MINT NEWS QUARTERLY

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Remote Maintenance with Smart Glasses – Practical Experiences



At the Commonwealth Mint in Birmingham the technician is using his smart glasses in order to get to know all the wrinkles using their latest S&K TMA-350. In the background two new S&K TMP-250 delivered in May 2019 (©Commonwealth Mint).

When Sack & Kiesselbach investigated the new opportunities offered by smart glasses regarding maintenance work carried out via a computer in Meerbusch, they had no idea how quickly COVID-19 was to make international travel impossible...

'Actually', says Markus Schlein, CEO of Sack & Kiesselbach, 'we were only looking for a way to make remote maintenance easier. It's so stupid to fly thousands of kilometres only to discover that the problem arose simply from a little thing that hadn't been done right. That generates unnecessary costs and is harmful to the environment. Thanks to our new smart glasses, we can look over the shoulder of the engineer and give him instructions, and we can control immediately if the instructions were implemented correctly. Communication is as simple as if everyone involved were in the same room.'

Virtual Reality – Augmented Reality – Assisted Reality

So what exactly are 'smart glasses'? The term is not among those that are repeated over and over when talking about new forms of perception.

It's clear that smart glasses have nothing to do with virtual reality. Virtual reality (VR) is used, among other things, for the development of machines that are to be adapted to the customer's needs. At the World Money Fair 2020 in Berlin, Sack & Kiesselbach used VR to present a customised *TMA350* that had already been delivered to the customer and could therefore not be brought to the fair.

Virtual reality enables clients to examine a 3D model of any machine in the virtual space from all sides, they can even look inside in order to make specific requests before the production even starts.

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COVID-19 – Adapting to Survive

According to a British study, it takes 66 days for an action to become a habit. In other words: COVID-19 will have a lasting impact on our life in the future.

Due to the reality of mobility restrictions, we have got used to things that we never really wanted to get used to in the first place. In this process, we have made some discoveries, for example that working remotely doesn't go along with a loss of performance regarding many professions, and that it isn't necessary to fly around the globe for every minor issue.

On the other hand, we miss personal exchange, networking. So far, there is no computer programme that can fully replace a coin fair or a conference.

In this issue of Mint News Quarterly, we want to give you a brief outlook on the extent to which the measures enforced by corona have promoted and accelerated new developments.

However, we also want to talk about tried and tested events. Will there be coin shows in the future? How will they change when collectors no longer take pleasure in throwing themselves into the hustle and bustle to get a coin they desire? Which packages of measures are being developed in order to create the coin fair of the future? We asked three organisers from three continents to answer this question.

In any case, COVID-19 has proven one thing: those who adapt most quickly and effectively to a changed environment in times of crisis have the best chance of survival.

So, let's stay active and dynamic. It's worth it.

Ursula Kampmann, Editor

Remote Maintenance with Smart Glasses (Continued)

For the user, this is easier than imagining the final machine solely with the help of a design plan. A simple glance is enough to decide whether they want something to be different. This avoids cost-intensive changes to the final object.

Augmented reality is still 'pie in the sky' for the coin producing industry. At some point, this technology will make it possible to provide interactive operating instructions for every machine, with accompanying smart glasses that deduce automatically which function of the system the operator wants to use based on his movement; stored information will then be displayed on the screen of the glasses helping the user to proceed to the next step immediately.

The smart glasses used for remote maintenance by Sack & Kiesselbach are already a preliminary stage of augmented reality, where information is not retrieved automatically but a service engineer at the Meerbusch headquarters supports the user on site. Because there's a human factor involved, this is called assisted reality.

Thanks to the smart glasses, the service engineer sees exactly what his colleague on site is seeing – and he notices when the instructions he gives from Meerbusch are not implemented as required. Hence, misunderstandings are minimised. This is an important help, especially when communication is not carried out in one's native language.

The problem

Actually, one might say, the new smart glasses don't do anything that could not have been done by means of conventional media – even though a little more effort might be required. After all, most machines these days – including Sack & Kiesselbach's presses – have an interface for connecting to the teleservice. This allows the control system and the operating panel to be accessed from the company's headquarters if maintenance service is requested.

