WHITE PAPER | PREPARING FOR THE LIBOR TRANSITION

Replacing the most important number in the world

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In July of 2019, Andrew Bailey, chief executive of the UK's Financial Conduct Authority (FCA), which regulates LIBOR, warned: "The base case assumption should be that there will be no LIBOR publication after end 2021… Transition – and transition comfortably before end-2021 – is a better choice." [1]

LIBOR serves as a reference rate for an estimated $350 trillion of loans, securities, and derivatives worldwide, and LIBOR replacement will have the greatest impact on banks and other financial service firms, as well as capital-intensive companies, such as those in manufacturing, energy and real estate. For these firms, identifying the millions of contracts that have referenced LIBOR is an enormous undertaking, and repapering those contracts adds a challenging step in the LIBOR transition process.

The decision to phase out LIBOR followed the 2012 rate-fixing scandals and came after numerous reform attempts failed to restore activity for unsecured interbank term borrowing. New rules following the Global Financial Crisis exacerbated this downward momentum, and scant activity in the market threw the sustainability of LIBOR into doubt as a benchmark rate. Although the decision represented a huge shift across financial markets, regulators concluded that ending LIBOR was the right path forward.

In July 2017, the FCA officially announced it would no longer persuade or compel panel banks to submit the rates required to calculate LIBOR and that LIBOR will be completely phased out by the end of 2021. Since then, regulators have issued increasingly urgent warnings for companies to prepare well in advance for LIBOR transition.

Timeline of LIBOR's recent history[2]

2005-2011	2012	2013	2014	2015
2005 Presumed start of LIBOR manipulation. **2007** Global Financial Crisis emerges.	**JUN 2012** LIBOR scandal breaks.	**FEB 2013** UK Govt establishes Hogg Tendering Advisory Committee for LIBOR and opens tender process.	**JAN-APR 2014** Bank of England, Swiss National Bank and Federal Reserve join LIBOR Oversight Committee.	**MAY 2015** IBA publishes feedback statement on the evolution of LIBOR, including the availability of a waterfall of calculation methodologies.
2008 BBA publishes LIBOR review.	**SEP 2012** Wheatley Review of LIBOR published.	**MAY 2013** IBA submits tender for LIBOR. **JUL 2013** IBA wins LIBOR tender.	**FEB 2014** IBA becomes authorised by FCA and starts administrating LIBOR. **OCT 2014** IBA publishes first LIBOR position paper.	**JUL 2015** IBA publishes second position paper on LIBOR, proposing the inclusion of further transaction data. **OCT-NOV 2015** IBA hosts roundtables with central banks and other stakeholders to discuss second position paper on LIBOR and future reforms.

In January 2020, two and half years after the FCA first announced that LIBOR would be phased out, regulators began asking banks and other financial services firms for evidence of their preparedness, even though LIBOR's replacement has not been agreed upon.

Against the backdrop to this lack of clarity, large financial firms are pressing regulators for more guidance. Many see the upcoming deadline as unrealistic and believe that only the largest organisations may have the manpower and resources to meet the requirements in time. As a result, some industry experts predict the transition will be more complicated and take longer than anticipated.

How prepared are we?

Business leaders are generally aware of the broad challenges ahead; however, amidst so much uncertainty, structured plans can be difficult to formulate. To guide clients through this complex transition, advisory firms like Accenture and PWC have developed action plans which include stages for assessing risk, managing stakeholder communications, changing existing business structures, and testing new rates.

The first 3 parts of PWC's 8-step LIBOR transition plan[3]

COMPANIES CAN MITIGATE THE RISKS OF LIBOR REPLACEMENT WITH A COMPREHENSIVE TRANSITION PLAN:

- Establish a program governance structure with appropriate executive leadership and board oversight, including stakeholders from all impacted businesses and functions across the company (domestically and internationally).
- Manage and monitor transition progress.

IMPACT ASSESSMENT

- Conduct a comprehensive assessment to identify the company's exposure to contracts that reference LIBOR.
- Understand transition impacts and develop a strategy for remediation activities.

NEW BENCHMARK MARKETS & STRATEGY

- Monitor and assess ARR market developments.
- Develop a plan for entering into and managing new ARR contracts.

