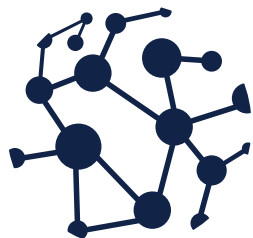


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**CENTRAL BANKING**

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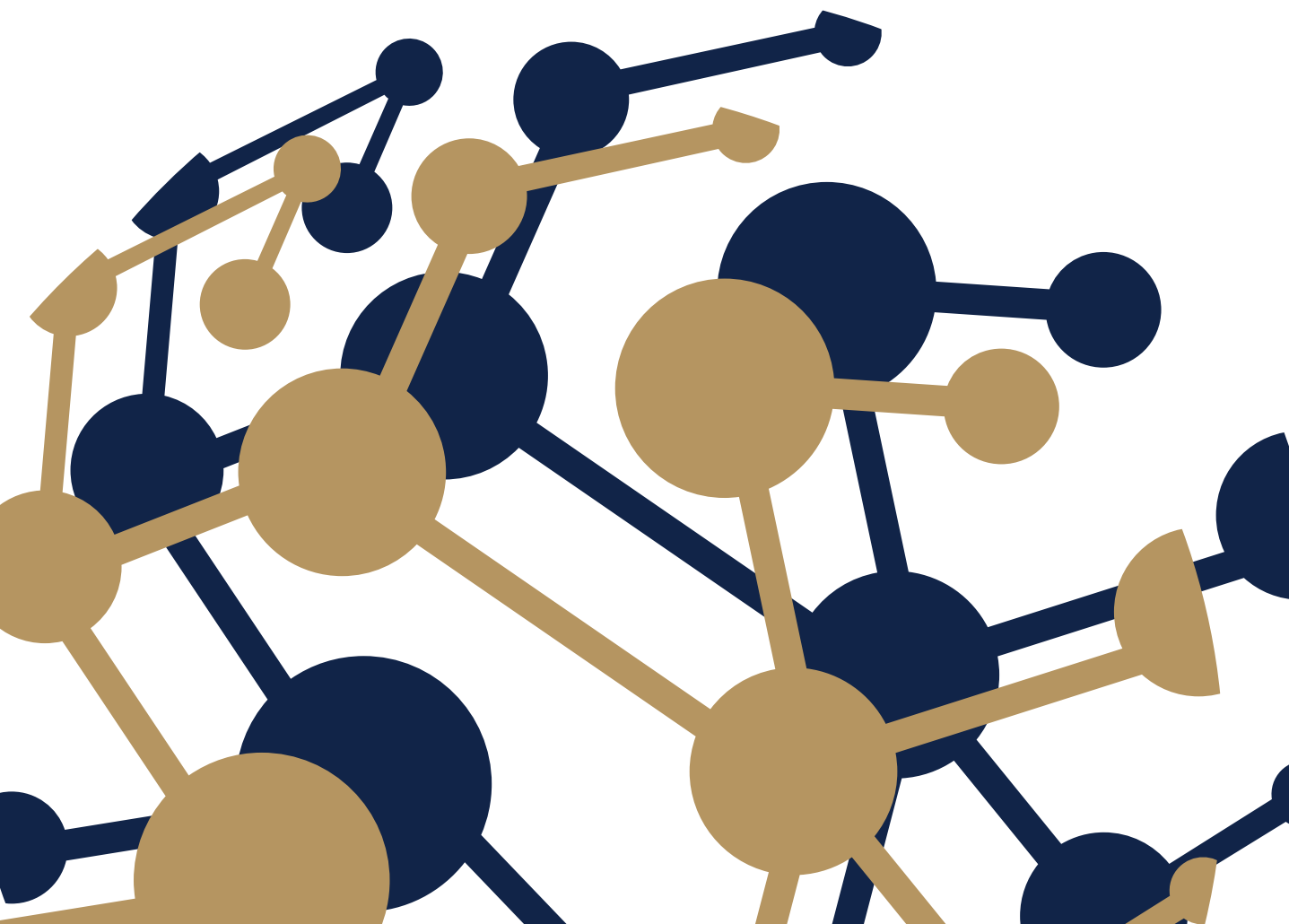


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# De La Rue

The cash industry is in a state of flux. While electronic means of payment have disrupted the cash landscape, the volume of cash transactions continues to rise. Today 85% of all transactions are made with cash. But there is no doubt cash operations have been disrupted, and central banks are now focusing more on one of their biggest challenges: forecasting future demand for cash.

On hand is one of the world largest commercial banknote services providers, De La Rue. With a customer base of over 140 issuing authorities worldwide, De La Rue has provided cash services for more than 200 years. It employs over 2,500 people across four continents. But, like the industry, it has had to evolve.

In 2012, De La Rue launched its new service DLR Analytics – a tool to utilise cashflow data to help central banks get the most out of the currency lifecycle. A core component of the software allows central banks to track banknotes as they move through the economy, working out its lifespan and, subsequently, the demand for cash.

