CELENT

RETAIL BANKING CORE SYSTEMS: NEXT-GENERATION CORE BANKING EDITION

2024 xCelent Awards, Powered by VendorMatch

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The following report is an excerpt of the full Celent report of the same name. While it is abridged (containing Executive Summary and selected profile), it has not been sponsored or altered by Tuum. Full report is available to Celent clients at www.celent.com

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EXECUTIVE SUMMARY

NEXT-GEN CORE BANKING PLATFORMS ARE GAINING TRACTION DUE TO A COMBINATION OF ARCHITECTURE EVOLUTION AND NEW MIGRATION PATH OPTIONS

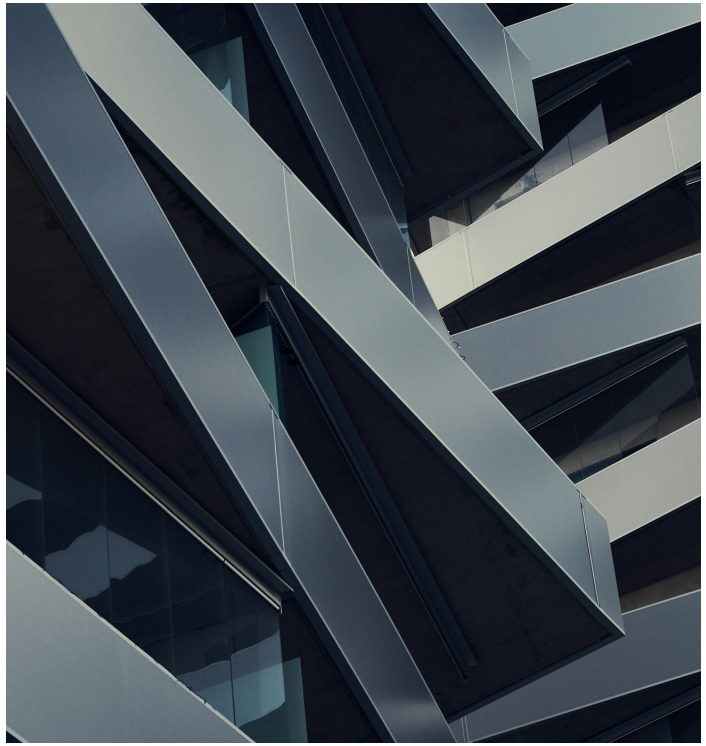
Core banking system (CBS) technology has witnessed a fundamental shift over the last five years. Next-generation core banking has become mainstream.

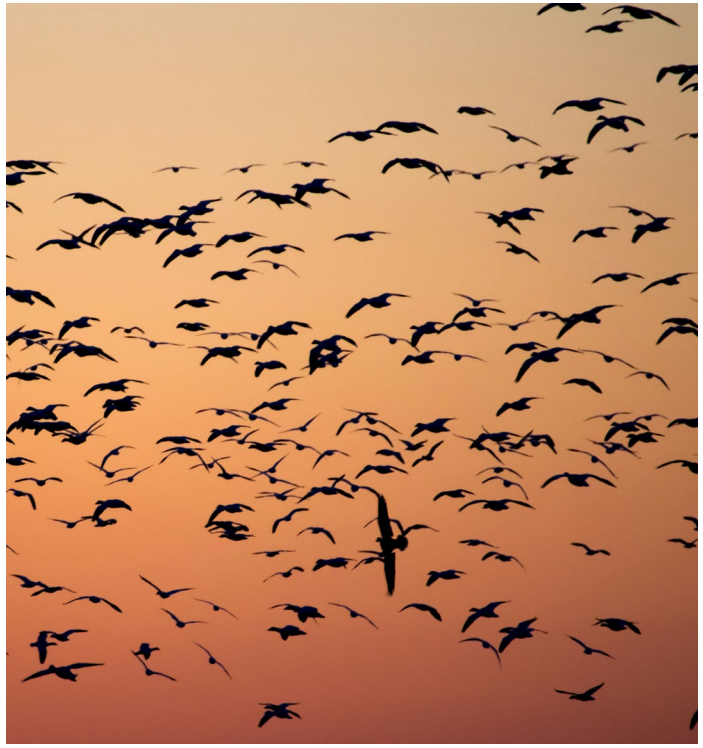
While the conception of some next-generation core platforms dates to the early 2010s, the last five years have seen a notable acceleration in interest across the banking sector, with maturing understanding of next-generation concepts and pervasiveness of live and in-progress deployments of next-gen cores. The market has shifted from early adopter to early majority phase, with consideration of next-gen cores (and certainly next-gen capabilities) common in CBS sector.

Though reasons are multifaceted, two key factors underlie this:

- The first concerns **architectural** developments and requirements with next-gen core presenting key answers to addressing many of the limitations and pain points with previous generation cores.
- The second concerns **transition**. Next-gen cores offer a wider range of modernization options, with lower upfront cost and reduced risk that has altered the calculation for the "stick or twist" dilemma that has held back modernization – in many cases for decades.

While next-gen cores are still maturing, and many incumbent CBS providers have responded, the core banking market itself has permanently changed.





ARCHITECTURE PRINCIPLES

Cloud-native, real time, API-first, microservices-based architectures leveraging continuous delivery, cloud computing, and event-based orchestration have changed dynamics around cost, speed, deployability, upgradability, and maintenance costs.

MIGRATION PATHS

Move from monolithic/modular platform to components and microservices has broadened modernization options, while ecosystem approach enables both greenfield and coexistence models

NEXT-GEN CORE ARCHITECTURE PRINCIPLES HAVE BEEN DRIVEN BY THE CONFLUENCE OF SEVERAL BUSINESS AND TECHNOLOGY TRENDS

DIGITAL BANKING

Rise of fully digital neobanks has reset expectations for real time, true end-to-end digital banking

EVERGREEN, CONTINUOUS DELIVERY, API-FIRST

Platforms are designed and built for implementation, ability to integrate into ecosystem, and continual change

CUSTOMER-CENTRIC PROPOSITIONS

Product and service propositions constructed around the customer, not built in product siloes

CLOUD NATIVE

Able to harness automation, scalability, security, availability, speed, and usage-based cost benefits of cloud computing

