

Koenig & Bauer Banknote Solutions – Bridging the Physical and Digital for a Better Cash Cycle

Koenig & Bauer Banknote Solutions (KBBNS) recently announced that it is moving into the cash innovation space by developing a family of ‘bridging technologies’ to enable the physical banknote product to connect to digital data ecosystems. One example of this technology is the ValiCash application that recently won the CashEssentials Best New CashTech Innovation Award.

But what exactly is KBBNS proposing and why is a company that is principally involved with the banknote product now moving into the service system or cash cycle?



Julian Schubert (left) and Mark Stevenson (right).

Currency News™ recently caught up with Julian Schubert (JS), Director of Data, Vision and Authentication Solutions, and Mark Stevenson (MS), soon to become Market Development Manager, at KBBNS to find out more.

Q: *Having built a solid reputation in developing banknote printing technology for over 70 years, why is K&BNS now so interested in how banknotes are moved, used and accessed in society?*

JS: Primarily, to support the cash user... the public who use and, according to surveys and research material, will continue to use the products we develop and produce every day.

Secondly, to support cash cycle stakeholders in their efforts to improve cash efficiency and by driving down the cost and ecological impact of cash in circulation. I think it's about time that we began to talk openly about the elephant in the room...because that elephant has been there for a very long time and some of us have ignored it up until recently.

The cost (and ecological impact) of cash in circulation is having a severe impact on access to and acceptance of cash in many parts of the world. If this trend continues, the public will be afforded less choice in terms of what payment tools are available to them.

We believe that there is space for a healthy co-existence of all payment tools in our

society, but one should not be promoted at the expense of another. It all comes down to choice, and the public (and businesses) continue to exhibit a strong preference for cash today and will continue to do so in the future. We see cash as a payment tool of choice for society and we aim to ensure that all members of society, no matter where they are in the world, continue to be afforded choice in terms of how they wish to pay.

Cash is not a niche product, reserved exclusively for vulnerable social groups or the digitally disengaged. It is without doubt the most resilient, robust and flexible payment tool available and this is why people, across all social, demographic and economic strata, choose to use it amidst a great deal of alternative payment tools.

Q: *How do you intend to enable change in the way cash is organised and managed in the cash cycle?*

JS: We are very clear and realistic about our role in this process. The scale and scope of the challenges involved in improving the way cash is moved, accessed and used are enormous and far too big for any one organisation to solve. So, our role in this process is twofold.

One is to break down silos and catalyse cross cash community exchange and collaboration on the subject of cash evolution. This is an absolutely necessary first step, since many sectors of the cash industry are operating in vertical silos and the fragmented nature of our community must be addressed to enable real, significant innovation and change.

The other is that we aim to become an enabler of such innovation by providing a family of new ‘bridging technologies’ that will allow the physical banknote product to connect to digital data ecosystems, opening up a multitude of opportunities to radically transform and improve the associated banknote service system.

In simple terms, we will provide the toolbox for innovation, but the final solutions will be developed by existing and emerging cash cycle actors as they develop new business models and processes to serve the growing needs of the banknote user.

Q: *In concrete terms, what type of technologies are you developing?*

JS: Well, I guess this is the big question and the answer is quite simple. For over 15 years we have been working on development projects to exploit banknote data and use this data to improve how banknotes are organised and managed in society, but also to move banknotes into

new market spaces and use cases, such as on-line or remittance payments.

While digital data ecosystems have considerably evolved over this timeframe, two big questions remained open; how to connect a banknote to a data ecosystem and why...what are the use cases, what can be achieved? We are bringing two distinct yet complementary technology families to the cash community, namely Cash Utility Technology (CUT) and Banknote Programmability Technology, enabling the banknote to move into a variety of new spaces.

Both these technologies will play a fundamental role in supporting cash but in different ways.

Our CUT is effectively a toolbox of the previously mentioned ‘bridging technologies’ to enable cash cycle innovation by providing real time data on where banknotes are, who needs them and what is the best way to move them from point A to point B via a shared data ecosystem.

This milestone technology stack is the missing link for cash cycle transformation and has the potential to replace the highly fragmented and centralised cash cycle models of today with a retail or community-layer cash cycle, which is far more efficient and sustainable.

