

CELENT

SOLARISBANK: GERMANY'S FIRST BANK IN THE CLOUD

**WINNER OF CELENT MODEL BANK 2022 AWARD FOR CORE IN THE
CLOUD**

Stephen Greer

March 16, 2022

This is an authorized reprint of a Celent report with the same title. The reprint was prepared for Mambu to distribute, but the analysis has not been changed. For more information, please contact Celent at info@celent.com

CASE STUDY AT A GLANCE

 **Solarisbank** **FINANCIAL INSTITUTION** Solarisbank

INITIATIVE Germany's First Bank in the Cloud

SYNOPSIS Solarisbank is Europe's most well-established Banking-as-a-Service (BaaS) provider. The bank built a platform for providing granular access to financial services capabilities from scratch as well as its own deposits and payments ledger in the cloud. To move away from legacy processes inhibiting loan origination and servicing, Solarisbank moved all products and existing loans onto the Mambu SaaS cloud banking platform, running on AWS. The initiative has been a major success as the bank evolves its BaaS infrastructure offering in the market.

- TIMELINES**
- **January 2020** – Planning begins for Mambu implementation.
 - **April 2020** – Implementation of Mambu kicks off.
 - **September 2020** – Closed beta version launch of loan products.
 - **October 2020** – Go-live: new loans created in Mambu.
 - **January 2021** – Phase 2 begins (loan migration).
 - **Q2 2021** – All existing loans migrated to Mambu.
 - **June 2021** – All lending products migrated to Mambu.

- KEY BENEFITS**
- Growth of 40% to 60% annually in terms of new products and customers.
 - July 2021 raised \$224 million at a \$1.65 billion valuation.
 - > 50 partners ranging from corporations such as American Express and Samsung to startups like Vivid Money, Penta, and Bitwala

KEY VENDORS



CELENT PERSPECTIVE



Offering full-stack Banking-as-a-Service (BaaS)

Full-stack BaaS providers (i.e., those with ability to provide core, licensed financial services and a granular API/product platform under a single brand) are becoming increasingly popular as non-banks look to offer more contextual financial services. Solarisbank saw demand for these services rising but an inability for traditional banks to adequately serve this market. Celent is impressed with the commitment to accelerating this full-stack BaaS strategy in the context of what's happening in the market. Solarisbank does not want to be considered a bank but rather a technology company providing infrastructure. The differentiation is the level of control it has over the entire stack.



Building and buying a core platform

Financial institutions are often confronted with the decision of whether to build or buy specific capabilities. Buying can increase the time to market (or time to produce value) and potentially lower the cost to deliver, but it affords less direct control. Building affords the most differentiation and control, but this may come at the expense of resources and the effort required to deliver. Celent was impressed with how Solarisbank has evolved its approach, first buying a core platform to get to market before deciding to build its own. With Mambu, the bank realized it could get significant flexibility and control out of the box by going with a market leader in the space. Solarisbank opted not to build the complex lending functionality itself but instead rely on a proven partner.



Showing the benefits of cloud-native

Solarisbank is a technology provider and serves partners who may be digitally mature. Unlike traditional banks, where customers are accustomed to legacy customer service standards, Solarisbank's partners rely on having capabilities to differentiate themselves in the market. Through its heritage application provider, the bank was unable to meet the growing needs of its customers or the evolving requirements of more modern products. Celent was impressed by the move to a completely cloud-native core platform running on AWS. This has significantly enhanced the scalability, resilience, and flexibility of the bank.

DETAILED DESCRIPTION



At the end of the day, the most important part [of Banking-as-a-Service] is hyper-granular APIs.

Baha Jamous, VP Marketing and Communications, Solarisbank

Solarisbank is Europe's leading Banking-as-a-Service (BaaS) platform founded by a group of fintech experts from FinLeap. As a technology company with a full German banking license, Solarisbank enables other companies to offer white-labelled financial services. The bank offers a suite of financial services products which can be plugged in via APIs on the Solarisbank platform. The platform offers digital bank accounts and payment cards, identification and lending services, and digital asset custody as well as services provided by integrated third party providers.