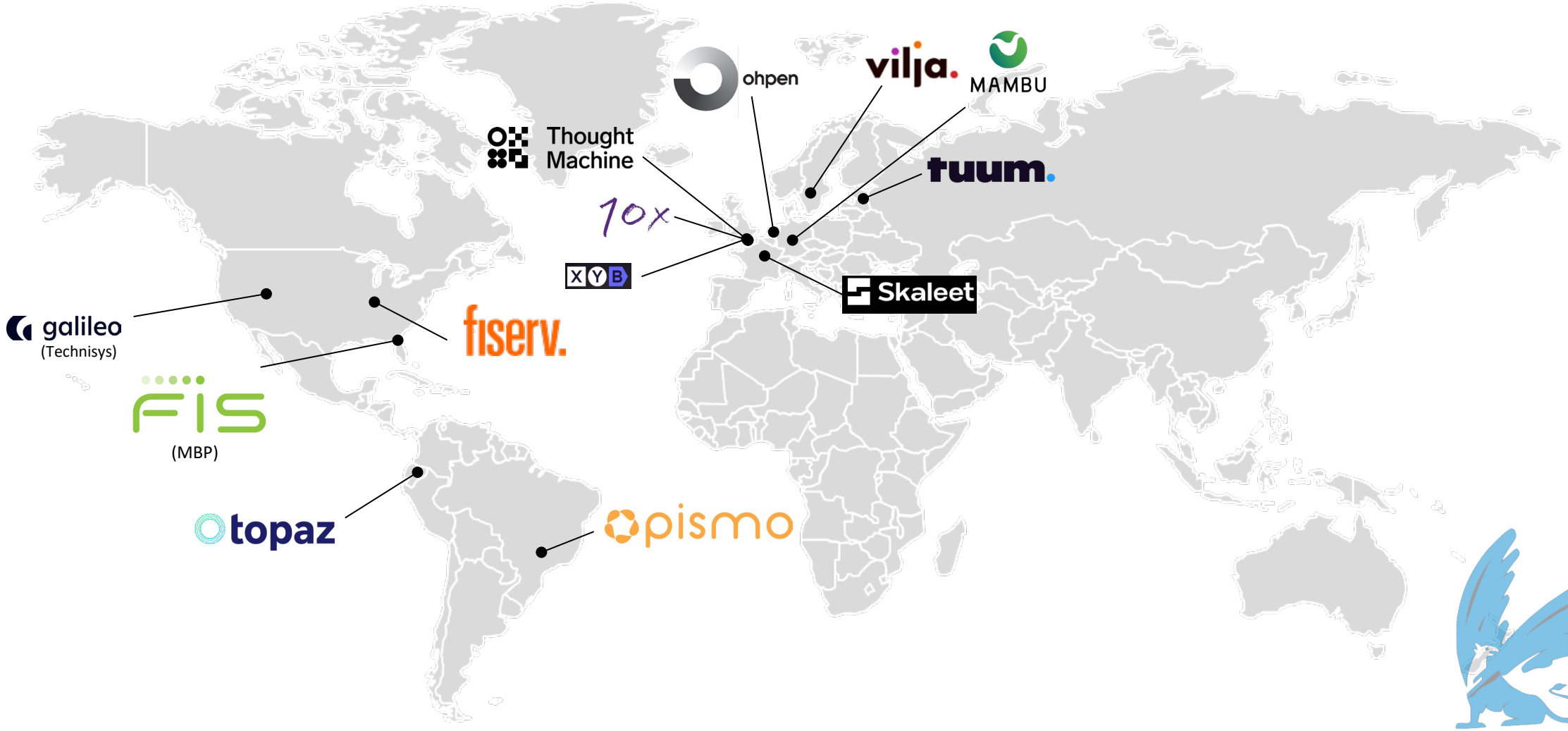
EVENT-DRIVEN, DATA INSIGHT

Propositions are smart — able to react to events — with data used to drive decisions and enhance service and engagement

COMPOSABILITY

Architected around capabilities, with building blocks that can be individually scaled and assembled/reassembled to meet business needs and enhance existing systems

CELENT HAS EVALUATED 13 NEXT-GEN CORE VENDORS WHICH OFFER NEW-BUILT, CLOUD-NATIVE BANKING PLATFORMS



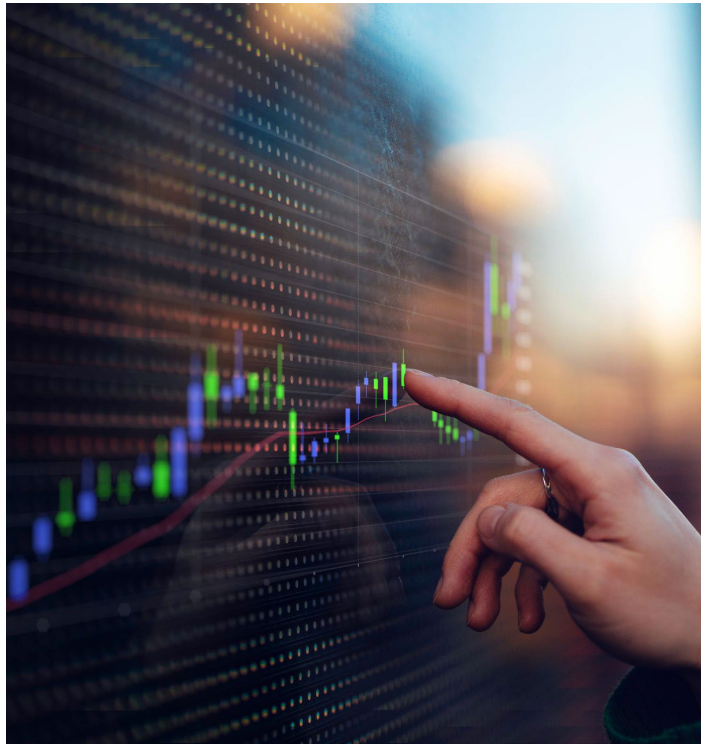
EMERGENCE OF NEXT-GEN CORE PROVIDERS HAS REFRAGMENTED A CONSOLIDATING VENDOR LANDSCAPE WITH DIVERSIFICATION OF PLATFORM TYPES

Next-gen core provider have refragmented the CBS landscape with creation of new market segments.

During the 2000s and early 2010s, there was significant consolidation in the CBS vendor landscape (in the US and international markets, respectively), with new deal win volumes concentrating within the top providers. These "modern traditional" platforms typically offered universal banking platforms with broad functionality across core banking, payments, operations, digital banking, and physical channels.

The emergence of next-gen providers has reversed that trend driving fragmentation of deal volume and emergence of more targeted and diverse propositions. Celent has identified key next-gen types:

- **Product cores** – often targeting larger institutions, these provide focused product functionality, typically covering product ledger, product management, although often supported by payment engines.
- **Broad cores** – supporting digital direct banks, providing product capabilities, digital onboarding, and card payments as well as enablement for digital banking.
- **BaaS platforms** – multi-tenant cores specifically targeting banks providing banking services through other institutions (Note that specific BaaS providers are **not covered** in this report, although many next-gen cores do support this market.)



BROAD CORES

Wide platform functionality supporting digital processes and products, especially neobanks, digital direct banks, and payment or electronic money institutions, with card issuing, digital onboarding and product processing (often stronger on deposits).

PRODUCT CORES

High performance product ledgers with advanced product creation and management, designed to support the complex products and top-end performance requirements of top-tier institutions, and work alongside wider enterprise architectures.

BROAD CORES TYPICALLY OFFER WIDER FUNCTIONALITY ACROSS THE BANKING ARCHITECTURE SPECTRUM, WITH PRODUCT CORES CONCENTRATED IN BANKING PRODUCTS

NEXT-GEN CORE FUNCTIONAL ARCHITECTURE MAPPING

- Diagram shows a stylized enterprise architecture mapping of key functionality areas that support a bank across front to back office.
- These have been mapped to indicate **typical** functionality provided by the two main types of next-gen core platforms: **product cores** and **broad cores.** While individual platforms do not necessarily fit completely or neatly into these categories, most providers have a primary functionality focus that aligns to one of these groupings.
- Note: **broad cores** also typically provide product core capabilities, i.e. their total functionality coverage is a combination of broad core and product core mapping.
- **Roadmap** coding (e.g., "Roadmap Product Core") shows where the respective type of next-gen vendors are typically prioritizing their functional R&D investment, although many have some capabilities in these functional areas already.
- **Additional modules** indicates where vendors often provide functionality, but this is typically provided either as an add-on to the primary core platform, or pre-integrated (with built adaptors) with ecosystem partners. Again, it should be noted that some platforms have these areas as part of the primary platform offering.
- **Non-core** functions are typically not provided as part of next-gen platforms but will integrate into them. While they may be provided through defined ecosystem partners in some cases, generally these will be systems directly obtained by institution rather than the vendor.
- It should be noted that platform functionality is not static and functional coverage develops and enriches over time (such as shown by roadmap areas). For example, some "Product Core" providers have developed payment engine capabilities as sister platforms or through strategic partnerships/acquisition.

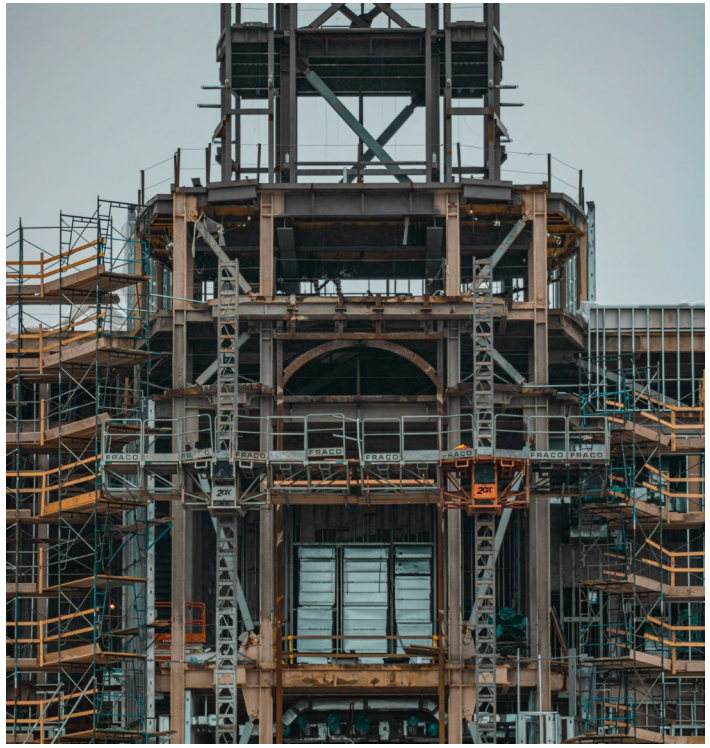
CELENT HAS EVALUATED THE NEXT-GEN CORE PROVIDER MARKET ACROSS FOUR VIEWS, CONSIDERING SIZE & STRATEGY, ALONGSIDE REGIONAL COVERAGE

The optimal choice of next-gen vendor depends on institution tier, modernization approach, and geographic coverage.

