other requirements (systems, processes at banks) for regulated entities. Defining a proportionate and essential minimum of information necessary to conduct oversight activities at entities of varying size and operating scale (including better calibration of SREP, reporting, scope of data for inspection, Pillar 3 disclosures, additional reporting). Elimination of unnecessary reports, particularly minimizing the frequency and scope of numerous ad hoc reports (beyond periodic reporting) required by the banking supervision – reports generating costs and absorbing resources.
3	Direct and open dialogue between regulators and banks.	There is still a less than satisfactory level of dialogue between regulators and banks in terms of day-to-day analytical oversight, reporting, evaluation during inspections, the transparency and understanding of oversight activities, and interpretation of unclear regulations and regulatory requirements. In too many instances communication takes the form of commands rather than dialogue.	Ensuring greater opportunities for direct contact with regulators. For example, more frequent training and informational events (the respondents valued the role of the CEDUR training organized by the KNF) and development of a formula for regular personal contact between the analyst overseeing the bank and the relevant units at the bank most often preparing the materials for regulators, e.g. the persons responsible for the bank's risk or compliance division. Greater possibilities and quicker responses by regulators to inquiries from banks, providing more unambiguous positions by regulators.

4

Clear definition of the proportionality principle and its implementation in supervisory practice (inspections, SREP, etc.). Little or no practical consideration for the principle of proportionality in relation to smaller banks or banks with a limited range of activity or products. Simplified regulations and reduced demands in relation to smaller entities, particularly with respect to SREP and various ad hoc questionnaires and requirements for rehabilitation plans.

In summary, three clear trends emerge:

First, the banks point to what they perceive as inefficiency in the use made by various supervisory authorities of the huge quantity of information provided by the banks and express doubts as to the point of regulators' obtaining at least some of that information. The banks argue that the broad scope and quantity of information sought, particularly in the absence of modern analytical and IT tools, may in practice prevent or seriously limit its effective use in oversight processes and decisions by the authorities. Their doubts also concern the efficiency of processing and sharing of information within and between these authorities, and how the information is used in supervisory activities. They also stress the inadequacy of the feedback provided to the banking sector after the banks complete the often costly work of preparing various data and questionnaires (additional demands, often ad hoc, with a brief time to deliver) for regulators (including costly efforts to obtain data from internal data warehouses especially arranged to comply with the expectations of the regulators, departing from the standards used in periodic reporting).

2.

Second, this informational and reporting effort is often duplicated by similar reporting for different authorities. An example of an area where such inefficiencies have been identified is consumer protection, where the increasingly visible activity of the Financial Supervision Authority overlaps with the activity of the Office of Competition and Consumer Protection and the Financial Ombudsman.

3.

Third, while some of the problems with informational burdens imposed on banks may be resolved qualitatively by improving the processes within oversight authorities and in the cooperation between them, a fundamental group of activities of generating, collecting, processing and analyzing data require technological changes, particularly when it comes to the collection and flow of data.

Piotr Bednarski,

Director, Financial Sector Advisory Team, PwC: New technological possibilities should catalyze improvement in information management by banks and regulators alike. But technology alone is insufficient. What is also needed is more efficient processes within regulators and an approach by regulators to regulated entities more based on dialogue and a common search for solutions. With the flood of local and EU regulations, the method of regulation and oversight in Poland and the EU, particularly of small and medium-sized entities, must be rethought, as has been called for by the European Commission and many banks in the EU for years. Some requirements should also be reduced, e.g. in terms of the true need for obtaining information and performing oversight measures. The manner of organization of supervisory processes within the regulators themselves, their cooperation, consistency of approach, duplication of expectations, etc., also requires optimization. There is also a need for greater awareness among

lawmakers and regulators of the significant costs of preparing information for regulators and fulfilling national and EuropeanEU regulatory requirements which are often disproportionate to the risks and systemic importance of small and medium-sized banks. These burdens imposed on banks, passed on in the cost of services for customers, can in practice eliminate smaller but socially (locally) beneficial entities from the market. Therefore there is potential for optimizing (automating) and improving processes and thoughtful adoption of certain new technological tools, while eliminating ineffective processes and regulations not warranted by the purposes of oversight. There is also potential for optimizing processes for performance of regulatory obligations within the banks themselves, beginning with the issue of the quality and speed of generating data and in the processes of verification, monitoring and communications with regulators. One for the first steps toward building a better operating model is therefore to optimize the process itself and to improve the regulations governing it.

Finally, we should stress what we believe are the key challenges for regulators in optimizing their activities on the financial market:

1.

Optimization of processes, regulations and functions governing the process of oversight, regulation and reporting of banks, as well as improvement in the internal cooperation between different regulators and within each of these authorities.

2.

Creation or remodelling of existing procedural and technological solutions within supervisory authorities enabling low-cost optimization of oversight requirements, particularly the automation of mass processes, better and often common solutions for groups of regulators with similar competence (e.g. the BFG, KNF, NBP and GIIF), freeing up resources for activities creating value.

For lawmakers and regulators, exercising oversight of a dynamically evolving and growing financial market presents a huge challenge which will soon force them to apply and rely on RegTech. While the fundamental regulatory aims like stability and safety of the financial system and individual financial institutions remain unchanged, the tools used to pursue these aims are increasingly becoming outmoded.

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The Centre for New Technology Law at the Faculty of Law and Administration at the University of Warsaw is a research lab aimed at conducting research and disseminating knowledge on the legal aspects of new technologies, with a particular emphasis on financial technologies.





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About FinTech Poland:

FinTech Poland (Fundacja na rzecz Innowacji Finansowych FinTech Polska) is an independent foundation whose aim is to promote financial innovations and transactional technologies and strengthen Poland's role as a European centre for financial innovation.

www.fintechpoland.com

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