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This white paper from research and consultancy company Goode Intelligence has been commissioned by Compliance.ai to review some of the important challenges and pressures that financial services' compliance functions are under when dealing with regulatory change management.

The study discovers that organizations are under significant pressure in dealing with increasing quantities of financial regulatory information that is being generated by financial regulators. This fact, in combination with a lack of automation, is seriously affecting the ability to guarantee compliance.

Financial services organizations are able to manage regulatory change by adopting the latest Regtech solutions that can support a compliance function with expert-in-the-loop AI.

GETTING REGULATION UNDER CONTROL

Pushing the Regulatory Change Ball up an Ever-Steeper Mountain

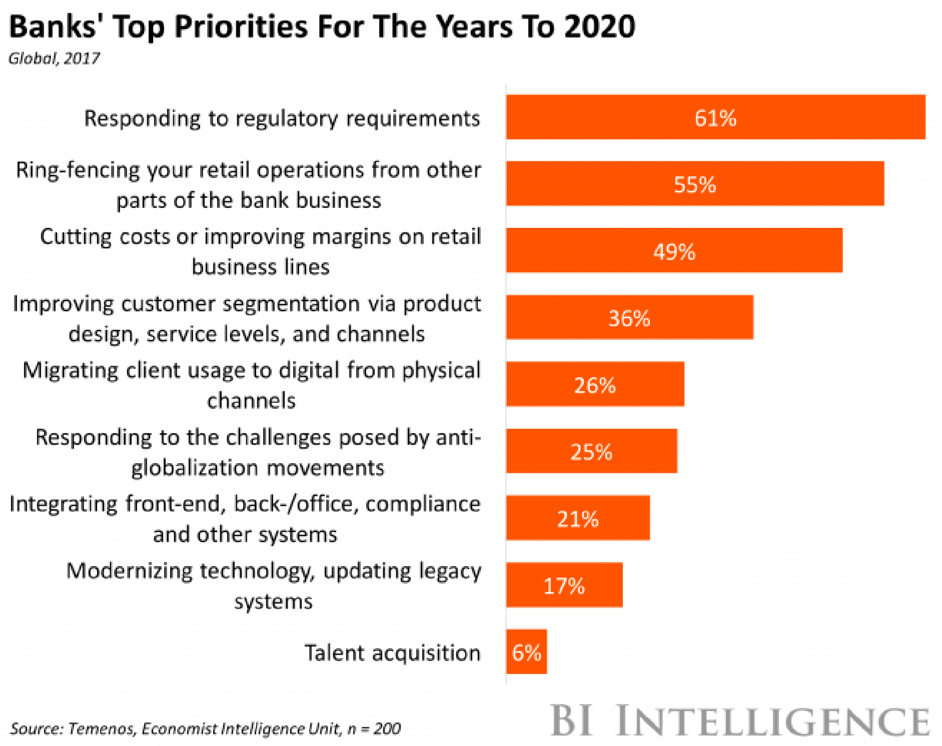
Financial services organizations are dealing with a tidal wave of regulatory change that shows little sign of abating. This issue is confirmed by the Boston Consulting Group in its annual survey of the financial services industry who stated that the number of rule changes that banks must track on a daily basis has tripled since 2011, to an average of 200 revisions a day, according to the report.[1]

"Mountains and Mountains of Regulation...."

The financial services industry is facing "mountains and mountains of regulation" according to a compliance officer of a London-based financial services organization that Goode Intelligence interviewed for this study.

[1] Global Risk 2017: Staying the Course in Banking / March 2017 published by the Boston Consulting Group https://www.bcg.com/en-gb/publications/2017/financial-institutions-growth-global-risk-2017-staying-course-banking.aspx

"Regulation must be considered a permanent rise in sea level -- not just a flowing tide that will ebb or even a cresting tsunami that will recede." The Boston Consulting Group[2]



If you are responsible for regulatory change management in your organization your views on the increasing pace of published regulation may resonate with this statement – you may be in a perpetual battle with managing the pace and volume of regulation that directly affects your business.

These concerns are compounded with political change and the uncertainty this brings to the regulatory landscape. Seismic political events such as the UK's Brexit decision and the arrival of a US President who is keen on large-scale changes to financial regulation bring their own set of challenges that create more complexity for an industry already struggling to tread water in very choppy waters.

It is not just the volume of new or amended regulations that are being published; the pace of regulatory change is increasing.

Ileana Falticeni, General Counsel and VP, Compliance at Cloud Lending Solutions, believes that this is due to the "transition from traditional rule-making activities to ad-hoc decision-making".