'So much for theory', says Markus Schlein. 'However, in practice things are different. Many of our clients don't want to allow access to their network and do not wish to connect their press to the local internet because this might result in a data leak that could be used to retrieve inside and secret information. That's why we came up with something new.'

'The testing phase has already been completed. At a customer's request, we are currently equipping our first TMA350 with a remote maintenance module, which we will use to set up our own wireless local area network by means of an integrated mobile data connection. This enables us to connect to the press via an encrypted VPN connection outside the customer's network.'



Markus Schlein addresses a second problem.

'Although we can see from here what the problem is, we do not have any influence on how the problem will be solved by the people on site. We have already experienced a situation in which it was necessary to simply press a certain button. Unfortunately, the operator on site always pressed the button next to it and we wondered why that did not produce the desired result. With smart glasses we see what is being done on site and, in addition, we can use the software to make information such as pictures, technical documentation or an arrow appear on the screen showing the operator exactly where he should intervene to solve the problem. Thanks to a smartphone integrated into the glasses, you can use both hands to work on the machine and talk to us at the same time.'

There is another advantage of this new way of remote maintenance.

'Information about any problem that arises is also stored centrally. This way we can understand where there is any confusion regarding the operation of the machine. This enables us to optimise our user manual and the user experience in order to minimise operator errors in the future,' said Markus.

It is obvious that the idle time is reduced enormously, too. Reacting immediately via computer is simply much faster than having a service engineer travelling halfway around the world.

Sack & Kiesselbach are thinking about offering their customers a possibility of bringing the machine into service via the internet in the future. In this way, the buyer of an oil hydraulic press can save a sum in the high four-figures.

The technology behind it

For their smart glasses, Sack & Kiesselbach are collaborating with the Cologne branch of the French company AMA (Advanced Mobile Applications). The company, founded in 2004, is a pioneer in the field of assisted reality and head-up displays. Originally the market leader in the development of virtual reality computer games, it has specialised in recent years in applications for mechanical engineering, medicine and the conference sector. The smart glasses, officially called XpertEye Assisted Reality, are currently used in more than 100 countries and for a wide range of digital applications. The internationally operating company with headquarters in Rennes has subsidiaries in Boston, London, Rome, Bucharest, Hong Kong, Shanghai and Cologne.

With XpertEye, the company has created a complete solution that offers many options.

Data security for telephone communications is guaranteed via a secure platform. There are different options for communicating such as sending text messages, making audio and video calls, sharing images, zooming in on a detail and highlighting areas.

Additional tools such as a microscope, a thermographic camera and an endoscope camera make it possible to see virtually almost better than with the naked eye.

You can get a first impression of the possibilities on YouTube. AMA have their own channel that demonstrates the possibilities of smart glasses.

Markus Schlein comments: 'especially the additional devices are absolutely great. We can even use them to examine the relief of a coin and our team in Meerbusch can give the user a tip on how to achieve even better results. In times of the coronavirus, we have now used smart glasses with some of our customers and all of them were highly satisfied. I am sure that this technology will offer many new possibilities for us to provide our clients with a service that is even more customised than before without wasting valuable time on travel. Once you have tried it, you will not want to do without it ever again.'

'How to Amaze Collectors Around the World with 800,000 Objects, and No Museum

The American Numismatic Society (ANS) owns one of the world's largest collections of coins, medals, banknotes and other numismatic pieces, totalling over 800,000 objects. It employs 19 people, about half of whom work in research. This institution is not financed by the government but by member contributions, donations and income from the endowment fund, itself the result of a long history of donations. The total amount received in 2019 was in the vicinity of \$1.5 million.

This illustrates that the survival of the ANS depends on strong support among its members. This is not as easy as it sounds, as only around 10% of members live close enough to regularly attend ANS events. For that reason, the ANS was forced early on to develop a way of offering its widely scattered members a service that extends beyond the usual printed materials produced by numismatic societies.