Our Banknote Programmability Technologies are focused on leveraging the connection between the physical banknote product and digital ecosystems to take the banknote into new and exciting use cases.

Today, it is possible to use a physical banknote in a digital environment for on-line payments and even remittances without compromising user anonymity. And currently these market spaces are being monopolised by private money. Our technology might enable central bank money to be directly used in a marketplace that today exceeds \$1 trillion per year, with a projected CAGR of almost 40% to 2030.

Connecting banknotes to a data ecosystem does not at all equate to a loss of anonymity of privacy for the cash user. Today, data driven technologies can provide a hierarchy of data users with a wide variety of information to improve or create new processes, enabling significant positive change in cash management.

We need to rethink the way we see data and its relationship with cash and the cash user. Data can make great things possible. It is our friend and not our enemy and can be exploited to make things better while preserving the fundamental and distinguishing characteristics of cash.

Koenig & Bauer Banknote Solutions *(Continued)*

Q: *How will these technologies play a role in improving the way banknotes are managed in the cash cycle?*

MS: Simply put, they will provide visibility on where banknotes are, what condition they are in, which denomination they are etc.

Now if we host this data on a controlled-access shared data platform, regulated by the national central bank, cash cycle actors can begin to radically change the way they operate by optimising cash management.

The high degree of industry and service fragmentation built upon proprietary cash logistics platforms between cash management companies, retailers and commercial banks can be replaced by highly efficient service sharing business models which ultimately deliver a win-win result for the industry and the public.

As new cash cycle models evolve, opportunities for actors to change their business models and form new partnerships will increase as they innovate the way to manage supply and demand. Central banks will have greater visibility on the general state and health of cash in circulation and the public will benefit from higher cash accessibility and acceptance.

Our technology is all about enabling this type of positive change.

Q: *Given this new direction, how do you think your customers will feel about you taking a more active role in cash efficiency and sustainability?*

MS: Good question! I would like to think that they will understand the inextricable link between producing the banknote and using the banknote.

The upstream banknote production industry has achieved much in terms of improving the banknote product and associated manufacturing processes. In fact, the process costs and ecological impact of printing banknotes have reduced by about 50% since the 1980s. Banknotes have also become more functional, secure and enjoy higher circulation lifetimes. Today we are at a point where the average cost of keeping a banknote in circulation is about 200 times higher than its manufacturing cost.

While some of these costs are absolutely necessary to ensure access and acceptance of banknotes, much of the cost and associated ecological impact are a direct result of the current fragmented cash management landscape and centralised banknote recycling. So, if we want to make banknotes sustainable and viable in our emerging multi-payment tool world, they must be able to compete and this means improving the way we move, access and use them.

We are confident that our customers will see the logic and necessity of us taking a clear position on the evolution of both the banknote product and the banknote service system and support our initiatives in this space.

Q: *How do you plan to establish and position yourself in this new marketplace among established players and new CashTech innovators?*

JS: That's actually really easy to answer. Our role in this space is to enable and support innovation by established and new players. We will do this by providing a toolbox of bridging technologies that will enable these players to develop new ways of managing cash, based upon the availability of data.

We have absolutely no intention of bringing final solutions or applications to this market. Our approach is comparable to a smartphone operating system manufacturer. They provide a toolbox and a platform allowing developers and innovators to create value-adding services by combining the hardware (smartphone) with the software (AppStore). In this way, we will provide the tools, demonstrate what is possible and hopefully, inspire the cash community to exploit the opportunities that exist in the cash cycle transformation marketplace from the retail layer all the way up to the central bank.

Q: *What do you believe are the biggest challenges you will encounter in your efforts to improve cash efficiency and why?*

MS: I think there are two major challenges ahead of us.

First are central bank recycling regulations and frameworks. Our technology toolbox effectively allows delegation of much of the cash recycling function right down to the retail layer, where banknotes are used and needed most.

At the moment, many central bank regulations limit or even preclude certain types of retail layer recycling. Many of these regulations were created at a time when technology did not exist to perform retail layer local or community recycling and were therefore clearly necessary to support and protect the public.