De La Rue's focus was to provide central banks with a standardised approach to cash-cycle data analysis. Historically, this has been a problem as central banks use differing processes, making global comparisons near impossible. More than 70 central banks are now signed up to use the service, which allows them to make informed decisions about substrate choice and when to order new stocks of specific denominations.

To ensure the platform's smooth functioning, De La Rue has deployed a team of statisticians that collects and anonymises the data provided to the DLR Analytics service by central banks or government agencies, so users can securely see their own data compared to global or regional data. This means issuing authorities that might be considering a change of requirement can look at what previously happened when similar changes were made elsewhere.

De La Rue has striven to ensure central banks' data is secured within the system. DLR Analytics is encrypted with a series of regularly updated cyber walls. The service also comes with a forecasting toolkit, which allows central banks to better predict banknote demand. The tool uses information from open data sources to provide forecast models.

Since May 2017, the service has been available via a web interface, built in-house by De La Rue and which includes monthly webinars and an online user group. Subscribers can still access De La Rue consultants for specific support, but the vast majority of questions are now answered in a 'self-service' manner by accessing the software.

The success of the tool is evident from changes central banks have made following its use: tweaks to ensure the cash cycle is efficient, while helping the community move towards a common language and methodology. □



Martin Sutherland,  
chief executive

# An informed approach to banknote security and durability

De La Rue explains how its data consultancy service, DLR Analytics, allows central banks to ensure notes in circulation are secure and durable, and offers value for money in spite of increasingly prominent alternative payment solutions. By facilitating means for collaboration, members of the service can share their experiences and lessons learned to promote better-informed decision-making.



De La Rue (DLR) is the world's largest commercial banknote provider, servicing more than 140 banknote-issuing authorities worldwide. Since 2012, its DLR Analytics data consultancy service has provided central banks with insight and understanding about their cash cycles and banknote lifetimes, and has carried out forecasts of projected banknote demands. More than 70 central banks are currently signed up to DLR Analytics, with more joining every month.

Contrary to perceived wisdom – and in spite of growth in alternative payment solutions – the volume of banknotes in circulation continues to grow, at 3–4% per year. Coupled with this growth in demand, central bank teams are faced with the need to ensure notes in circulation are secure and durable, and the perennial requirement of delivering value for money. These issues have led to an increased number of central banks shifting some or all of their denominations to polymer – most recently, the Bank of England, Scottish and Irish banks.

Central banks have always collected data about their banknotes and cash cycles; however, each has historically used different processes, making accurate global comparison impossible. DLR Analytics is a purpose-built solution that provides central bankers with a standardised approach to cash-cycle data analysis. DLR Analytics enables central banks to make data-driven decisions on issues relating to their cash cycle.

Users of DLR Analytics can better monitor their domains and make better-informed decisions about their banknote issuing policies – for instance, the quantity of banknotes to order and whether they need to be more durable.

Additionally, a team of statisticians at De La Rue aggregates and anonymises the data provided to the DLR Analytics service so users can compare their own data with global or regional data. This allows central banks considering a change of specification to examine historical outcomes of comparable central banks making similar transitions.



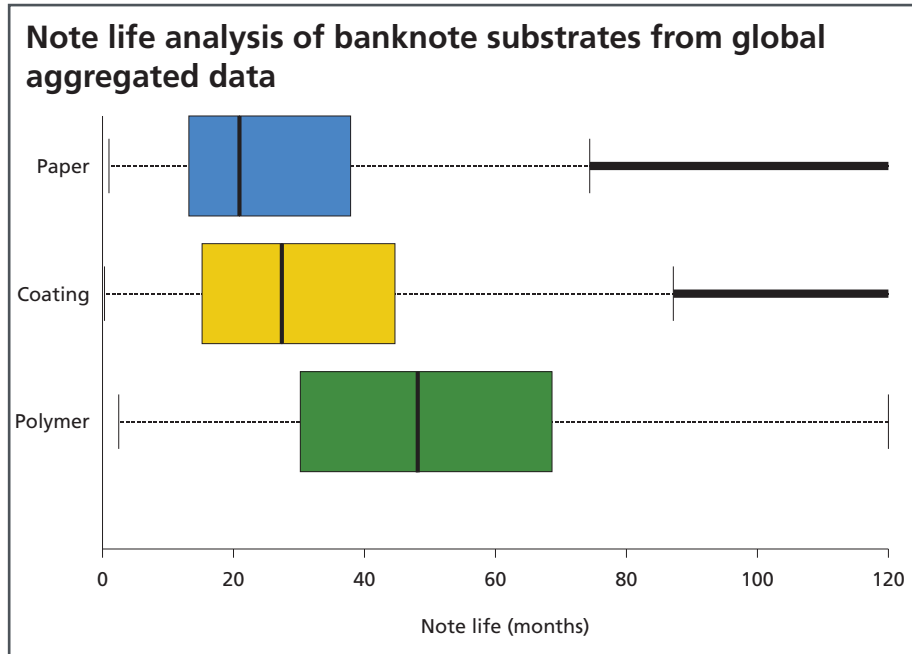
Cash Cycle Partnership seminar attendees, February 2018

