

# BIAN serious about bank integration in the Open Banking API universe

*The Banking Industry Architecture Network (BIAN) is an independent, member-owned association, established in 2008 to help banks improve their technical architecture. We talked to BIAN's executive director Hans Tesselaar about its ethos and plans*

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**T**he Banking Industry Architecture Network (BIAN) is an independent, member-owned, not-for-profit association that was established in 2008 to promote a common architectural framework for enabling banking interoperability.

BIAN's goal is to establish a semantic framework to identify and define IT services within the banking industry. The underlying architectural pattern originates from a service-oriented architecture (SOA).

The BIAN community is led by Hans Tesselaar, its executive director, and focuses on creating a standard semantic banking services landscape, while attempting to ensure consistent service definitions, levels of detail and boundaries. As Tesselaar says: "Making changes in an organisation like a bank is very time-consuming and expensive, and there is no guarantee that you will be successful. When we established BIAN in 2008 our goal was to turn banking technology into a plug-and-play environment. Ten years later we haven't achieved our goals but we are definitely making progress. It is not that easy to accomplish."

The theory is that this will enable banks to achieve a reduction of integration costs and be able to use the advantages of an SOA to implement commercial off-the-shelf (COTS) software.

"We see that there is progress," says Tesselaar. "In 2008 the idea was that a good SOA was the goal – now it is APIs that are to the fore. The model hasn't changed but as the developer technology landscape changes, that changes our goals. One of the main drivers is to make banking technology more attractive to the customer, who is now very sophisticated.

"One of the main drivers is to equip the banks to collaborate more



**Hans Tesselaar: BIAN has made huge progress since its inception**

with fintechs – the very boundaries of the bank have moved. There is a blurring of the boundaries in terms of what is inside the bank and what is outside the bank. Now banks bring fintechs inside the bank and work with cloud providers. That would have been inconceivable ten years ago – so much progress has been made."

Financial institutions, software vendors and system integrators, along with technology partners, are free to join the association and play a collaborative role with other industry leaders in defining, building and implementing next-generation banking platforms. The organisation runs many proofs of concepts in collaboration with its members.

Tesselaar has more than 30 years experience in the financial services industry, having been active for banks, insurance companies and pension funds. For eight years he worked at different management positions within ING, from chief architect to director sourcing, innovation and governance. He has special areas of knowledge such as people development, re-organisations, re-structuring of the labour force, negotiating with labour unions and workers' councils. As a managing partner of an ICT consultancy firm specialising in financial services, he has long-term experience in areas of expertise such as strategic business planning, enterprise architecture, HR development and innovation.

Tesselaar says: "A key topic that shone through at SIBOS this year was the idea of collaboration and the coming together of participants in the financial ecosystem. This year, we saw many more fintech companies present and even a dedicated 'FinTech Theatre' showcasing the most promising new businesses. When it came to the agenda, we saw presentations entitled 'Why startups and financial institutions need each other' and 'Collaboration at the core of revolutionising cross-border payments'. It's clear that working together is the future, which is an important realisation to come to in light of PSD2, which will revolutionise the space. And the journey to cloud usage in the banking industry depends completely on collaboration."

### Comprehensive solution

Based on an SOA, BIAN's standards saw the number of defined business scenarios, for which the BIAN model can be used, jump recently from 190 to over 700. The latest release also incorporates new features, allowing it to be fully translated across the industry.

Defined through the collaborative input of more than 60 leading banks, technology vendors and consultants, the model provides a simplified but comprehensive solution to enable financial institutions to innovate at pace without the costs and complexities that come with legacy banking technology.

"Our aim is to help our members reduce their integration costs and increase interoperability abilities," says Tesselaar.

BIAN members have collaborated closely to build new tools to make the standard as accessible as possible to financial services institutions across the globe. This includes a tool to enable both members and non-members to instantly view the business scenarios linked to each unique Business Capacity (Service Domain) – making the service landscape completely three dimensional for the first time.

Tesselaar says: "It's great to see that organisations are beginning to realise that collaboration will be the key to success in a post-PSD2 world. However, in order to truly embrace and maximise on what the new directive could truly offer, banks need to be working on a standardised, capability-based infrastructure. The implementation date for PSD2 is now upon us and, as of this year, banks will need to be able to provide third parties, such as fintechs, with access to customer accounts via APIs. This will allow those third parties to build their own services on top of a banks' data and infrastructure.

"When this happens, the government's aim of boosting competition should be realised within the financial space. We're likely to see fintechs and startups building on the banks' data to create and provide new services, one of which could be the creation of comparison sites for banking services – much like we see for insurance and flights."

In addition, BIAN is working with a series of partners to ensure that the language used to define the BIAN Model is translatable, whatever architecture language the financial services enterprise relies on. New measures to support this include making the service landscape suitable for ArchiMate (a common architecture language) as well as UML (the current language deployed by BIAN). The new standard is called SL 5.0.