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[2] Global Risk 2017: Staying the Course in Banking / March 2017 published by the Boston Consulting Group https://www.bcg.com/en-gb/publications/2017/financial-institutions-growth-global-risk-2017-staying-course-banking.aspx

Falticeni explains that "10 years ago, we relied on the regulators' rule-making processes to pave our runway for change. Today, regulators provide notice, opinions and interpretations through:

1. Public statements or censure or
2. One-on-one bank reviews that they expect become regulatory market practice, benchmarked in examinations."

Financial services is an industry that is catching up with other heavily regulation sectors including healthcare and energy. Brian Castro, Co-Founder and CEO at crowdfunding platform FundPaaS told Goode Intelligence that, even among other regulated industries that are notoriously resistant to change, "the financial industry has been singularly slow to deploy innovation and novel technologies as assets in responding to the increasing pace and complexity of regulatory change." Castro's experience working both as an attorney in the private sector and as a regulator for the Financial Industry Regulatory Authority has led him to the conclusion that those in the financial services sector are uniquely positioned to realize the greatest benefits of tech-enabled solutions to compliance risk and regulatory burdens.

Complexity in Regulatory Change Management

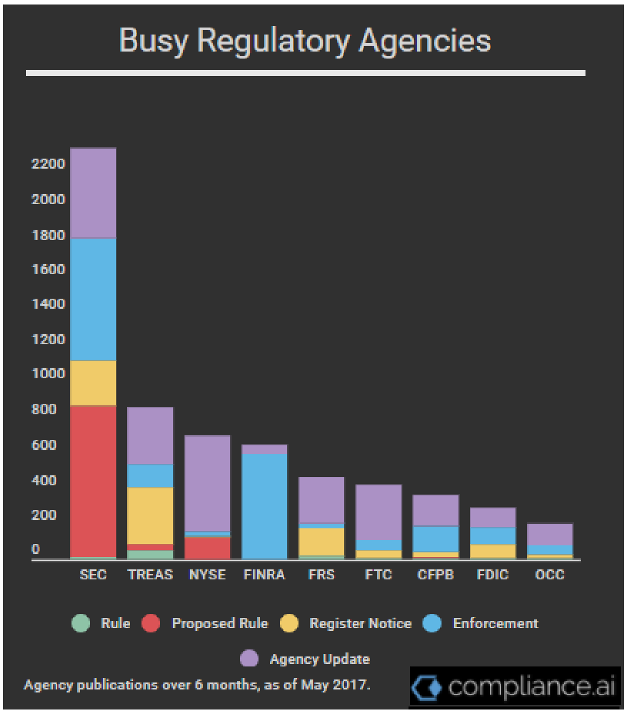
According to a study by PWC, 86 percent of banking and capital markets (BCM) CEOs are either "Somewhat Concerned" or "Extremely Concerned" about over-regulation threatening growth prospects.[3]

The complexity in regulatory change management is leading to increasing amount of time and resources dedicated to it. Financial organizations are relying on manual processes to sift through volumes of regulatory data and this is a heavy burden on resources; both in cost and personnel. A reliance on manual processes to manage regulatory change is risky as it is prone to error, as the next section explains.

[3] 20th CEO Survey / Key findings in the banking and capital markets industry / February 2017: http://www.pwc.com/gx/en/ceo-survey/2017/industries/pwc-20th-ceo-survey-banking-capital-markets.pdf

SHEER VOLUME OF DATA

Sifting through vast amounts of data by analysts can be error prone



High volumes of regulation information and a lack of automation in handling vast quantities of complex regulatory data can be a risky undertaking for financial services providers. This is very relevant for smaller financial services companies heavily reliant on third party specialist firms to gather regulatory information in the form of fact sheets that then have to be analyzed manually by compliance officers.

The combination of information overload and manual regulatory change analysis is creating headaches for many organizations that cannot afford to invest in large specialist compliance teams or automation. The reliance on under-staffed compliance teams to sift through vast reams of complex regulatory data can lead to mistakes – mistakes that organizations cannot afford to make when failure to comply to financial services regulation can lead to financial penalties that can run into the millions, even billions, of dollars.

Rick Dupree, Intermediary Holding Company Operational Risk Manager, VP at Bank of the West believes that "Legal and regulatory obligations (Know Your Customer, SOX, etc.) have forced banks to become very data-centric. As a result, most banks have become experts at data warehousing and even undertaking big data initiatives to leverage these data stores for more informed strategic decisions. Unfortunately, this has not been the case with respect to regulatory data collection and classification. Regulatory data collection by banks typically involves a 'pull' of data by internal employees from various sources (regulator websites, industry white papers and even via internet searches using keywords)."

Dupree feels that this creates pressure on individual data analysts as “the effectiveness of this approach is highly dependent on the individual collecting the data and their understanding of not only the regulatory environment specific to their financial institution but also Boolean operators. Many ‘push’ solutions are offered through vendors but these tend to be expensive alternatives. Even though such solutions can be filtered with respect to results prior to delivery, in-house expertise is still required to assess applicability and to manage any resulting change control process.” He goes to recommend an alternative where “a combination of a ‘pull’ solution with search filtering capabilities along with an AI component that improves search results over time coupled with a few in-house experts to further assess applicability and manage any resulting change control is an ideal approach."