Now that technologies exist to perform retail layer recycling for authentication and fitness/quality purposes, while at the same time providing process and product integrity and multiple knock-on benefits throughout the entire cash cycle, perhaps the time has arrived to revisit these regulations and change them to enable the type of significant positive change we are all trying to achieve.

The second major challenge will be to bring the wider cash community together. Currently we are still working in silos

with limited exchange and collaboration between organisations involved in the various parts of the cash cycle.

The banknote production community rarely exchanges with the cash management community. The cash innovation and CashTech communities rarely collaborate with BankTech, POSTech or even cash logistic platform developers. We need to create a platform to enable and facilitate this type of exchange and collaboration.

Most of the laudable success stories in terms of improving cash cycle efficiency have been achieved without cross community collaboration. Just imagine what can be achieved when the cash industry, together with the central bank community, begins to completely rethink the cash product and its associated service system as it is today.

The future will not necessarily be built upon the old way of managing cash in society or improving legacy processes and technologies. It will be built upon partnership, open innovative and future-thinking, with data acting as the key to making this new future possible.

Q: *What makes your approach to improving cash efficiency and sustainability different to the growing range of cash innovation initiatives underway in different parts of the world?*

JS: I think I probably already answered part of this question earlier. Our approach is different for a number of reasons.

Firstly, because it is based upon a radical model change and not incremental step changes within existing models. Much of the innovation underway is taking place within the limits of existing business models and simply making inefficient processes better. We are proposing something entirely different. Instead of improving existing processes, why not take a more holistic and end-to-end approach to cash cycle transformation. Rather than improving existing processes, we believe the time has arrived to leave many of these processes behind and develop an entirely new cash cycle model based upon access to real-time data. Data really is the missing link here.

Secondly, our approach does not seek to simply push friction from one stakeholder to another. In other words, we are not endorsing the closure of commercial bank operated ATMs and their replacement with privately operated ATM networks. This may improve things but not on the scale possible.

Our real time data-driven approach is based upon the cash community taking a collective responsibility for and ownership of the problems existing in the cash cycle.

Koenig & Bauer Banknote Solutions *(Continued)*

The collective approach will ensure that evolution takes place in areas where it is needed most, and established actors in these spaces will have the opportunity not only to marginally change their business model, but fundamentally reshape them, create new business partnerships, embrace or develop new technologies and effectively build a new future for cash based upon cross-community collaboration on an unprecedented scale.

Q: *Do you think you still have time to ensure a place for cash among the constantly emerging and evolving range of digital payment tools out there?*

JS: Absolutely! Without boring readers with a plethora of statistics and reports citing the fact that demand for cash remains at high levels and will continue to do so for a long time, all evidence suggests that cash is here to stay. If our community can develop ways to make it easier to use, access, move or take it into new market spaces, the future is very, very bright! Over 80% of the world's population depends upon cash for their day-to-day

activity. Even in parts of the world where cash dependency is lower, cash provides a host of unique user attributes that drive demand. People want to use cash all over the world. In most countries, only a few percent of people want to imagine a cashless society.

The heavily reported banknote paradox clearly illustrates this, and I believe that in our highly digital world, other intrinsic physical cash characteristics such as privacy, no requirement for connectivity, instant trust and finality of payment will continue to fuel demand.

The global payments market is all about competition and choice. So long as we can direct cash innovation and evolution in a direction that makes it more and more competitive, we will also ensure that the public continue to be afforded the power and freedom to choose whatever payment tool makes sense for whatever type of transaction.

It is as simple as that; cause and effect, our job, our community's job, is to build upon all the things that already make cash

unique and simply ensure its ongoing evolution. We have done this successfully for almost 100 years, but the rate of innovation going on in the cash cycle today far exceeds anything we have seen in the past.

Q: *How can people find out more about your plans to innovate how banknotes are used, moved and accessed in society?*

MS: A good starting point would be to download a copy of our 'Cash Innovation' white paper released this month. Here you will find out a lot more about our vision of the future of cash and what role we will play in this space.

This white paper is basically a call to action for our community and marks the beginning of a new conversation around cash evolution, so the more people who join this exchange, the more productive and enriching it promises to be.

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To find out more or to receive a copy of the Cash Innovation white paper, email cash-innovation-bns@koenig-bauer.com.