Table 1: Solarisbank Snapshot

YEAR FOUNDED	2016
REVENUE	€35 million (2020)
GEOGRAPHICAL PRESENCE	HQ: Germany EU: Spain, France, Italy, UK, and Lithuania
EMPLOYEES	400+
OTHER KEY METRICS	Total Funding: \$389.3 million Valuation (2021): \$1.65 billion
RELEVANT TECHNOLOGIES AND VENDORS	- Core banking software: Proprietary - Loan origination and servicing systems: Mambu - Cloud infrastructure: Amazon Web Services (AWS)
MAJOR PARTNERS AND CUSTOMERS	American Express, Samsung, Vivid Money, Penta, and Bitwala

Source: Solarisbank

As a fully licensed German bank, Solarisbank can passport its license to other EU countries, where it operates in Spain, France, and Italy. It also holds e-money licenses for the UK and Lithuania. The bank currently supports more than 50 partners, including American Express and Samsung, as well as start-ups like Vivid Money, Penta, and Bitwala.

Solarisbank was built from the ground up to be different. The founders saw legacy technology, processes, and thinking as a major barrier to incumbent banks providing BaaS capabilities. It set out to change the approach to the market. It was one of the first traditional banks in the world to move completely toward an infrastructure model, providing access to regulated financial services products to non-bank partners rather than customers/business themselves.

While most of the Solarisbank platform is built internally from scratch (e.g., payments ledger, deposits), the bank decided to go with the Mambu core platform to power the subledger system for its lending business. Deploying cloud-native allows them the scalability to reliably grow the business and the flexibility to create new products in the market. Through Mambu and its other homegrown core platforms, Solarisbank effectively became Germany's first "bank in the cloud." Implementing Mambu has been a great success for Solarisbank as it continues to evolve in the market. It's growing at a rate of 40% to 60% annually and is valued at more than \$1.65 billion.

The Banking-as-a-Service (BaaS) Opportunity

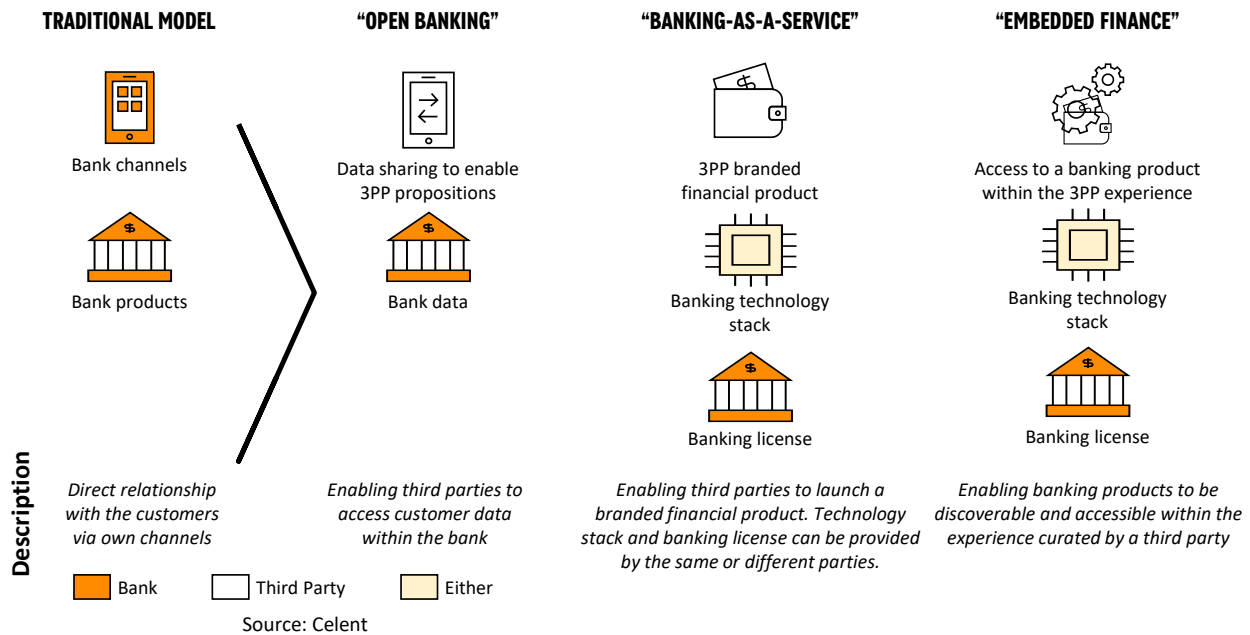
Solarisbank was started to be a partner for non-banks looking to offer financial services to their customers. The founders saw demand for these capabilities but almost no incumbent banks with simple API-based connectivity into regulated financial products or infrastructure. They were one of the first BaaS providers in the market.