Ruth Euling, De La Rue’s global director of currency, says: “As central banks around the world look to deliver real value for money, robust data will play an increasingly pivotal role. Issuing a new currency series is a significant investment. We are seeing growing interest from customers in a more fact-based and data-driven approach to launching new series and choosing new substrates and security features, and DLR Analytics is helping us prepare far more robust business cases in partnership with our central bank customers. To build the case for change, there is a series of data points and comparisons that customers now have far better access to.”

To build a business case of this nature, issue departments within central banks must consider a number of factors, including how the current denomination structure performs in terms of volumes, how it is forecast to change over time and, in terms of quality and durability, where it will look to understand how long different substrates would normally last in specific and comparable market conditions.

Emma Grey, product lead for DLR Analytics, says: “The strength of DLR Analytics is that it is capable of reviewing historic data and predicting future trends, and looking at country-specific data in the context of truly global insight.” This blend of country-specific data and anonymised global comparisons helps issuing departments understand current performance through replacement rates, circulation velocities and the note lives of their denominations, and provides the comparison of performance for categories such as circulation region, substrate or banknote usage. The ability to forecast future circulation volumes and estimate

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new banknote demand has been made more compelling by allowing users to decide whether it is more effective to focus on 100% replacement or a more staggered model for a new banknote launch.

Grey adds: “The benefit of scenario planning and fact-based analysis helps ensure issuing departments can write a far more robust business case to underpin their recommendations based on local and global insight. We are already working with customers across the world to build these more robust cases for change.”

In addition to the support for large-scale new series introduction, DLR Analytics can provide better predictability over in-life banknote demand. The tool retrieves information from open data sources to provide more robust forecast models to predict requirements for new banknote demand. Because one of the inputs DLR Analytics uses is monthly data from central banks, it can add real granularity to forecast planning. Grey continues: “For an issuing department to have instant access to this forecasting data helps them make effective decisions on the right time to order the appropriate volumes of existing denominations, when to introduce a new denomination and how to manage the mix of security features within their denomination structure”.

A unique feature of DLR Analytics is the robust culture and practice of partnership that underpins it. Euling comments: “De La Rue has built its business for over 200 years by building deep relationships with its global customers. Furthermore, central banks have always been strong proponents of shared learning. The way we have launched DLR Analytics brings these two driving forces together.”

All customers of DLR Analytics are members of the Cash Cycle Partnership – a group driven by a shared desire to learn from one another. Since May 2017, the standardised DLR Analytics service has been available via an in-house web interface for users to contribute directly to the global dataset. In addition, the DLR Analytics team runs monthly webinars and an online user group, and De La Rue hosts face-to-face events for members of the Cash Cycle Partnership to share lessons learned and help shape future developments.

For partnerships of this nature to function effectively, trust in the security of the data is paramount. DLR Analytics is a secure environment for users to access aggregated data and insight, but only they can access their own personal data. It is also critical that users have access to experts and the ability to undertake interrogations of their data. Cash Cycle Partnership members can work in collaboration with De La Rue consultants for specific support or bespoke consultancy, but the vast majority of questions can now be answered in a self-service manner by accessing the software. The models have all been validated independently by Imperial College London and substantiated empirically with multiple central banks.

This principle and practice of partnership is also shaping the next phase of product and software development. The recent launch of the Global Fitness Standards project stems back to insights from the user group. Grey says: “At our first meeting of the Cash Cycle Partnership, the users discussed their own local experiences of fitness standards for notes in circulation. What became clear to us was the divergence of the approach across different central banks. As a result, we are creating a large, aggregated and anonymised dataset on the variation of fitness standards regionally and globally.”

Armed with this data and the insight it contains, individual central banks can now optimise their approaches to fitness standards – both in terms of the measures they collect and the actions they can take as a result. This ensures notes in circulation will be of a higher quality in the long run, and banks can better understand the in-life performance and quality of features without the significant capital outlay associated with investment in high-speed sorters. It also provides them with a fact base that will help them improve their definition of future specification requirements.

Since its launch, DLR Analytics has grown rapidly and has generated significant interest across the central banking community. On the tool’s progress to date, Euling comments: “DLR Analytics provides unparalleled fact-based insights to help make more informed decisions. It is built on the best traditions of partnership and shared learning, and brings those core values to the heart of decision-making in a changing world. We are only scratching the surface of the potential benefits, and from the engagement we have witnessed in the past 18 months, I have no doubt it will be pivotal and transformational in the way that central banks manage their cash supply chain for years to come.” □