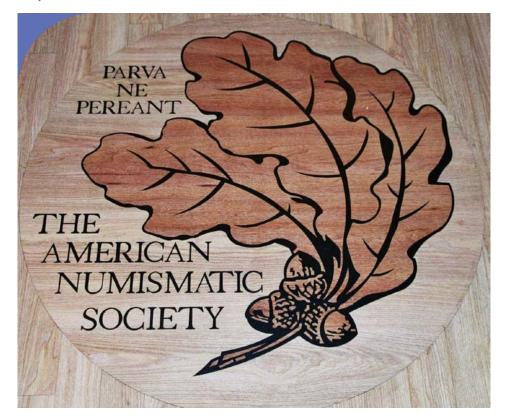
Any mints or central banks looking for ways to retain collectors of their products may be able to draw inspiration from the range of exciting solutions developed by the ANS. And by the way, most of these ideas are relatively cheap and easy to implement.

No museum? To the internet!

In 2008, the ANS was on the brink of financial collapse. It had left the spacious offices of the museum in the Audubon Terrace Historic District, then moved to another building close to Wall Street, but it could no longer afford it. At the time, it was a tough decision to let this museum go; although it was a financial burden, it also attracted a great many visitors thanks to its position in the New York museum scene. This move forced the ANS to adopt new approaches to engaging members.

The timing was fortuitous: in the years after the dot-com bubble burst, we saw the emergence of the World Wide Web as we know it today, with Google, Amazon and YouTube – and the ANS put this new technology to excellent use, following-up on its early investments on digital database.

It was the first major numismatic cabinet to make most of its pieces available online. Nowadays, users can browse around 600,000 objects from the collection and 100,000 titles from the library. Many of the coins and banknotes are not photographed yet, which remains – again – a matter of funding. Fortunately, the ANS has been able to secure several grants allowing it to process tens of thousands of coins during the past few years.



Since then, the ANS has remained a pioneer in the digital world. It also uses the online world to engage and retain members, with a very effective combination of 'real' and virtual elements and of 'members only' and freely available content. It is currently one of the few numismatic societies that gains more new members than it loses old ones.

YouTube, Money Talks and Long Tables

In addition to the more 'conventional' lectures, which are filmed and, since 2014, published on YouTube, the ANS has also created Money Talks for its members. When they started out, Money Talks were a kind of combination of a numismatic lecture and a social event. They're based on a simple, age-old scene: a group of people talking about coins or banknotes together over lunch, with the rare object in question close at hand.

Collectors everywhere want the opportunity to communicate directly and informally with people whom they would otherwise only know as event speakers or from books. Money Talks satisfy this demand.

Before the COVID-19 crisis, these Money Talks always followed the same formula. A researcher or well-known collector would give a short presentation, and not with slides, by the way, but with real objects, either from the ANS collection or provided by other attendees. Afterwards, the group participants would talk about the objects in an informal, relaxed discussion. For years, ANS members living in other states or abroad had been complaining that they were being excluded from events due to the physical distance. The sudden introduction of restrictions that, due to COVID-19, prohibit any gatherings on the ANS premises meant this formula had to change.

Rather than simply cancelling the events, the ANS invited its members to join discussions digitally, using a professional version of Zoom. The basic schedule remains the same: after a short but detailed introductory talk on the object in question, participants can ask questions and discuss the object directly with the specialist speaker.

The response has been incredible. The real-life Money Talks would attract, on average, around 15 to 20 participants, while the number of participants in the virtual meetings has increased to an average of 55. Thanks to the well-chosen time on Saturday afternoons, members from both the American West Coast and Europe can take part at a time that works for them. While the Money Talks themselves are restricted to members, the events are published on YouTube for anyone to view.

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How to Amaze Collectors Around the World (Continued)

Asked about the future of Money Talks, Executive Director of the ANS Gilles Bransbourg says: 'I would hate to say that this health crisis has represented an opportunity for the ANS, since it is a tragic event and we have all lost some people dear to us. It would be fair to say, however, that it represented a strong wake-up call: many of these online projects had been in the pipeline for month, if not years, and we had shown some complacency in that process. At the same time, some objected to online recording.'

'All of this is gone: we had to rise to the challenge or fall into irrelevance. We won't go back to the previous world: the digital revolution was well underway before COVID, and that trend has been even more boosted as a result. Money Talks and other initiatives will remain digital, maybe we will manage to create hybrid physical-digital events. Soon we will hold Money Talks in other languages, starting with German.'