Before covering the details of the Solarisbank offering, it's worth a quick overview of what Celent means when we refer to "Banking-as-a-Service."

Celent defines BaaS as "the producer/supplier of products and capabilities, enabling third parties to launch a branded finance experience." BaaS breaks down the banking stack into three buckets: the customer experience, products/functionality, and the core/regulatory license. It abstracts customer engagement from infrastructure, allowing consumers of BaaS offerings to focus on building differentiation versus commodity infrastructure. The BaaS layers can all come from the same supplier, also known as a full-stack provider, or they can be mixed and matched from different parties that may specialize in a slice of the stack (e.g., issuing credit cards).

Banking-as-a-Service can also be considered within the broader open finance landscape, shown in Figure 1. Banks are exploring new business models and sources of revenue as they move beyond traditional vertically integrated banking (i.e., serving *our* customers with *our* products through *our* channels).

Figure 1: Defining the Open Finance Landscape



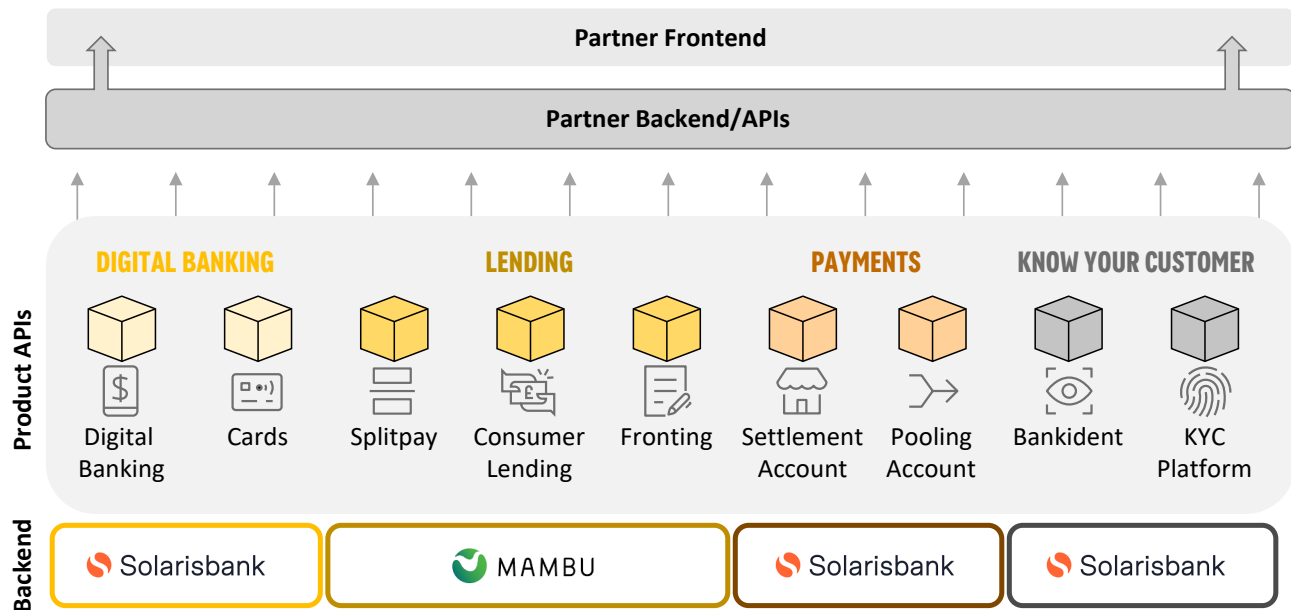
Solarisbank BaaS Platform

BaaS requires specific technology. Most importantly, financial services functionality and products must be able to be delivered in a modular fashion through APIs. For large monolithic platforms this can be a challenge, as the piecemeal consumption of BaaS is often difficult or impossible to serve.

When Solarisbank was first going to market it had a decision to make on the extent to which it would build versus buy its technology stack. When the bank was launched in 2016, the goal was to get to market quickly. The bank initially bought off-the-shelf back-office platforms which were tightly integrated and ready to deploy. IT teams focused on building out a modern API platform/product layer which would be the primary market differentiator.

While initially this worked well for them, over time it became clear that in areas like payments processing and deposit taking it would be advantageous to have complete control over the infrastructure. By owning the infrastructure, the bank would not be dependent on a third party and could automate manual processes connected to the ledger. In 2017 the bank began building its own payments ledger and core deposit platform, with all customers migrated to the new platform as of September 2021.

In the view of the bank, while functionality is important in a BaaS platform, what makes a differentiated offering primarily comes down to the granularity of the APIs, cost efficiency, scalability, and providing premium SLAs to partners. While the bank is a mix of proprietary technology and purchased solutions, it's constantly evaluating whether a business function is differentiating enough to bring in-house.