Given the fragmentation of the next-gen provider landscape, and the diversity of types and approaches, consideration of which vendors are most appropriate will depend on an institution's own characteristics and strategic approach to moving toward next-gen architecture. (While such consideration is salient when selecting any vendor, the relative maturity of the market makes it more so for next-gen cores).

Consequently, rather than a single evaluation, Celent has created four views:

- **Mid-large bank modernization** – Tier 1-4 banks looking to deploy next-gen cores as part of broader modernization (at least side-core, but with intent for migration)
- **Small banks & digital** – Tier 5-6 banks looking for next-gen cores, as well as specialist institutions, fintechs, or larger banks looking to create digital direct banks
- **Americas** – next-gen core providers that have primary go-to-market focus (and clients) within North, Central, or South America
- **EMEA & Asia-Pacific**– next-gen core providers that have primary go-to-market focus (and clients) within Europe, Middle East, Africa, or Asia Pacific



MID-LARGE BANKS

Banks above US$20 billion in assets, often with complex legacy architecture looking for cloud-based progressive renovation. Often looking for best-of-breed capabilities, with stronger functional preference weighting toward **product core** capabilities (e.g., product creation and management)

SMALL BANKS & DIGITAL

Banks below US$20 billion assets, specialty institution, or institutions looking for greenfield digital capabilities, often requiring broader capabilities and thus weighted toward **broad core** breadth. While may include migration, this is often relatively low volumes (e.g., in hundreds of thousands rather than millions)

NEXT-GEN CORES ALL HAVE CLOUD-NATIVE ARCHITECTURES, BUT EXPERIENCE AND TECHNICAL DEPTH STILL MATTERS

EVALUATION CONSIDERATIONS

- Next-gen core vendors have been evaluated using Celent's Technical Capability Matrix (TCM) – this considers relative strength across **Advanced Technology** and **Breadth of Functionality**.
- Note: Inclusion criteria required active **bank** clients using core banking capabilities for deposits or lending. This excludes some providers providing core banking capabilities only to nonbank sector (e.g. mobile money, fintechs). Other inclusion criteria also applied.
- Given all vendors are **'next-gen'** cores, it should be noted that level of technology capability required for inclusion is, by definition, **strong** (certainly compared to modern integrated cores). All cores will use cloud-native architectures and benefit from scalability and resilience of cloud computing (whether public or private). Given platforms have recently been developed, they similarly use modern languages and approaches.
- Evaluation is based therefore on **relative** maturity of technology and technical architecture, particularly considering proven experience (based on client deployments) in more complex scenarios.
- For example, has the vendor supported multi-region, or multi-cloud deployments? While most can benefit from cloud, how far has deployment gone is supporting more extreme volumes (e.g. 500k+ transaction per second), and what are the associated running costs of cloud infrastructure? These are weighted for the different institution types (mid-large bank, and small & digital) as appropriate.
- Conversely, as platforms are new, functional breadth and depth are often relatively low (compared to Modern Traditional platforms). When functional coverage and capabilities are evaluated across products and line of business, particular attention is paid to configurability, extensibility, banking product creation experience, product maintenance, and ability to support innovation and institutional agility. Again, functional capability breadth is weighted to reflect the needs of the institution type.
- For both dimensions, **live clients** using capabilities increases scoring. **Regional** positioning will also reflect this, which is why positioning may vary across the matrices while platforms themselves will be the same. A "Developing Solution" within a regional context would likely indicate relatively few clients within the region, although the platform itself would still provide merit for consideration.

TECHNICAL CAPABILITY MATRIX (TCM)

Five categories are based on the sophistication and breadth of its technology and functionality

I. **Luminary:** Excels on both Advanced Technology and Breadth of Functionality.

II. **Technology Standout:** Excels in Advanced Technology but doesn't yet have as many features as leading competitors (low on Breadth of Functionality). Often newer, these solutions typically have chosen a focused set of functionalities to begin their journey.

III. **Functionality Standout:** Excels in Breadth of Functionality, but the technology isn't as advanced as leading competitors. Often more established, these solutions have built out a robust set of features with technology that may not be cutting-edge.

IV. **Noteworthy Solution:** Relatively lower on both dimensions, yet still worthy of consideration by some financial institutions.

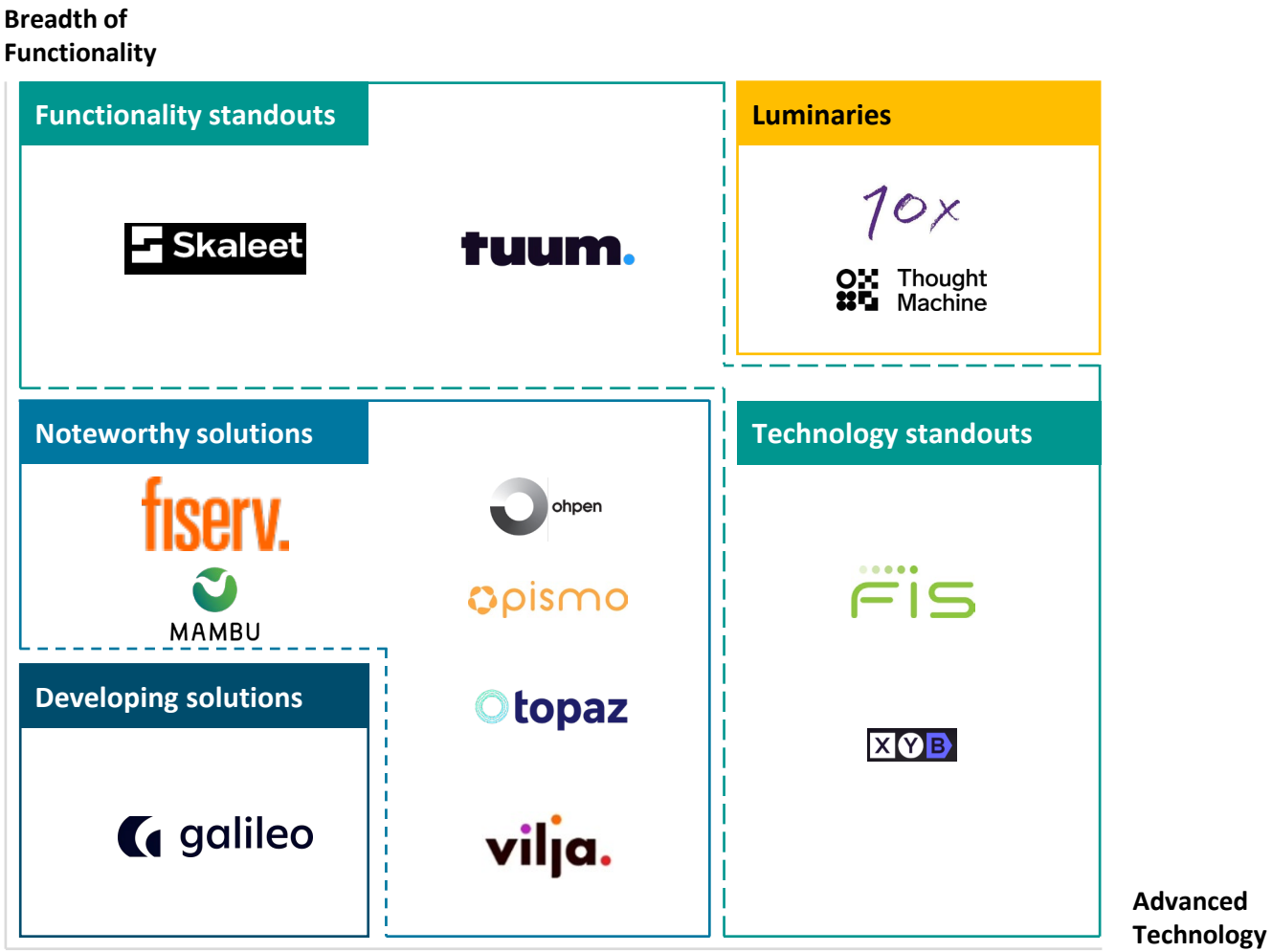
V. **Developing Solution:** Typically, new to the market and low on either Advanced Technology or Breadth of Functionality. Has the potential to mature into a more robust offering over time.