The ANS is also using this new technology to initiate digital Long Tables. The leader of these events is less of a speaker and more of a moderator who, after a short introduction, guides a round table discussion between ANS members.

Gilles Bransbourg explains the new format: 'Money Talks involve a specialist speaker and an audience. However, we felt that we had lost some of the social aspect. With everyone being stuck at home, why not create true online gatherings around a numismatic concept? The person in charge initiates a dialogue rather than a presentation. This is how the Long Table series started, normally closing the week on Fridays, lunch time in NYC, 'apéritif' time in Europe.'

Social media, blog and Sage Society

The ANS is one of the few numismatic associations that uses the full range of digital and real-life tools to engage and retain members. Of course, this includes the usual social media channels. The ANS is active on Twitter, Instagram, Facebook and YouTube, and has created a podcast, The Planchet.



But despite the impressive online following - the ANS currently has 20,000 followers on these platforms – Gilles Bransbourg explains that it is more difficult to assess the effectiveness for this area of public relations. 'We believe social media to be a critical component of our communication and educational strategies, even though it remains difficult to quantify their direct impact on membership and financial donations,' he said. 'We are working on a new website design, which should allow our digital communication to become more integrated and, as such, more effective.' On the other hand, the ANS's own blog, with its lovely name 'Pocket Change', has considerably increased the appeal of the ANS website, not just for regular users but also for search engines.

If you read the introduction of this article carefully, you will have noticed that there must be a lot of ANS members willing to donate large sums to the society. The Augustus B Sage Society was set up a few years ago especially for them. Every year, the members of this society are taken on a trip touring various numismatic attractions, guided by one of the ANS researchers.

More generally, the ANS also hosts its own events and lectures for members, sometimes open to non-members, with very exclusive guest lists. But the most exciting perk of being an ANS member is the opportunity to visit the collections, spend time with the curators and librarians, meet and talk to well-known researchers and collectors in person.

Useful resources for identifying coins

In addition to its own content, the ANS also provides access to a wealth of resources that collectors all over the world can use to identify coins and work with them in a research context. Much of the ANS's international work goes into organising collaborations with academic institutions all over the world that publish their material online.

This not only includes the catalogue for the ANS's own collection, but also, in particular, catalogues of coins and hoards from the Roman Republic and the Roman Imperial Period, coinage of Macedonian rulers and medals from the First World War.

ANS's role in initiating, organising, contributing to and supplying materials for the production of these resources is essential to its international reputation – not just in academic circles but also among collectors. After all, these catalogues are used by expert collectors across the world. Gilles Bransbourg explains: 'collectors and scholars alike need online support in order to be able to organise their collections or support their research. The most appreciated aspect of online resources like OCRE, HRC, and others, is that they gather a range of institutions beyond the ANS. We aim at being collaborative and inclusive. For instance, to-date, OCRE displays Roman Imperial coins from almost 50 public and private institutions worldwide'.

What mints can learn from this success story

What do all the most successful ANS events have in common? Well, they all offer three things that collectors really appreciate:

- 1. The opportunity to talk and interact directly with major personalities from the world of numismatics, whom they wouldn't otherwise get many chances to meet.
- 2.Information about the historical, economic and cultural background of their coins.
- **3.**Resources they can use to catalogue their own collection.

The ANS has therefore found a perfect way to meet the needs of a very specific group of collectors, scholars, and, more generally, the public at large, that – as Gilles Bransbourg says – don't necessarily come to us with strong knowledge about all aspects of numismatics and monetary history (although many do!), but are driven by their passion to learn, develop, share, and finally transmit that knowledge.



Gilles Bransbourg is Executive Director of the ANS. He studied among others Economics, Mathematics, Finance, Political Science, Statistics at Ecole Polytechnique, ENSAE, and SciencesPo. After having worked as a market economist and having held several different executive positions in the banking sector, he decided to concentrate on history and numismatics after a PhD at Ecole des Hautes Etudes en Sciences Sociales. His research now focuses on ancient Roman economic and monetary history. In 2014, Gilles Bransbourg received a knighthood in the French Order of the Palmes Académiques.