Figure 2: Solarisbank BaaS Platform

Source: Solarisbank

Solarisbank's BaaS Platform APIs

Digital Banking

- APIs to build a digital banking offering, completely branded and fully licensed under Solarisbank.

Cards

- Offer debit cards to partner customers with custom designs.

Lending

- Splitpay: BNPL offering allowing end-users to split up large payments into installments.
- Consumer lending: White-labelled consumer loan solution offering fully digitized applications and decisioning in as soon as 10 minutes.
- Fronting: Tailored loan origination and servicing with partner-proposed scoring models and pricing based on risk appetite.

Payments

- Settlement Account: Ability to orchestrate the holding and transfer of third party funds using automated settlement APIs, which handle PSD2 compliance.
- Pooling Account: Supports pooling with SEPA Credit transfers, SEPA Direct Debits, and SWIFT leveraging either full or virtual IBANs.

Know Your Customer (KYC)

- Bankident: Compliant with EU AML laws, supports ID verification during onboarding through personal data, microtransactions, or signature.
- KYC platform: Full suite of ID verification and EU AML-complaint APIs for retail or SME customers.

Moving to Mambu for Lending

When Solarisbank was launched it decided to buy a loan platform to cover the ledgering needs of its financing portfolio. As the bank grew, however, its loan volumes began to scale beyond the capabilities of its supplier platform. For example, only a single loan could be created at a time, and the total number of loans that could be created per day was restricted based on scalability limits. The vendor platform also did not support horizontal scaling, meaning it was impossible to add more instances to distribute the increasing load.

Solarisbank needed to look for a system which could (1) scale in the cloud to meet the growing strategic objectives of the business, (2) provide easier access to new growth markets, and (3) offer flexibility in consumption and product creation of the capabilities. Ultimately, the bank settled on the cloud-native, next-gen platform Mambu to serve as its subledger for loans.

Mambu is an API-enabled, cloud-native, multi-cloud core platform which the bank deployed on Amazon Web Services (AWS). Mambu also supports Google Cloud and Microsoft Azure. Solarisbank found many of the incumbent core platforms in the market to be too tightly coupled for its specific needs. It would have been difficult to mix and match individual functional needs from traditional platform providers. The bank found Mambu to be a leader in lending-specific use cases, both at a functional and operational level, while already serving many of the European markets it was looking to enter.