There are also major improvements on the integration of a comprehensive Business Vocabulary. This vocabulary is based

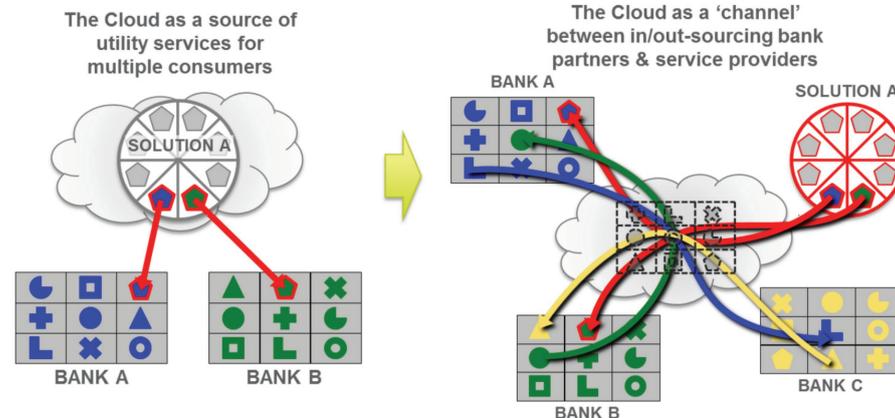
## BIAN OFFERS ITS MEMBERS ASSISTANCE IN...

- **Standards:** a definition of IT standards for SOA in banking ensures the highest degree of efficiency. Standards do not mean that everything is identical though. They simply form the foundation for future oriented services that offer a maximum level of flexibility in the banking industry.
- **Agility:** standards provide the greatest opportunity for banks to adapt quickly and efficiently to changing market conditions and demands.
- **Flexibility:** interoperability between IT systems through widely agreed standards ensures the highest degree of efficiency, by enabling banks to quickly adjust to meet changing needs and new challenges in a constantly evolving industry.
- **Evolution:** change is a constant, also in business, which includes banking and IT. BIAN members from the IT industry who actively participate in the evolutionary process of the banking industry will also find themselves better positioned as their own markets evolve.
- **Cost reduction:** it is safe to say that all businesses would agree that increased flexibility in their operations, the ability to adapt and react efficiently to change, and the important of maintaining a future oriented approach to their industry and business model are beneficial. The reason is simple. All of these aspects serve to reduce costs while simultaneously improving service. BIAN thus considers cost reductions of the primary goals of its efforts.

on the ISO20022 business vocabulary and additions are a based on the FIBO principles.

Tesselaar says: "While this may seem like a scary concept for banks that will see even more contenders to compete with for customers, this 'sharing nature' of open APIs that will be created by PSD2 doesn't need to be all bad. It could actually greatly benefit the banking industry in terms of new opportunities and the potential for growth.

### CLOUD ENABLING THE BANKING INDUSTRY



Simple cloud central utility service, brokered to multiple bank subscribers

"With PSD2, banks could easily outsource technology services to, and insource services from, the younger, more innovative startups meaning that they wouldn't necessarily have to own all of the technology or infrastructure required to provide a certain service. A good example of this in practice already is with banks using Transferwise for international payments – they can offer the service, but don't need to invest in building and maintaining an infrastructure themselves. This subsequently means that banks will have more flexibility, but also stand the chance of attracting new audiences, such as millennials, with their enhanced level of customer service."

Tesselaar continues: "Whether it is PSD2 across Europe, the Open Bank Project in the UK or the Unified Payments Interface in India, it is the regulators who are pushing the Open Banking agenda. With banks instructed to allow third parties to access some of their data, the scramble for Application Programming Interfaces (APIs) – one of the key ways to provide that access – is on."

The problem, however, is that every bank is defining its own set of APIs, thereby hampering connectivity, easy integration and openness, which sort of defeats the purpose.

"BIAN has been trying to address this issue with a series of measures," says Tesselaar. "At its heart is a service landscape that serves as a reference model of a bank and comprises all possible business functions. One of the important features of this model is its taxonomy, which lays out clear, standard definitions for these banking business functions, so that they mean exactly the same thing to every person and every bank. The question banks are asking is how can we replace our existing legacy technology with a more modularised approach."

Tesselaar says: "A good example is the American bank, PNC, which wanted to replace its payments engine which was completely embedded in its legacy environment. It started with the BIAN model and began mapping the systems it had against the systems it had to build. It carved out part of their legacy system and replaced it with a modern new one. It's a step-by-step process with the banks."

### Adopting the Cloud

BIAN is also very keen that the cloud is properly adopted by the banking community. The primary use of the Cloud to date has been to provide virtual/remote access to some hosted capability, technical or functional in nature. These hosted services often exploit the scalability and flexibility of the distributed Cloud infrastructure to reduce start-up costs, provide access to leading practice technologies and/or reduce operational costs and complexity. In this conceptually centralised model each service subscriber integrates their own dedicated instances of the Cloud hosted utility services into their local business applications or working environment.