The Future of Coin Fairs – the Coin Fairs of the Future

There are things that are taken for granted until they can no longer be taken for granted, such as coin fairs. Since the 1970s, they have been the ideal way to meet new clients and to enlarge one's network. The coronavirus questions that fact. We asked the organisers of three major coin fairs three questions to find out what they think the future will look like. The fairs are the ANA World's Fair of Money in the US, the Hong Kong Coin Show for Asia and the World Money Fair for Europe.

Whereas the July Hong Kong Coin Show was cancelled, the ANA still plans to do their World's Fair of Money in August depending on local and state regulations making it possible.

The Hong Kong Coin Show did win nearly half a year by planning its next event in December.

World Money Fair is even more lucky. They have until the end of January next year to prepare the 50th edition of WMF.

We talked to Kavita Lam (KL) – Hong Kong Coin Show); Jennifer Ackerman (JA) – ANA World's Fair of Money); and Barbara Balz (BB) – World Money Fair.

Q: Please tell us, what will be different to the last of your shows we visited? How will you protect visitors, dealers and mints?

KL: In view of the pandemic, safety of our exhibitors and visitors is of our utmost importance. The following preventive measures will be done for the Hong Kong Coin Show:

- Disinfectant packs, including sanitizers and masks, to be distributed to each exhibiting table;
- Sanitizers at reception for visitors;
- Ensure distancing at the queue;
- Encourage online registration to prevent direct contact onsite;
- Ensure all entrants wear a mask before entering the exhibition hall.

The following will be done by hotel:

- Service staff have to wear surgical mask throughout the event;
- Service staff have to wear surgical mask and gloves when serving coffee/tea;
- A non-contact forehead infrared thermometer will be arranged by our service staff for taking the temperature of all invited guests upon arrival at the event venue;
- Sanitation dispensers will be provided at the public area on venue floor;
- Disinfecting wet wipes are ready for use.



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JA: Obviously, we're in unchartered waters here. Planning for the ANA World's Fair of Money during the coronavirus remains fluid even though the timeline in which we're working under is super tight to adapt to ever-changing local and state regulations.

The Pittsburgh show will not look like a typical World's Fair of Money; it will be a smaller show. Even anticipating that the bourse will include fewer dealers, we may have to expand into one or two additional halls in order to accommodate wider aisles and appropriate distancing between tables.

We're working closely with the convention center on modifying meeting rooms to adhere to social distancing protocols for the lectures, meetings and receptions that we would usually host – but frankly, we don't know yet if it's even possible or practical to include these events at the show so we're exploring options for virtual gatherings.

We likely will be moving some of the lectures and presentations to a virtual format. Of course, we'll also ensure that we have ample quantities of basic supplies such as hand sanitizer, masks, and digital scanning thermometers to take the temperature of each person entering the show.

Although we remain optimistic about our ability to hold the Pittsburgh World's Fair of Money in August as scheduled, ultimately the decision will be based on what is in the best interest of our members and the collecting community. There's also the possibility that Pennsylvania and the City of Pittsburgh may decide to prohibit gatherings such as ours through the remainder of the summer, in which case the decision will be made for us.

But until we hear otherwise, our team continues to work with the convention center to ensure that all local, state and CDC guidelines and regulations are followed.

BB: The World Money Fair will be the same meeting place for the minting business and the collectors as every year. But we have to respect regulations to protect exhibitors and visitors. Our health and security concept is under progress. It will affect the appearance of the fair slightly.

Q: Many congresses and fairs are working on concepts of enhancing their event with digital amendments. Are there any discussions by the organizers on how to make a digital offer to your visitors?

KL: A coin show is different from congresses which focus more on guest speaking and talks – visitors want to examine the real products with great value and meet overseas exhibitors at once place. A physical event is necessary for the numismatic industry to sell collectibles.

On the other hand, in order to reduce contact onsite, we will encourage online registration and payment and cashless onsite payment eg. Octopus card, so as to protect customers and reception staff.