Solarisbank notes several advantages it was able to achieve through a next-gen core like Mambu:

- Lean architecture, which allowed for a fast time to market
- Broad API support, which made implementation smoother
- Easy-to-read documentation for the Solarisbank tech teams to work with
- Mature configurability (API- or UI-based) to enable greater flexibility
- Horizontal scalability through a microservices-based architecture and cloud deployment
- Dedicated support teams for the entire implementation
- Country-agnostic deployment support for greater strategic expansion

Implementation of the cloud core

Due to the nature of Mambu's SaaS cloud banking platform, implementation took only a matter of months. The actual migration happened over a weekend. The two teams were able to work with the platform's configurability to make the process more efficient and streamlined. Integration into the wider Solarisbank infrastructure was completed in an additional two months.

Solarisbank's first lending product launched on Mambu was Buy Now Pay Later (BNPL). Mambu Advisory provided insight into the opportunities and challenges with

BNPL and other lending services Solarisbank was looking to move to. This enabled them to refine their approach as they moved into new markets.

Overall, the project was broken up into two distinct phases. Phase 1 included the initial implementation. Solarisbank's goal was to get up and running with BNPL on Mambu with a live enterprise partner. The bank was able to do this in only four months without any critical incidents or performance issues. Phase 2 included the migration of all existing loans and loan products to the Mambu platform. This was done progressively throughout 2021 and included no downtime.

- **January 2020** – Planning begins for Mambu implementation.
- **April 2020** – Implementation of Mambu begins.
- **September 2020** – Closed beta version launch of loan products.
- **October 2020** – Go-live: new loans created in Mambu.
- **January 2021** – Phase 2 begins.
- **Q2 2021** – All existing loans migrated to Mambu.
- **June 2021** – All lending products migrated to Mambu.

The core team was six people from Solarisbank working directly on the implementation. All the teams involved with lending products were part of the project, including Compliance, Risk, Legal, Operations, and Finance.

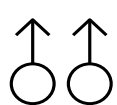
Managing Change

Solarisbank notes the importance of expectation management with BaaS partners during these migrations. Clear communication needs to take place from the infrastructure provider to the third parties, as changes will also need to be made at the partner end.

Results, Lessons Learned, and Future Plans

The implementation of Mambu and the launch of lending on a cloud-native, next-gen core platform has been a major enabler for Solarisbank's strategic growth initiatives.

Figure 3: Benefits of Moving Back Office Platforms to the Cloud



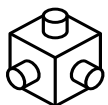
Scalability

- No longer limited in the number of loans they can provide.
- Horizontal scalability allowed for unlimited loans per day.



Time to market

- Configurable product creation broadens offerings.
- Easier to create and deploy in the market.



Integration

- Clear documentation allows for better integration going forward.
- Flexibility enables a more intelligent ecosystem approach.



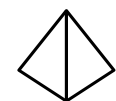
Cloud Support

- Cloud tools support IT groups in development of new capabilities.
- Lowers the time to value to deploy in new markets through Opex.



Functionality

- Mambu provided significant off-the-shelf capabilities.
- Easily able to support new markets or enterprises.



Reliability

- Mambu was familiar with the home market as well as potential strategic new markets.
- Cloud provided resiliency as changes are made.

Source: Celent

For Solarisbank, the benefits listed in Figure 3 above have created 40% to 60% growth in customers and accounts annually. Solarisbank has been operating for more than five years and continues to evolve to meet the needs of the market. Through a new cloud-native core platform, the bank is well positioned to move where the market is going.

Solarisbank wants to be known for the technology and infrastructure it provides to the market—and prefers to avoid being perceived as a bank at all. It's not serving retail banking customers who are accustomed to mediocre technology capabilities, but non-banks from multiple industries with a wide range of technical maturity. Excelling at technology is critical, and Solarisbank's deployment of Mambu and its homegrown BaaS platform has made it a model bank for core banking in the cloud.