Accenture also surveyed 177 companies to understand their key challenges and found that although "84%… have a formal LIBOR transition plan, the level of preparedness is low with only 18% of respondents describing their plans as 'mature'." [4]

Unfortunately, with the deadline fast approaching, time is running out for one of the very first and most time-consuming stages outlined above: assessing the level of risk and exposure.

Crucial Starting Point: Identifying and analysing LIBOR exposure

With the wide reach of LIBOR into many different types of products, identifying and analysing all existing contracts that have used LIBOR is a huge task. The global financial industry has never experienced a transition on quite this scale or level of complexity. That makes speeding up or automating time-intensive activities both necessary and challenging.

The task before financial institutions is to identify their existing and issued financial products and underlying documents to assess:

1) Whether the loan or financial product will mature prior to 2022;
2) If they will not expire, identify whether LIBOR is referenced; and
3) Re-negotiate and amend those agreements with a new rate.

At this late stage, manually identifying and remediating each contract would not only be costly but, for many companies, impossible. Some estimates predict that companies will have to spend about $155 billion on technology and other resources to replace LIBOR.[5] Additionally, depending on the size of the company and the number of contracts in place, the process could take months or years.

How are companies leveraging existing tech solutions?

In October 2019, KPMG published an article, “AI offers the smartest solution for transition to RFRs,” in which the firm concludes that “given the sheer enormity of the problem, automation is being seen as the obvious practical solution, promising huge time and cost savings thanks to a level of speed and accuracy that manual processes simply cannot hope to match.”[6]

The good news is that a growing number of technology solutions can help speed up the document review process. Due to the complexity of LIBOR transition and remediation, these solutions will still require human involvement for higher-level analysis, but they are helping to bring the looming deadline into a more realistic time-frame for those who are underprepared at this time.

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> **WALL STREET JOURNAL, SEPTEMBER 2019**

AI and machine learning in contract review

A leading solution in this space is eBrevia, a contract analysis software company that applies machine learning to quickly and accurately extract key information from documents. As a subsidiary of Donnelley Financial Solutions (DFIN), eBrevia is well placed in DFIN's work with major financial institutions to advise on cost-effective and speedy contract analysis solutions as the clock continues to tick on replacing LIBOR. eBrevia also partners with a number of leading service providers, including PWC, who have deep experience in LIBOR remediation, as well as expertise in eBrevia, to deliver end-to-end solutions to clients.

To understand how the technology works and why it is well-suited to assist in LIBOR related contract review, eBrevia co-founder, Adam Nguyen, shared some of his insights on this work. Before Nguyen was a co-founder of eBrevia, he was the Chief-of-Staff and Legal Officer of Vantage Properties, a 350-person real estate private equity firm. Previously, he practiced law at the firms of Paul, Weiss and Shearman & Sterling, where he focused on private equity and hedge fund formation, as well as mergers and acquisitions. Nguyen is a frequent contributor to thought leadership on LIBOR transition, as well as artificial intelligence, innovation, and automation.

Q&A

Given the large number of documents involved in LIBOR repapering, how can you analyse and amend them in time and cost-effectively?

Traditional, manual review will not get the work done in time or within any reasonable budget. Companies, including PwC, MUFG, Baker McKenzie, Capita and others, have leveraged eBrevia's artificial intelligence to augment the analysis of their documents and save up to 90% of time.

With respect to LIBOR, eBrevia is used to analyze hundreds of contracts in seconds and automatically identify whether LIBOR is referenced. Finding LIBOR references in your documents is one of the first steps to LIBOR repapering.

What else does eBrevia do with respect to LIBOR?

Out of the box, eBrevia is pre-trained to automatically extract LIBOR-related provisions in contracts. Users can upload their current and legacy contracts to eBrevia and quickly see a report identifying their LIBOR exposure. In addition to identifying how LIBOR is defined in the agreement, eBrevia also directs users to any "Fallback" interest rates should LIBOR be unavailable, how such "Fallback" language is triggered, as well as many other critical data points to the LIBOR transition process. Users can then quickly determine the LIBOR exposure in their contracts and the economic risks associated with the transition away from LIBOR. With this knowledge, users can efficiently determine to what extent they need to amend or repaper their contracts with the appropriate counterparties and seek to do so.

Can you customize eBrevia, or is it restricted to certain formats?