Solutions are not ranked within each assigned category; they are listed alphabetically.

TOP-LEVEL EVALUATION CRITERIA

ADVANCED TECHNOLOGY	BREADTH OF FUNCTIONALITY
Technical architecture; event-based, microservices	Functional availability across banking products and lines of business
Data models, data management, and ability to use data	Functional availability across banking platform
Integration approach and methods (including API strategy and approach)	Product creation and management
Platform configurability and development approach	Advanced product creation capabilities
Cloud deployment / SaaS capabilities	Platform user experience and speed
Scalability and performance	Ability to support regulation
Ability to support standard and emerging business models	Ability to support localization

CELENT TECHNICAL CAPABILITY MATRIX OF NEXT-GEN CORE BANKING PLATFORMS FOR MID-LARGE BANKS



Solutions are not ranked within each assigned category; they are listed alphabetically.

MID-LARGE BANKS

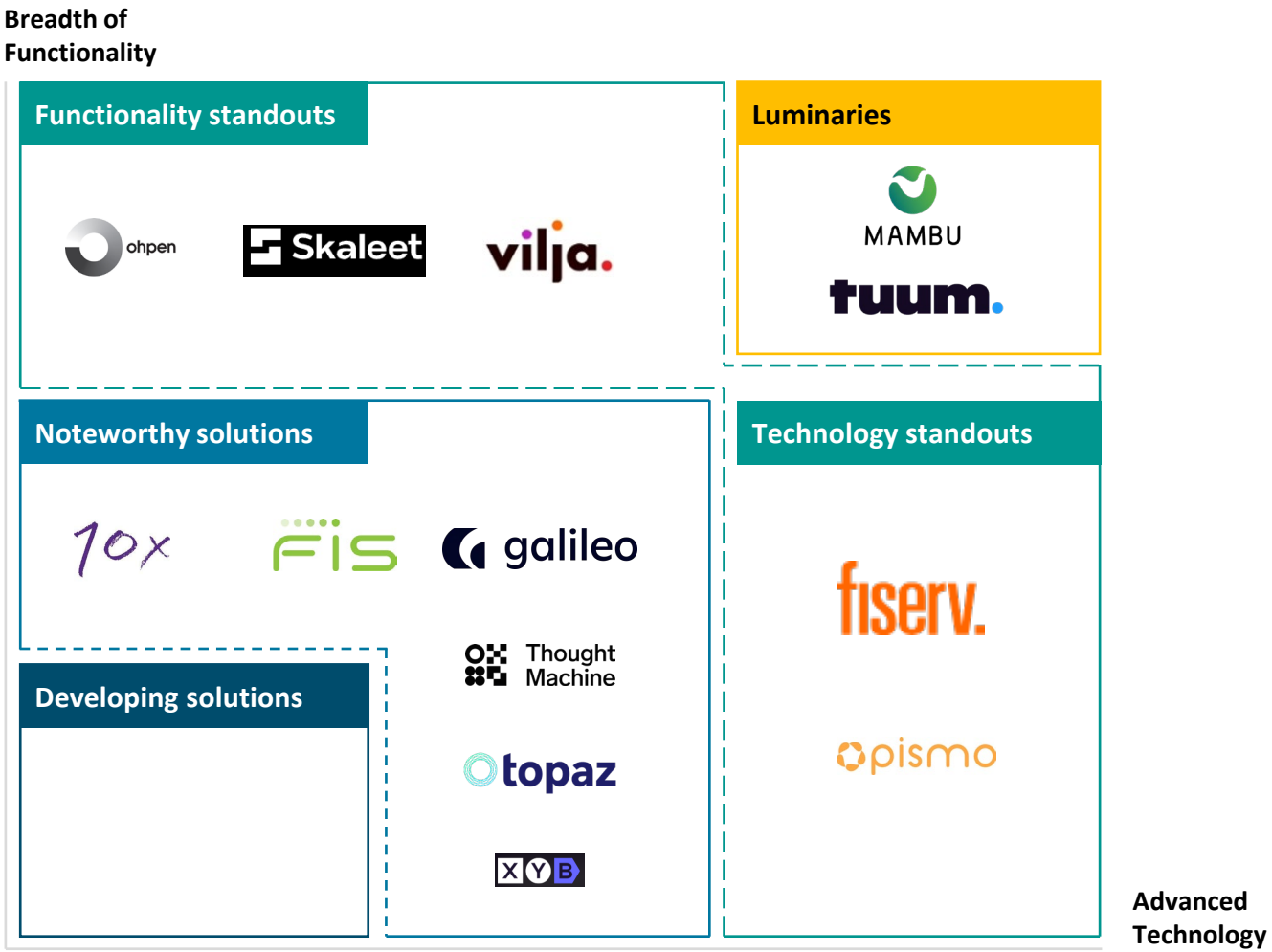
This Celent TCM considers typical functionality and performance requirements for next-gen cores for bank with over US$20 billion assets, with greater consideration of ability to support progressive renovation, advanced product creation, and banking product functional coverage. This weights functionality within banking products relatively highly.

The platforms deemed **Luminaries** are 10X Banking Platform (10X) and Vault (Thought Machine). Both are product cores, with strong product creation capabilities that can support the performance and transformation needs of large banks. Thought Machine has extensive client experience supporting a breadth of models. 10X Banking has top-tier client experience, with both providing strong product configurability and extensibility.

The platforms deemed **Technology Standouts** are MBP (FIS) and XYB Platform (XYB). MBP is a product core, built from scratch by FIS as cloud-native component base core. XYB is a recent entrant and is a broad core but has high performance characteristics and component granularity having been developed with top-tier clients.

The platforms deemed **Functionality Standouts** are Core Banking Platform (Skaleet) and Next Generation Core Banking Platform (Tuum). Both are broad cores, with wider banking product coverage, with Tuum strong in mid-market, and Skaleet strong in French-speaking markets.

CELENT TECHNICAL CAPABILITY MATRIX OF NEXT-GEN CORE BANKING PLATFORMS FOR SMALL AND DIGITAL BANKS, AND SPECIALITY INSTITUTIONS



Solutions are not ranked within each assigned category; they are listed alphabetically.