The fact that aspects of production are remotely supported may in cases be completely transparent to their business users. The approach described here that seeks to 'Cloud-enable' the banking industry involves an extension to this centralised view of virtual service delivery. In an extended model, different banking industry participants and possibly non-bank enterprises that need access to financial service capabilities offer and consume business services from each other and specialist business service providers 'through' the Cloud. To represent this type of service exchange, an additional higher level 'conceptual model' is needed to package and organise the Cloud services in a standard form suitable for sharing between participants. This conceptual overlay is defined using the BIAN Service Landscape and its constituent Service Domains. The Service Domains define service-enabled business capability partitions providing the organising structure for the SaaS solutions.

Tesselaar says: "Being part of BIAN, technology companies, such as Infosys, have a key role to play in accelerating the shift to Open Banking. They are the trusted parties for their clients so it's their role to help the banks in finding their way in this new era by showing and providing them the best practices based on an industry standard such as BIAN. This will enable all to move, in a controlled and proven way, into the desired future direction. As banks move to the new paradigm, they would also need to decide

whether to maintain the various business capabilities in-house, or simply consume them off the cloud as and when required.

“For those deciding to go with the latter, the good news is that there are a number of supportive factors in play – the availability of an increasing number of standardised APIs, and cloud solutions from software – and infrastructure – providers envisaged by BIAN.”

### Key properties

Some key properties of the BIAN Service Landscape and Service Domains are that the BIAN model uses a very specific representation of business activity that differs from most prevailing models: rather than modelling end-to-end business processes that capture the linked sequence of actions needed to respond to a business event, the BIAN model seeks to identify the discrete business capabilities that are involved in the event, without prescribing when or in what sequence they may be engaged. Business applications developed from conventional process-based designs tend to automate well-defined or repetitive activities, like a factory production line.

The BIAN designs can be used to architect applications that act as loosely coupled, asynchronous service centres that interact through queue-based message exchanges, a design well suited to Cloud implementation.

Because the BIAN Service Landscape and its constituent Service Domains have the above properties, a banking business blueprint

## THE BIAN SERVICE LANDSCAPE

- The BIAN Service Landscape contains the complete collection of business capabilities that might make up any type of bank or banking enterprise – these business capabilities are called BIAN Service Domains.
- The scope of a BIAN Service Domain is designed to represent a discrete and elemental business capability – the business role of a Service Domain is canonical, meaning it can be consistently interpreted in any deployment.
- The business capabilities defined by BIAN Service Domains can be implemented with an ‘encapsulating’ service boundary that allows them to be in or out-sourced through the Cloud as long as all of their service dependencies can be supported.
- The BIAN Service Domain establishes the scope and external service boundary for a business capability without defining how it may perform that role internally. The business purpose or role of a Service Domain – ‘what it does’ – is highly stable over time even though its internal mechanisms – ‘how it does it’ – will inevitably evolve as new techniques and practices are developed.

## “With open APIs soon to be a reality, banks must alter their back-end structures to accommodate for them

defined using BIAN Service Domains is canonical and common for all banking activity. Also, because the service boundaries of Service Domains are highly enduring, the model is stable over time. As the Service Domains encapsulate their internal working behind their service boundary, systems solutions that are aligned to this model can use highly distributed service enabled environments, such as the Cloud, to support a fully componentised and distributed business operating model.

A typical full-service bank will contain well over 250 different Service Domains and depending on its organisational structure, some of these Service Domains will have many duplicated instances.

Tesselaar says: “There is a conventional centralised Cloud service implementation – the Cloud-based service offers a virtual utility where each dedicated instance accessed by a bank is integrated with its locally operated systems. We use the standard industry Service Domain blueprint to connect a service provider with two banks as well as allowing those banks to source services with each other and a third bank, showing how the Cloud now can act as an operational service broker for in/outsourcing services between banks (and non-banks requiring financial service capabilities) and service providers.

“However, there are still changes required if banks are to truly embrace a PSD2 landscape – it will take more than just simply the sanctioning of open APIs. If banks are serious about outsourcing technology based on this information at a later date, they must first look at their own infrastructure and modify it so that it can support this new technology.”

### A standardised framework

Today, the current architecture of traditional banks does not allow for collaboration of this type. If all banks are to set themselves up to prosper from the incoming sharing culture, a standardised framework across the entire banking industry is paramount, BIAN believes. This standardisation will allow for the synchronisation of APIs and IT systems across the landscape.

As Tesselaar says: “Banks can only make one move now. With open APIs soon to be a reality, they must alter their back-end structures to accommodate for them. They need to be implementing a uniform platform that will allow for the progression of the industry, leaving behind the archaic and inefficient architecture that is currently holding them back. It’s clear from the discussions I heard at SIBOS that collaboration is at the forefront of banks’ minds. The next move is to act on this and take the necessary steps to ensure this becomes a reality.”