Although eBrevia comes pre-trained to recognise hundreds of types of clauses and risks (not restricted to any format), what users really like about eBrevia is the ability for non-technical users to customize and train the artificial intelligence system to meet their workflow needs. From as few as 6 examples, users can train eBrevia to understand industry-specific clauses and concepts. In addition to eBrevia's pre-trained LIBOR provisions, users can customize eBrevia to identify and abstract many other clauses or concepts related to LIBOR.

The ability to train or customize eBrevia is a very useful feature. Could you elaborate on how this is accomplished? Is it a resource-intensive undertaking?

In the last decade, artificial intelligence has come a long way, especially in the document analysis space. Using natural language processing and machine learning technology, eBrevia is able to learn from its users in a powerful way. Imagine if you hired an assistant who could learn complex legal concepts, retain that learning for future projects, and grow smarter with additional learning. That's eBrevia.

eBrevia learns from its users by processing examples. Non-technical professionals, including lawyers, consultants and accountants, show eBrevia examples of clauses or concepts that they wish to identify from large volumes of documents. As mentioned, from as few as 6 examples, eBrevia learns to recognize the clauses or concepts. When users upload new documents to the system, eBrevia quickly "reads" the documents and abstract the relevant clauses or concepts without relying on keyword searches or a rules-based approach. Essentially, eBrevia mimics human intelligence and how humans learn and applies that learning to vast quantities of documents or data. Customizing or training the system could take as few as 1 day.

The complexity and wide reach of the LIBOR transition makes customizing an AI tool an extremely important feature. eBrevia's self-training feature – rooted in machine learning – has made the platform an ideal choice for financial institutions, law firms, audit and consulting firms, and other LIBOR stakeholders on their LIBOR transition processes in different ways. The solution is not a one-size-fits-all approach, but rather different organizations have adapted eBrevia in the way that best suits their own needs, often in consultation with eBrevia's product and workflow specialists.

For instance, some users will rely solely on eBrevia's pre-trained provisions to automatically extract LIBOR-related provisions in contracts. Others will utilize eBrevia's customization feature to train the system to extract LIBOR-related provisions according to their own specific criteria, often from extremely lengthy contracts. When companies are able to customise eBrevia according to their own requirements, the system becomes an extension of their own unique LIBOR transition playbooks.

Finding an AI solution that can be easily customized to meet specific or shifting requirements is a critical feature for meeting both an organization's long and short-term needs. The end of LIBOR is not likely to be the last sweeping change that will require a complete review of existing contracts and other documents.

In the last decade, several major regulatory and market-driven changes, such as GDPR, Brexit, and IFRS 15/16 compliance, have precipitated the need for extensive review and repapering of existing agreements on a massive and costly scale.

Employing AI-powered technology that can quickly find relevant information has become a necessity for managing on-going due diligence and document review work in the most cost-effective and efficient way possible. Reducing errors and increasing accuracy is another critical need when navigating the complexity and scale of these transitions. AI-powered document review helps firms manage the requirements and choosing a solution that is easily customized helps leverage the full benefits of the technology.

1. SIFMA, "LIBOR Transition Briefing: The Transition to Alternative Reference Rates."
2. Intercontinental Exchange, "LIBOR: A Path to Global Reform."
3. PWC, "LIBOR – Act Now on Replacement," Dec 2019.
4. Accenture 2019 LIBOR Survey: Liboration.
5. Wall Street Journal, "Companies Slow to Move Away From Libor," Sep 2019.
6. Frontiers in Finance, Issue 61.

About Donnelley Financial Solutions (DFIN)

DFIN is a leading global risk and compliance company.

We're here to help you make smarter decisions with insightful technology, industry expertise and data insights at every stage of your business and investment lifecycles.

As markets fluctuate, regulations evolve and technology advances, we're there. And through it all, we deliver confidence with the right solutions in moments that matter.

About eBrevia

eBrevia, a DFIN company, is a leading provider of AI-powered data extraction and contract analytics software.

Corporations, law firms, audit/consulting firms, financial institutions, and commercial real estate firms leverage the software for due diligence, tracking contractual obligations and risks, compliance and lease abstraction. With the most precise AI in the industry, our software reduces document review time by 30-90%.

To find out more about eBrevia and DFIN's LIBOR Transition Solutions:
Visit **DFIN**solutions.com | Email us **dfin@dfinsolutions.com**