SMALL AND DIGITAL BANKS AND SPECIALTY INSTITUTIONS

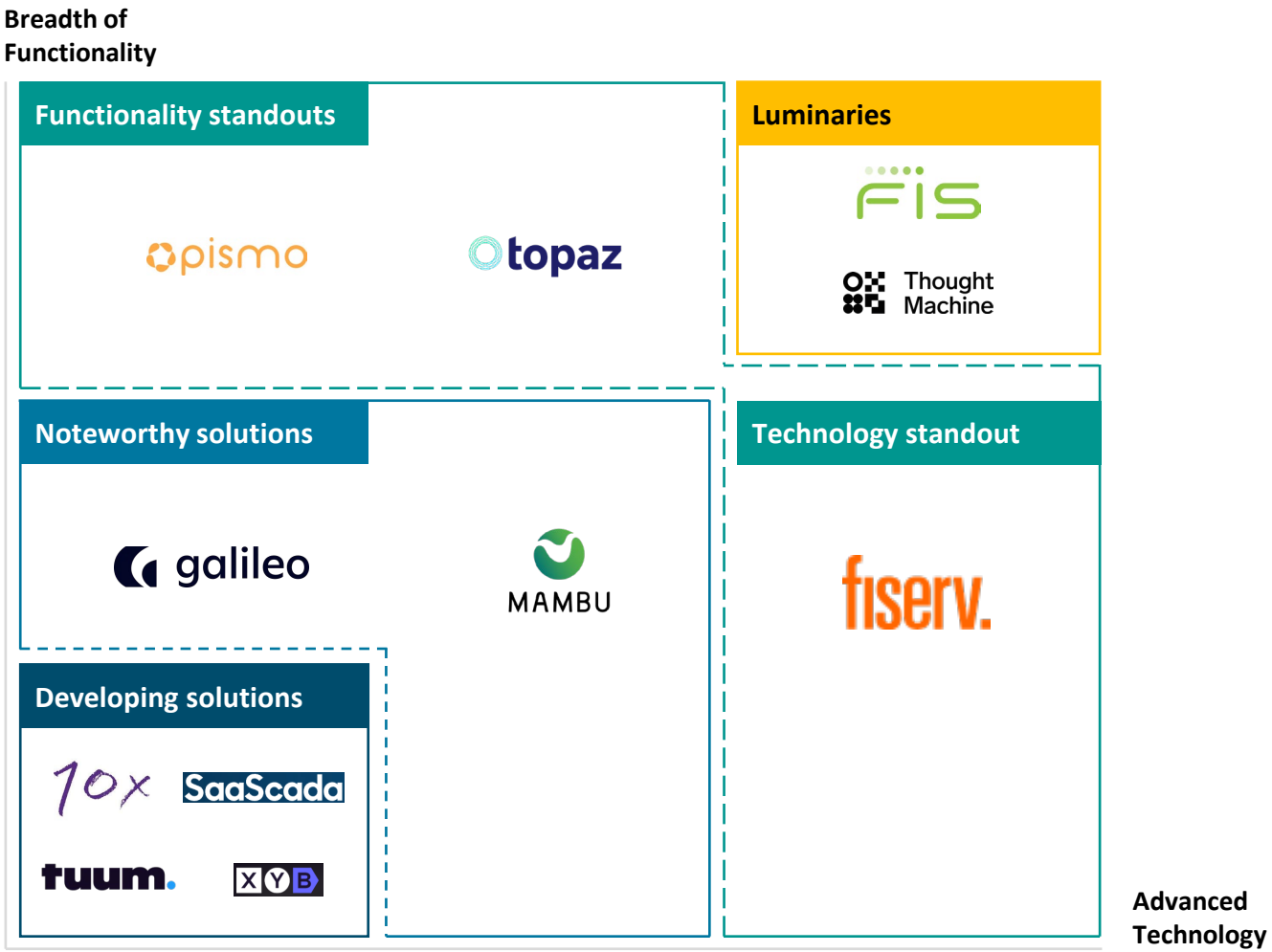
This Celent TCM considers typical functionality and performance requirements for next-gen cores for banks under US$20 billion in assets, covering traditional banks or specialty institutions. It also covers digital banks (neobanks or bank greenfield) regardless of parent asset size. This includes stronger consideration of the wider banking platform.

The platforms deemed **Luminaries** are Mambu SaaS Core Banking Platform (Mambu) and Next-Generation Core Banking Platform (Tuum). Mambu is a product core that offers a configurable platform which supports a wide range of institution types, with significant client experience and ecosystem network. Tuum offers a broad modular platform that also supports a best-of-breed model and gives users control of product development.

The platforms deemed **Technology Standouts** are Fiserv (Finxact) and Pismo Platform (Pismo). Fiserv Finxact is a product core (albeit supported with Fiserv's broader solution portfolio) which provides an event-driven, microservice architecture. Pismo Platform is a broad core with ability to support small and large digital banks with strong technology as well as cards capabilities.

The platforms deemed **Functionality Standouts** are the Ohpen Platform (Ohpen) and Next Generation Core Banking Platform (Skaleet) and Vilja Platform (Vilja). All are broad cores, with Ohpen offering depth in investments, pensions, mortgages, and savings. Skaleet offers strong payments capabilities, and Vilja offers strong origination and risk and compliance capabilities across retail, SME and commercial as well as mortgages.

CELENT TECHNICAL CAPABILITY MATRIX OF NEXT-GEN CORE BANKING PLATFORMS FOR AMERICAS



Solutions are not ranked within each assigned category; they are listed alphabetically.

AMERICAS

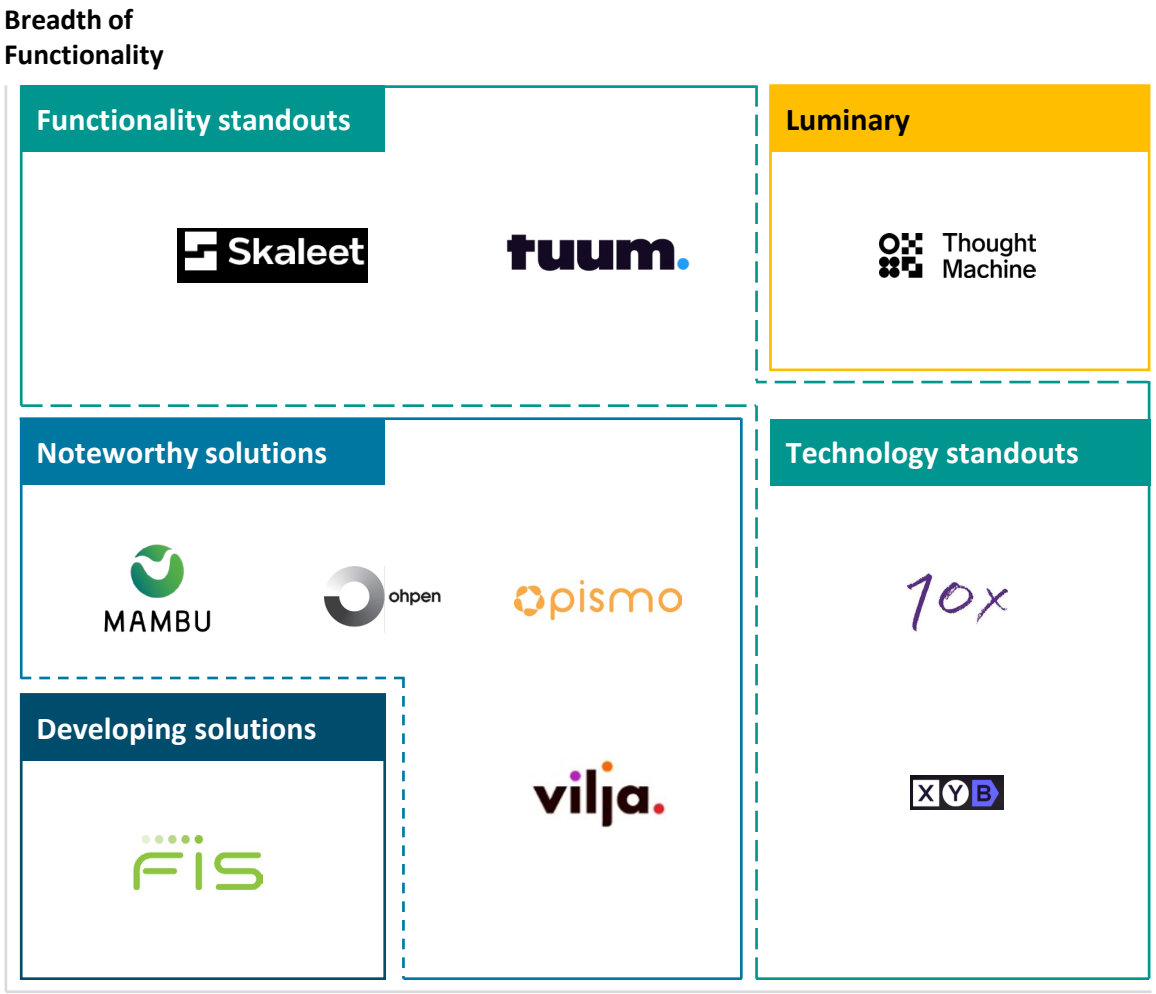
This Celent TCM considers typical functionality and performance requirements for all institutions operating with primary geographic presence in the Americas (North America, Central America, and South America). Note many vendors operate in either North America or Central & South America. Also note that evaluation includes relevance for small to large banks, specialty institutions, fintechs, and digital banks with consideration across greenfield, side-core, and migration deployments.

The platforms deemed **Luminaries** are MBP (FIS) and Vault (Thought Machine). Both have established client bases in the region, with FIS strong in North America and Thought Machine across both regions.

The platform deemed **Technology Standout** is Fiserv (Finxact) which has a North American-focused client base.

The platforms deemed **Functionality Standouts** are Topaz Core Banking SL (which is now part of Stefanini Group) and Pismo Platform (Pismo). Both have strong client bases in the South American market, although Pismo has also gained clients in North America.

CELENT TECHNICAL CAPABILITY MATRIX OF NEXT-GEN CORE BANKING PLATFORMS FOR EMEA AND ASIA PACIFIC



Solutions are not ranked within each assigned category; they are listed alphabetically.