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The Future of Coin Fairs (Continued)

JA: This extraordinary time has forced citizens to embrace technology like never before – for entertainment, information and connection to each other. It has provided the ANA with an opportunity to share and promote its large collection of digital media, including virtual exhibits from the Money Museum, videos, blogs, games, and the complete archives of The Numismatist from 1888 to the present.

Collectors are hungry for more online numismatic programming, so we're redoubling our efforts to provide additional digital content. For example, we're debuting an ANA eLearning Academy during what would have been the week of our popular Summer Seminar, 29 June-10 July, which will offer more than a dozen one- and two-hour courses and informal 'coin chat' sessions via Zoom.

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We're also debuting a new podcast this month – 'Two Bits; Coins & Currency' – and we'll soon be premiering a Money Museum Masterpiece video series.

We'll be adapting some of that same technology during the Pittsburgh World's Fair of Money to keep collectors connected both to educational programming and to each other, either by live streaming or recording/filming activities to enjoy at a later date.

BB: To complement the fair with digital features was already planned. Now we accelerate proceedings.

Q: Please, tell our readers at the mints and central banks, why it is so important to support coin shows now by coming.

KL: In fact the numismatic market demonstrates its incredible resiliency despite the economy contraction, which can be proved by recent auctions held by Stack's Bowers and Ponterio and Spink China in Hong Kong. Total prices realized for SBP were more than \$13 million, which is the largest in Hong Kong since August 2011; and several Hong Kong and Chinese coins and banknotes were sold for more than HK\$500,000 respectively by Spink.

The purchasing power and pent-up demand of collectors is well proved as they can foresee the great value of the coins and banknotes they buy. We are confident to say that Hong Kong Coin Show would be one of the largest scale numismatic events held in Asia in 2020. Hence our show would be the momentous platform for mints and central banks to exchange ideas, sell new commemorative coins, products, or even new skills, and get to know the latest trend of the numismatic market. Also, promotion is always necessary, especially after the half-year travel restriction and quarantine measures. On-site presence would be absolutely crucial to promote and inform the people of latest updates.

JA: Although much of the industry moved online during the stay-at-home recommendations at the height of the COVID-19 pandemic, the ability to forge long-term relationships and get in front of both existing and potential clients by attending a show such as the World's Fair of Money cannot be replicated online.

The opportunity to spend time engaging with hundreds of the world's top dealers, introducing new products to collectors, and interacting with some of the titans of numismatics is not an experience one can find online. The best numismatic inventory anywhere can be found at a show of this calibre, both on the bourse floor and in the live auctions.

Plus, for those wanting to expand their numismatic knowledge – the opportunity to attend lectures and seminars, view rare historical treasures from the Money Museum and private collections, and spend time with others that share your collecting passion – there's nothing like it!

BB: Digitalization makes working easier, it is a fantastic tool, but nothing can compare with or replace a personal meeting.

Since these interviews took place, ANA has announced the suspension of the 2020 World's Fair of Money, the ANA Board voting to postpone the show and to consider alternate sites and/or dates. ANA's convention has only been cancelled twice since 1891 - in 1918 during the flu pandemic and again in 1945 because of World War II.

New Head of Sales at H2O

Mirko Strauss is the new Sales Manager at H2O GmbH. He has been responsible for all national and international sales activities of the company since February, and replaces the previous manager Jochen Freund, who has left H2O after 12 years.

Mirko is a graduate in business administration and has many years' experience in management positions in sales, for example at Lufthansa Technik and aviation supplier Hydro Systems. His goal is to use this experience to expand the sales network of H2O even more internationally and at the same time further improve market penetration in existing markets. 'I am very much looking forward to this new challenge and to being part of a highly motivated team', he explains. 'H2O also offers me the chance to make our world even more sustainable and greener'.

H2O specialises in the sustainable treatment and recirculation of industrial wastewater. Its VACUDEST vacuum distillation systems achieves wastewaterfree production for customers in more than 50 countries throughout the world. Since spinning out of Mannesmann Demag in 1999, H20 has been an owner-operated company with more than 100 employees, headquarters in Steiner in southern Germany and subsidiaries in Switzerland, Poland and China.