COPYRIGHT NOTICE

Copyright 2022 Celent, a division of Oliver Wyman, Inc., which is a wholly owned subsidiary of Marsh & McLennan Companies [NYSE: MMC]. All rights reserved. This report may not be reproduced, copied or redistributed, in whole or in part, in any form or by any means, without the written permission of Celent, a division of Oliver Wyman ("Celent") and Celent accepts no liability whatsoever for the actions of third parties in this respect. Celent and any third party content providers whose content is included in this report are the sole copyright owners of the content in this report. Any third party content in this report has been included by Celent with the permission of the relevant content owner. Any use of this report by any third party is strictly prohibited without a license expressly granted by Celent. Any use of third party content included in this report is strictly prohibited without the express permission of the relevant content owner. This report is not intended for general circulation, nor is it to be used, reproduced, copied, quoted or distributed by third parties for any purpose other than those that may be set forth herein without the prior written permission of Celent. Neither all nor any part of the contents of this report, or any opinions expressed herein, shall be disseminated to the public through advertising media, public relations, news media, sales media, mail, direct transmittal, or any other public means of communications, without the prior written consent of Celent. Any violation of Celent's rights in this report will be enforced to the fullest extent of the law, including the pursuit of monetary damages and injunctive relief in the event of any breach of the foregoing restrictions.

This report is not a substitute for tailored professional advice on how a specific financial institution should execute its strategy. This report is not investment advice and should not be relied on for such advice or as a substitute for consultation with professional accountants, tax, legal or financial advisers. Celent has made every effort to use reliable, up-to-date and comprehensive information and analysis, but all information is provided without warranty of any kind, express or implied. Information furnished by others, upon which all or portions of this report are based, is believed to be reliable but has not been verified, and no warranty is given as to the accuracy of such information. Public information and industry and statistical data, are from sources we deem to be reliable; however, we make no representation as to the accuracy or completeness of such information and have accepted the information without further verification.

Celent disclaims any responsibility to update the information or conclusions in this report. Celent accepts no liability for any loss arising from any action taken or refrained from as a result of information contained in this report or any reports or sources of information referred to herein, or for any consequential, special or similar damages even if advised of the possibility of such damages.

There are no third party beneficiaries with respect to this report, and we accept no liability to any third party. The opinions expressed herein are valid only for the purpose stated herein and as of the date of this report.

No responsibility is taken for changes in market conditions or laws or regulations and no obligation is assumed to revise this report to reflect changes, events or conditions, which occur subsequent to the date hereof.

For more information please contact info@celent.com or:

Stephen Greer sgreer@celent.com

Americas

USA

99 High Street, 32nd Floor
Boston, MA 02110-2320

[+1.617.262.3120](tel:+16172623120)

USA

1166 Avenue of the Americas
New York, NY 10036

[+1.212.345.3960](tel:+12123453960)

USA

Four Embarcadero Center
Suite 1100
San Francisco, CA 94111

[+1.415.743.7960](tel:+14157437960)

EMEA

Switzerland

Tessinerplatz 5
Zurich 8027

[+41.44.5533.333](tel:+41445533333)

France

1 Rue Euler
Paris 75008

[+33 1 45 02 30 00](tel:+33145023000)

Italy

Galleria San Babila 4B
Milan 20122

[+39.02.305.771](tel:+3902305771)

Asia-Pacific

Japan

Midtown Tower 16F
9-7-1, Akasaka
Minato-ku, Tokyo 107-6216

[+81.3.3500.4960](tel:+81335004960)

Hong Kong

Unit 04, 9th Floor
Central Plaza
18 Harbour Road
Wanchai

[+852 2301 7500](tel:+85223017500)

Singapore

138 Market Street
#07-01 CapitaGreen
Singapore 048946

[+65 6510 9700](tel:+6565109700)