EMEA AND ASIA-PACIFIC

This Celent TCM considers typical functionality and performance requirements for all institutions operating with primary geographic presence in EMEA region or Asia Pacific. Note that evaluation includes relevance for small to large banks, specialty institutions, fintechs, and digital banks with consideration across greenfield, side-core, and migration deployments. Most vendors here are European headquartered.

The platform deemed **Luminary** is Vault (Thought Machine), which also achieved the same positioning in the Americas.

The platforms deemed **Technology Standouts** are 10X Banking Platform (10X) and XYB Platform (XYB). 10X has client base across Europe and Asia Pacific, while XYB is currently primarily based in Europe.

The platforms deemed **Functionality Standouts** are Next Generation Core Banking Platform (Skaleet) and Next Generation Core Banking Platform (Tuum). Both have client bases largely in the European region.

CELENT XCELENT AWARDS WINNERS FOR ADVANCED TECHNOLOGY AND BREADTH OF FUNCTIONALITY ACROSS THE FOUR MAIN MARKET SEGMENTS

MARKET SEGMENT	XCELENT Advanced Technology 2024	XCELENT Breadth of Functionality 2024
MID-LARGE BANK	10x, Thought Machine	10x, Thought Machine
SMALL & DIGITAL BANK, SPECIALTY INSTITUTION	MAMBU, tuum.	ohpen, tuum.
AMERICAS	FIS, Thought Machine	FIS, pismo
EMEA & ASIA PACIFIC	10x, Thought Machine	Skaleet, Thought Machine

XCELENT AWARDS

Based on overall scores for advanced technology and breadth of functionality, Celent has selected the shown vendors as xCelent award winners. Given the diversity both with the vendor landscape and in market requirements, these have been divided into four segments:

- **Mid-large bank** - banks above US$20 billion assets worldwide, with particular consideration of the ability to support progressive transformation and advanced product creation and innovation weighted towards banking product functionality
- **Small & digital bank, specialty institution** – banks below US$20 billion assets, digital banks (neo- and direct banks for parents of all bank tiers), and specialty institutions with consideration of product capabilities and ability to support the digital bank and broader digital processes, with scoring weighted towards wider banking platform functionality
- **Americas** – all bank institutions (traditional, direct, and specialty, as well as nonbanks) operating primarily in North, Central, or South America regions
- **EMEA & Asia Pacific** – all bank institutions (traditional, direct, and specialty, as well as nonbanks) operating primarily in Europe, Middle East, Africa, or Asia Pacific

KEY VIRTUES CELENT SEES AS CRITICAL FOR CORE BANKING PLATFORMS – HYGIENE FACTORS REMAIN CRITICAL ALONGSIDE NEWER ARCHITECTURE PRINCIPLES

1		**Cloud-native** Ability to harness full elasticity, agility and automated provisioning of cloud	6		**Extensive automation** End-to-end process orchestration with high levels of STP
2		**API-first / ecosystem enabled** Openness to innovate with ecosystem at scale	7		**Continuous product innovation** High flexibility and configurability to able product innovation and management
3		**Data orientated** Ease of harnessing data to prove insight and improve outcomes	8		**DevOps pipeline** Ability to roll out and iterate innovations with speed
4		**Scalability** Ability to scale effortless to meet volume growth of digital and open banking/payments world	9		**Robust security** Security-first design supporting zero trust principles
5		**Component-based design** Enable iterative and rapid build	10		**Resilience** 24x7x365 with automatic and fast recovery

2

NEXT-GEN CORE BANKING PLATFORM PROFILE: TUUM

VENDOR SUMMARY: TUUM

BUSINESS OVERVIEW

Name	Tuum	**Product Name**	Next Generation Core Banking Platform
Founded	2019	**Original Release**	2019
HQ	Tallinn, Estonia	**Clients**	10-20
Website	tuum.com	**Platform summary**	Broad core
Revenue	US$10-20m*	**Primary deployment model**	SaaS managed service on public cloud
Employees	100-150	**Primary cloud partner**	AWS

TARGET MARKETS													
	Asia Pacific			Europe				MEA		Americas		
Regions	CA	SEA	OC	EE	NE	SE	WE	AF	ME	NA	CAC	SA
Tiers	Tier 1		Tier 2		Tier 3		Tier 4		Tier 5		Tier 6	
Institution types	Traditional banks		Neobanks		Fintechs		EMIs		Specialty		Other	
Line of business	Retail			SME		Corporate		BaaS		Other (wealth)		
Key markets	UK and Nordics, as well as continental Europe											

Primary
Secondary
Tertiary
Nontarget

STRATEGIC POSITION

Platform Overview

Tuum is a relatively new next-gen core banking provider that has managed to achieve rapid traction since its inception in 2019. The company was founded in Estonia by a combination of banking and technology experts, with the aim to provide a modular core banking platform that was API-first, cloud agnostic, and highly configurable without coding. Initially launched as Modularbank, the company rebranded in 2021 to Tuum (which means “core” in Estonian) to make clear that it is a banking technology platform provider.

It offers a customer-centric, single platform that delivers broad but modular capabilities across accounts, payments, lending, and cards to support a variety of institutions, including banks, BaaS providers (including LHV, Zenus Bank, and Multitude), embedded finance, digital lending specialists, fintechs, and payment institutions. In this, its current short-term target clients are Tier 3–4 banks, scaled-up fintechs/ BaaS providers, and large lenders, but it has large bank clients and ambitions to develop to support higher tiers. Its main client base to date is in Europe, but it is expanding into the MEA (developing Islamic banking) and LATAM regions (leveraging partnership with NTT Data), with expansion into Asia-Pacific also likely on the near horizon.

Position against competitors and philosophy

The Tuum platform was built from the ground up using microservices, and being API-first, it is designed to be highly flexible, fitting into a best-of-breed ecosystem model while also offering a broad range of modules. This has given it a wide reach, able to support a specific business area (such as lending) or offer a complete banking platform, enabled by a pre-integrated ecosystem of partners in many geographies. Similarly, while it is primarily delivered as a SaaS managed service on AWS, it is cloud agnostic and has deployments with alterative cloud providers and on private cloud

The platform is designed to provide fine-grained, no-code configuration without customization that allows business users to have control of banking product development. It also offers “Xtensibility,” which allows institutions to develop and control their own IP within a controlled environment to sit alongside the Tuum core, which can also be incorporated into Tuum’s optional process orchestration engine.

Marquee Clients

FUNCTIONAL DETAILS: TUUM

tuum.