Since the global financial crisis of 2008, banks globally have paid $321 billion for a number of regulatory failings from money laundering to market manipulation. [4]

"Historically, due to the pace of regulatory change and the tendency for banks to cast a wide net with respect to regulatory adherence, regulatory changes have been applied as tactical fixes on top of existing, manual infrastructures rather than through root cause analysis and reengineering of outdated or inefficient existing processes. This has created infrastructures across the industry that have become too complex to manage and too costly to fund, especially when factoring in the current interest rate environment impacting the US banking industry. Most solutions in place today are not scalable and rely on a ‘pull’ of regulatory information from a plethora of sources rather than a ‘push’ of information from a single, reliable source."

Rick Dupree, Intermediary Holding Company Operational Risk Manager, VP at Bank of the West

[4] Boston Consulting Group February 2017

Regulatory Information Quality – Is it Reliable, Can I Trust it and Can I use it?

Linked to the sheer volume of regulatory change information that organizations are receiving daily are a number of very important connected questions that relate to the quality of the data received:

1. Is the information reliable - can you trust the authenticity of this information in a world dominated by 'fake news'?
2. Is the information in a state where you can action or use it?

Is the information reliable and trustworthy?

Fake news is a worldwide issue, influencing elections and causing problems for companies who rely heavily on the reliable news and business information. Regulatory change management functions must be able to trust the source by vetting it to filter out fake news or unsubstantiated claims that affect their business.

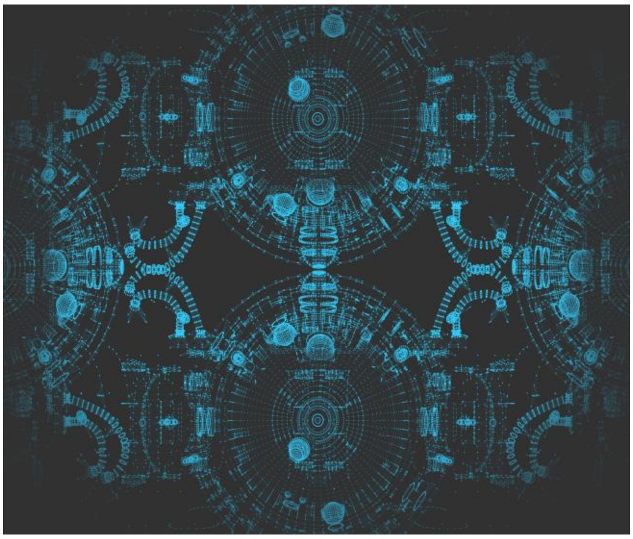
Is the information actionable?

In order for regulatory change information to be useful it has to be actionable. Some compliance functions rely heavily on specialist partners to filter, collate and distribute regulatory change information.

This information is normally received by compliance officers sometimes on a daily basis. A lot of the time, especially with legal and enforcement news, this information is sent as raw data, providing little or no analysis making it difficult to act on. There can be an issue of purely looking at the data, instead of trends, where real insight can be gained.

Goode Intelligence has learnt that compliance officers can turn off these daily updates as they are swamped by tens of emails per day. This is a risk to the organization as vital information pertaining to that business could be missed.

TACKLING REGULATORY CHANGE THROUGH AUTOMATION AND MACHINE LEARNING



To reduce the ever-increasing burden on compliance teams, financial service organizations can turn to new regulation change management technology solutions to automate resource-intensive tasks through machine learning technology.

Just as financial services organizations are increasingly turning to FinTech tools to take advantage of advancements in areas like automation, machine learning and cloud computing, these firms can also turn to the new sector of RegTech to better manage regulation and turn it into an advantage.

Goode Intelligence has discovered that there are four key factors where regulation change management technology improves today's manual-intensive compliance tasks.

Automatic Aggregation

As we have learnt, compliance resources spend too much time organizing information about regulatory documents and their attributes, having to pull them from a large variety of sources.

According to industry surveys over one-third of financial services firms spend an entire day each week keeping track of regulatory change.[5]

Leveraging *expert-in-the-loop* (EITL) machine learning for automating document   frees up compliance professionals to focus their time on the details of actually helping their organizations comply with regulations, rather than just laying the groundwork.

[5] Thomson Reuters, "More Regulations and Fewer Resources Squeeze Financial Compliance Teams, Thomson Reuters Global Cost of Compliance 2016 Survey Reveals", 23 June 2016, thomsonreuters.com/en/press-releases/2016/june/thomson-reuters-global-cost-of-compliance-2016-survey.html Accessed 27 Apr. 2017.