PLATFORM NAME: NEXT GENERATION CORE BANKING PLATFORM

PLATFORM SCOPE

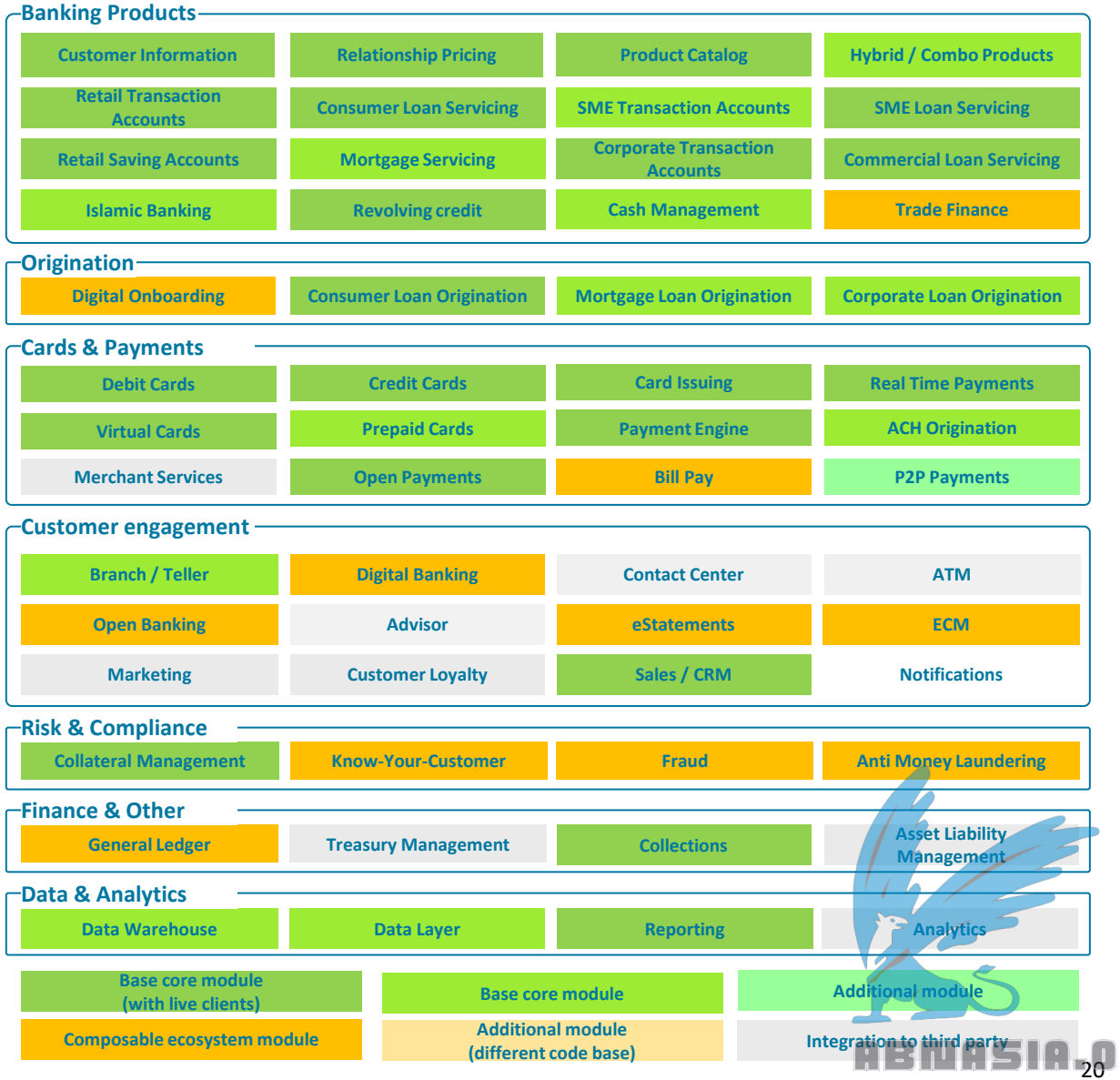
Broad core, including lending, cards, payments, and accounts

FUNCTIONAL DIFFERENTIATORS

1. One platform to support multiple use cases - accounts, lending, payments, cards, embedded finance, BaaS
2. Highly configurable, with new propositions able to be launched in weeks
3. Microservices architecture, allowing independent, highly efficient scale of services
4. API-first approach – supporting ecosystem development, with low vendor lock-in
5. Cloud native and agnostic, with continuous deployment meaning platform is always up to date
6. Modular platform allowing progressive migration/modernization
7. Comprehensive system architecture and scope
8. Deployment options best suited for the client, being able to support private and public cloud
9. Quick integrations and pre-built connectors, with pre-integrated ecosystem partners
10. Intuitive back-office user interface
11. ISO 27001 certified
12. PSD2 compliant, SOC2 compliant

ROAD MAP PRIORITIES

1. Enhance and deepen offering in retail, including notice accounts and withholding, as well as lending and deposit capabilities to support Tier 1 institutions.
2. Enhance SME capabilities around group accounts, cash pooling, and credit lines, and deepen treasury & cash management, working capital management, and structured products.
3. Develop Islamic Banking capabilities to target MEA market.
4. Regionalization for core and new territories, including language support and local regulatory needs for MEA and LATAM, as well as Asia-Pacific in medium term.
5. Achieve full enterprise-grade platform status around security certifications, finance and treasury function support, data and analytics, and regulatory reporting, with longer-term ambitions to develop AI and machine learning.



TECHNICAL OVERVIEW: TUUM

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The Tuum platform is a cloud-native, API-first, and microservices-driven platform offering high flexibility and scalability. Tuum is based on the following architectural principles: 1. Microservices architecture using domain-driven design patterns. 2. Each module is a separately deployable application with a separate database. 3. Cloud agnostic using Kubernetes deployment. 4. Inter-application communication done asynchronously using messaging instead of direct REST calls. 5. Modules offer services via REST APIs. 6. All applications are stateless for easy scalability using cloud native technologies. 7. Only open source technologies for flexibility. 8. Java ecosystem and Spring framework for enterprise requirements. 9. Asynchronous near real time business event processing through messaging instead of batches.

PLATFORM

Code Base	100% Java
Process Type	Real time event-based
Batch Support	Tuum is 100% real time and event driven; however, there are "end-of-day" processes embedded across all modules to accommodate the change of banking day. This is needed because there are some obvious events that only happen once a day. Examples would be invoice generation, posting of interest accruals, etc. There is no downtime, however; clients can continue their day-to-day activities while these end-of-day processes are being executed.
Core Code Modification	Single platform for all clients
Interface	Tuum back office UI is for client employees and built using React JS. This UI can be used to create, manage and service products, customers, contracts, etc. All modules can be exposed via this UI.

DATA

Databases Supported	PostgreSQL
Data Schemas	The database was designed from the ground up for this product and is proprietary to Tuum.
Polyglot / Temporal Data	Not supported / Supported
Extending Data Model	At present, only with the use of custom fields. Tuum does however have a project ongoing in 2024 to offer degrees of extensibility in this area, so news is expected on this very shortly.
Data Model Governance	Since the data model is proprietary, customers are not included in this process. Tuum's head of product and the product leads are responsible for its governance.

INTEGRATION

Approach to Integration	All Tuum modules are accessible via RESTful APIs, allowing for integration as per client requirements. Tuum relies on clients to partner with integration providers and enable secure integrations to its APIs. The APIs use a JWT token-based authentication scheme.
Integration Methods	JSON, MQSeries, JMS or similar queue technology, custom APIs
% Exposed as APIs	100%
API management	Every module and supporting module has its own dedicated API. Documentation can be found here, along with API cookbooks to assist client IT teams: https://developer.tuumplatform.com/getting-started#api-sandbox

CUSTOMER BASE AND DEPLOYMENT MODEL: TUUM

tuum.

CUSTOMER SUMMARY SHEET

Tuum primarily targets Tier 2–4 banks, lenders, institutions looking to provide BaaS propositions, and fintechs looking to scale up. Currently primarily retail but extending into commercial banking.

Retail banking client base is predominantly in Northern Europe but has a wider client base across Europe with presence in Americas. Growth focus (outside Europe) now on Middle East and Latin America (through partners).

While relatively new, Tuum has maintained very strong growth since inception both in client base and recurring annual revenue

Tuum also support payment & electronic money institutions given its cards and payments capabilities

PRICING MODELS

✓ Preferred
○ Additional

- ✓ Subscription
- ○ Term License
- Perpetual License
- Other

PRICING FACTORS

- ✓ Per Transaction
- Per User/Seat
- Asset Size
- ✓ Per Module/Service

CLOUD SUPPORT

- AWS is the default for Tuum's SaaS offering; however, the platform is cloud agnostic.
- Tuum is deployed fully as a SaaS offering and all support of the solution and environments is therefore Tuum's responsibility.
- Tuum can and has supported clients requiring platform on private cloud deployment.
- Tuum does support multi-tenant architecture deployment, working with a number of BaaS providers, but deploys its own SaaS clients on a single-tenant basis.
- Each of its clients has its own dedicated instance, with DEV/test, UAT, and PROD environments as standard.

✓ aws
✓ Azure
✓ Google Cloud
IBM **Cloud**
✓ ORACLE Cloud

✓ *At least one client* ✓ *Supported*

INSTALLATIONS BY SIZE

By Assets

✓ *At least one client*

Tier One: $<500bn	✓ Tier Five: $1-$20bn
✓ Tier Two: $100-$500bn	✓ Tier Six: <$1bn
Tier Three: $50--$100bn	Credit Unions
Tier Four: $20-$50bn	✓ Specialty Institutions

INSTALLATIONS BY REGION

Asia Pacific	Americas	Europe	MEA
Central Asia	✓ North	East	Africa
✓ South East Asia	✓ Central	✓ North	Middle East
Oceania	✓ South	✓ South	
		✓ West	

CONFIGURATION, LOCALIZATION, AND PARTNERSHIP: TUUM

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APPROACH TO REGULATORY SUPPORT AND LOCALIZATIONS IN NEW MARKETS

- The platform has been implemented and tested against a wide variety of regulatory environments, including GDPR, FATCA, IFRS, FINMA, BaFIN, GAAP, and CAAS.
- Tuum is currently developing regionalization for regulatory support for Middle East and Latin American regions, with plans to develop support for Asia-Pacific region in the medium term.
- The system collects and manages internally generated compliance data for internal compliance/audit and external regulator and investor requirements.
- The system performs compliance tests and creates reports for multinational regulatory requirements.