What is *expert-in-the-loop* (EITL) machine learning?

Traditional machine learning involves programming a computer to be able to take in new information and adapt based on those new inputs, rather than only being able to act based on its initial information. Similar to how a human can better tackle issues as one takes in new information and learns from it, machine learning is very useful for addressing ongoing problems and it enables the model to improve over time.

However, rather than leaving predictions entirely up to machine learning models, *expert-in-the-loop* (EITL) machine learning adds a layer of subject matter individual expertise to help improve the model. For example, if a machine learning model cannot identify if a regulation should be classified as applying to certain asset managers, then a human could add the proper tag, and the model would learn from this instance so that next time it is more likely to be able to properly classify the regulation.

Automatic Document References

In combination to automating document aggregation, compliance teams are able to benefit from systems that connect the dots between all this seemingly unconnected information. Document references — especially citations — are the core analytic device in the regulatory domain, so it is crucial to understand the connections between them. For example, a deep understanding of regulations like the Volcker Rule requires understanding of the Dodd-Frank Act, which prompted five federal agencies to issue final rules to implement the Volcker Rule.

Without regulation change management technologies, financial services firms would need an army of analysts to connect the dots amongst all the applicable documents. AI-enabled platforms, however, understand these document references and automatically enable users to see the connections without having to do the digging manually.

Classification

The manual classification of regulatory change information is time consuming and requires common agreement on what classification model to use.

There are also issues with 'pure' machine learning solutions that are reliant on how analysts configure the original model.

An alternative is to introduce expert-in-the-loop machine learning technology that classifies regulatory documents into 'micro-topics' and allowing compliance professionals to confirm that these tags are accurate and relevant. The expert-in-the-loop machine learning capabilities allows the model to learn and get smarter over time, easing the burden on compliance teams while still providing them with a say on the matter.

The expert-in-the-loop machine learning technology bridges the gap between the technical staff that put the models together and the regulatory domain specialists.

Peer Learning and Benchmarking

By sharing a common Regtech tool with your peers, compliance professionals can gain valuable insight into what the industry is concentrating on – the 80/20 rule of investing more time on tasks that are vitally important to your organization.

New or revised pieces of financial regulation can take years to become law. Compliance teams need to prepare for upcoming regulation and prepare the relevant departments that may be affected. This includes responding to legislation that is in 'comment' phase in partnership with senior management.

A regulation change management technology tool that allows compliance professionals to understand what their peers in the industry are working on (while properly preserving privacy) is extremely helpful in allowing these teams to prioritize work. For example, knowing that five peers within similar-sized banks are reviewing a specific regulatory update is incredibly useful. Similarly, noticing an increase in the number of publications related to a specific regulatory topic is an indicator of the topic's importance.

Having this insight rather than combing through the raw data of regulatory documents enables compliance teams to streamline workflows and add value by focusing on the most important tasks.

"To improve, companies need automation:

1. Aggregation and contextualization of data in one place – no searching
2. Organization and configuration of data – ability to connect information with historical rule making and market information
3. Peer benchmarking – what is impacting others in the market
4. AI-driven data – how can analytics support execution of requirements"

Ileana Falticeni, General Counsel and VP, Compliance at Cloud Lending Solutions

THE COMPLIANCE.AI DIFFERENCE

Compliance.ai compliments these factors by providing the following core compliance competencies:

Aggregation: From a comprehensive variety of sources
Normalization: Of millions of documents, citations, rulings, publications
Curation & Classification: Based on expansive EITL machine learning model foundation
Trend analysis: Transform raw regulatory data and peer-review trends into distilled Insight
Personalization and notification: Follow specific regulatory topics

By supporting these core characteristics, Compliance.ai distills the rapidly growing mountain of regulatory information into focused insight.

Compliance.ai offers the fastest way to Search, Monitor, Access, Research and Track comprehensive financial regulatory content.

Using the Compliance.ai SMART platform, compliance officers can streamline their topic-specific searches, get industry insights, and receive the latest regulatory and trend notifications.

Other solutions are either entirely manual, overly reliant on automation, or do not incorporate enough financial topic-focused regulatory insight. Compliance.ai's expert-in-the-loop machine learning models offer the right balance, so that everyone from chief compliance officers, legal counsel and portfolio managers can spend less time dealing with regulation, while gaining the assurance that their unique input matters.

Learn more about **Compliance.ai** and their solutions, tailored for various financial services regulatory compliance stakeholders, who seek focused regulatory insight.

ABOUT GOODE INTELLIGENCE

Goode Intelligence was founded in 2007 and has built up a strong reputation for providing quality research and consulting services in cyber security, compliance and risk.

For more information on this or any other research please visit **www.goodeintelligence.com**. For sales enquiries please email us at sales@goodeintelligence.com.