PLATFORM CONFIGURATION

- Tuum follows a principle of "customization through configuration" methodology where it has ensured that the solution can be "configured" via API or UI without the need for coding or specialist IT resources.
- This can be enhanced through its Core Xtensbility framework, where banks can build their own IP within a controlled environment to sit alongside the Tuum core, which can also be incorporated into Tuum's optional process orchestration engine.

CI/CD	Supported
Versioning	Continuous releases, with 3-week release cycle
Testing	A standard way of testing the system using common tools and provide a set of pre-built tests
Upgrades	Not applicable as continuous releases

PRODUCT/PRICING CONFIGURATION

- A key principle of the solution design is that of "self-service." Clients are free to service all the elements below and many more with little to no assistance from Tuum.
- Clients are trained in the use of the solution to create their own products with minimal support needs. This ensures clients can be incredibly nimble and flexible to customer and market demands, launching new propositions at market-leading speed.
- Banks can create new products, modify pricing and interest structures, update lookup tables, create and maintain financial accounting configurations using its developer toolkit or APIs, and create new APIs for new integrations.
- Banks can add to this list items such as adding users and modifying security or creating and modifying custom fields.

- ✓ Enterprise-wide product designer
- ✓ Centralized product repository
- ✓ Customer-specific pricing
- ✗ Pricing based on households
- ✓ Regional pricing
- ✓ Analytics on top of pricing
- ✗ Promotions on products and services
- ✗ Rewards programs on products

IMPLEMENTATION PARTNERS (NON-EXHAUSTIVE)

publicis sapient, NTT DATA, McKinsey & Company, wipro, accenture, EY, Deloitte.

FINTECH/FUNCTIONAL PARTNERS (NON-EXHAUSTIVE)

BACKBASE, Fourthline, Currencycloud, SALTEDGE, Formpipe, Wolters Kluwer, paymentology, 2innovate, numeral, exate, ABC TECH, CREALOGIX

CLOUD-NATIVE TOOLS

RabbitMQ, CAMUNDA, docker, MyBatis, PostgreSQL, kubernetes, spring, React

IMPLEMENTATION APPROACH: TUUM

IMPLEMENTATION

Preferred Implementation Approach

Implementation Approach The Tuum implementation approach focuses around 3 pillars:

- Collaboration: Tuum, client, and partners (if involved) form a unified team to achieve a timely and successful go-live. All parties work together with clear objectives and well-defined plans.
- Agile Methodology: Tuum employs an agile, iterative approach to enhance flexibility and responsiveness throughout implementation.
- Transparency: Open communication and visibility are essential for smooth project delivery.

Team size and composition:

Project squad depends on the scope of the implementation; however, the standard roles include:

1. Implementation Manager: Main point of contact leading all phases of the implementation project, from planning the onboarding journey through configuration workshops and troubleshooting, until the go-live and handover to the support team.
2. Specialist(s)—support the implementation manager in different areas of expertise, including:
    - Lending
    - Payments
    - Cards

    Other SMEs, based on need, could involve DevOps, product owners, tech leads, solution architects, etc.
3. Head of Implementation, overseeing project execution and serving as a point of contact for escalations and critical issues.

Key Milestones:

1. Planning & Kickoff: Establishes project goals, scope, responsibilities, risk mitigation, and communication protocols.
2. Technical & Functional Enablement: Conducts requirement sessions, aligns terminology, addresses gaps, and provides system configuration training & workshops.
3. System Integration (led by SI if involved): Involves requirements analysis, interface design, integration testing, and deployment.
4. UAT: Supports end-to-end testing, troubleshooting, final configurations, and end-user training.
5. Go-Live & Hyper-Care: Finalizes project with a transition to support for ongoing success.

INITIAL INSTALL

Typical implement. timing	3-9 months
Team size and composition	11-15
Implementation approach	Regularly work with third-party system integrators
Typical staffing composition	**Bank** **Vendor** **External services**
Migrations	Tuum has support for greenfield, coexistence and core migration projects. It has developed a smart migration approach, using data import APIs to migrate customer, account and transaction data.

KEY BENEFITS & CELENT EVALUATION: TUUM

KEY BENEFITS

- Fast, predictable, low-risk, smart migration approach overcoming legacy constraints enabling banks to transform progressively
- Speed to market of customer-centric products and services
- Unlock new revenue streams and business models, such as embedded finance and BaaS
- More Than Core—broad coverage across business use cases, rich functionality out-of-the-box
- Business Builder—fine-grained, no-code configuration without customization
- Core Xtensibility—build your own IP within a controlled environment
- Ecosystem orchestration—pre-integrated, end-to-end "blueprints" by geography and use case, ease of integration to a wide ecosystem of best-of-breed providers and 3rd party systems
- Modules that can be deployed independently—pay for what you need
- Scalable to grow with your business—ability to handle large mass volumes of transactions in real time
- Continuous innovation with regular release cycles, reducing the cost of ownership
- Future-proof based on modern technologies
- A platform built by industry experts with decades of banking tech experience

CELENT OPINION

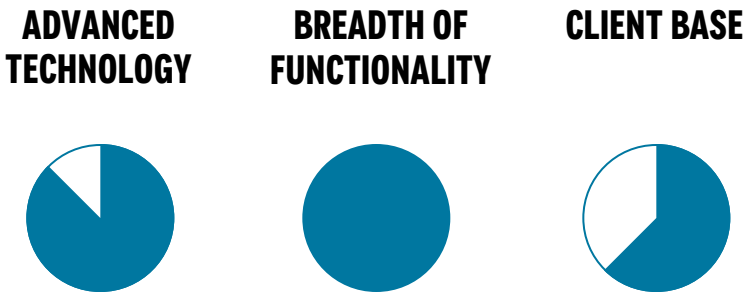
Tuum has become a leading next-gen challenger, combining technology with a platform that enables business users

While Tuum is a relatively new next-gen entrant, it has emerged as a leading challenger to some of its more-established next-gen peers (primarily in the European market to date), combining a strong underlying technology architecture with a flexible deployment model and a broad platform that is easy to integrate and configure and that enables business users to innovate products and explore new business models.

Its current sweet spot contains Tier 3–4 retail institutions, lenders, and fintechs looking to develop new capabilities (such as digital lending / embedded finance) and seeking a balance between modern technology, ease of use and deployment, and cost. However, it has now also has established expertise and experience in managing more complex core migration and is developing capabilities in SME and Islamic banking. That said, in the short term, this may work best in these new areas for banks keen to develop with and innovate with a partner, rather than those who want full out-of-the-box functionality—although on the retail/payment institutions side, it would be able to support the lower end of the market here. For the top end of the market, Tuum does offer "core Xtensibility" to cater to more demanding situations where configuration alone might be limiting, although it's realistically better suited for Tier 2 institutions seeking to use the vendor platform in most cases rather than develop extensively in-house.

While it has a broad platform compared to some of its more "narrow-core" next-gen peers, Tuum is a modular platform and actively works within the ecosystem model, which allows banks to choose to use the platform for specific use cases or as part of a progressive modernization journey. Similarly, while Tuum merits strongest consideration for European institutions, it is actively expanding into the Middle East and Latin America (directly / through close partnerships), which means it would be worth a look in these regions.

CELENT EVALUATION



Luminary

SMALL AND DIGITAL BANK, & SPECIALITY INSTITUTION

Functional standout

MID-LARGE BANK

EMEA & ASIA PACIFIC

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Advanced Technology 2024
SMALL AND DIGITAL BANK, & SPECIALITY INSTITUTION

CELENT
Breadth of Functionality 2024
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APPENDIX

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Continuous Digital Transformation in the Cloud: Next Generation Core Platforms

Developing Next-Generation Retail Banking Pricing Strategies

Retail Banking IT Spending Forecasts by Technology 2024–2029

Dimensions: Retail Banking IT Spending By Domain 2024-2029

OP Financial Group: Consumer Lending Core Renewal

UnionBank of the Philippines: Migrating Core Banking to the Cloud

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