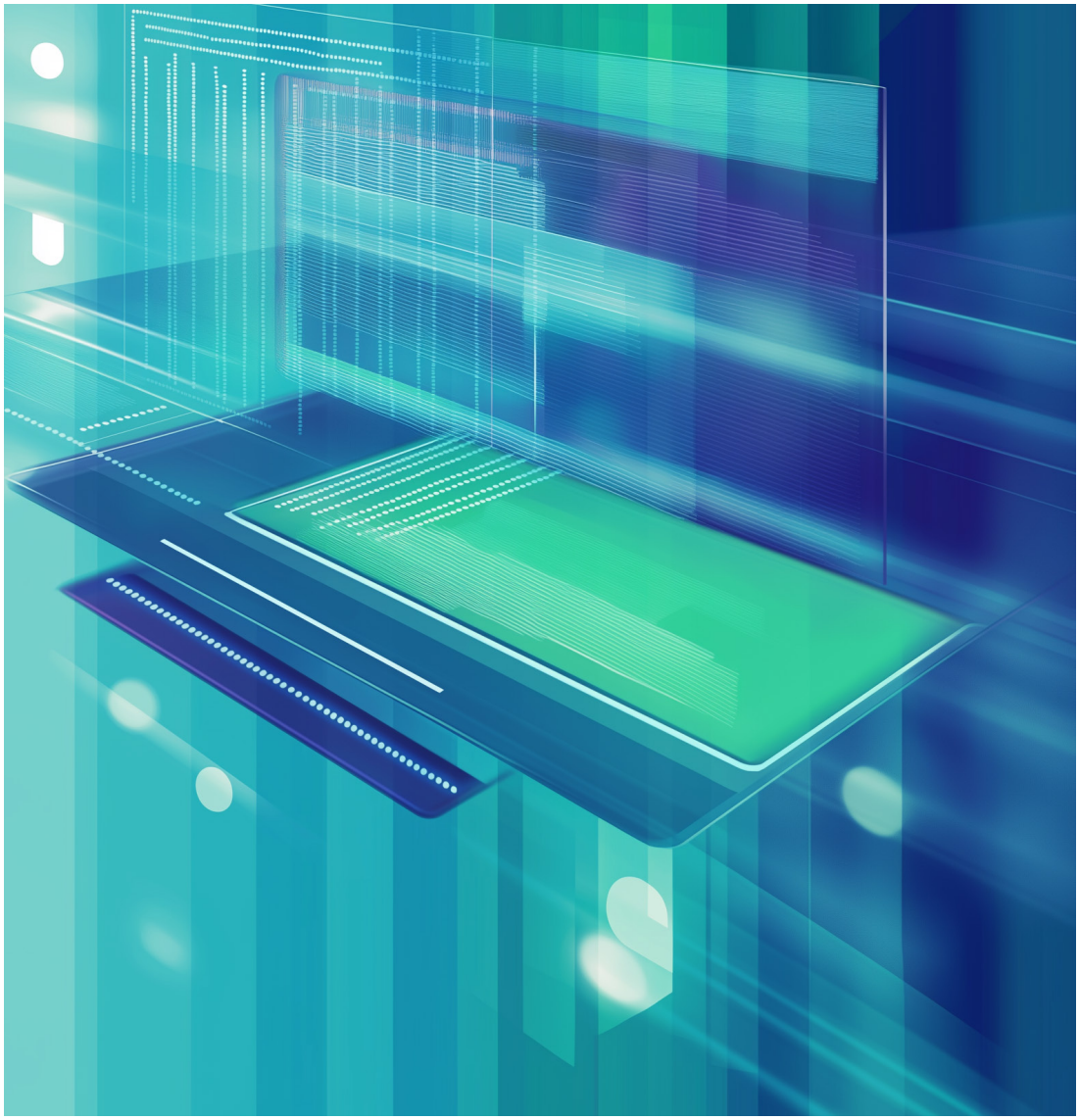
White Paper

Data Architectures to power modular banking

The essential steps behind the most successful modern banking architectures



ti&m

In this white paper, we show which technological and organizational approaches banks can use to create agile and efficient structures and processes in order to access data flexibly and utilize it for new use cases.

Data as an enabler for various developments in banking

Banking is characterized by three major areas of innovation:

Personalization and customer journeys:
Banking is increasingly moving towards personalized content and products tailored specifically to segments and customers. For banks, this means that relevant content must be quickly and easily accessible, suitable offers must be displayed at the right time and in the right place, and tips and help must assist customers when needed. This not only supports the purchase of additional products, but also forms the basis for better customer journeys that are geared towards customer needs.

Ecosystems:
In parallel to individualized content, ecosystems and partnerships across company boundaries are becoming increasingly important. In this area, banks are seeking their future role and experimenting with new service offerings and extended value chains with the aim of offering customers their own or partner products in line with their needs.

Automation in the back office:
Time doesn't stand still in the back office either. The automation of complex tasks is becoming increasingly sophisticated. This optimizes processes such as data analysis, compliance checks and risk analyses and results in better service quality and improved operational efficiency.

All of these approaches are largely based on the intelligent and effective use of existing bank data. With the existing data in their core banking system and within the framework of the ecosystems created, banks today have a very extensive and valuable database that can be used for the described fields of innovation. To implement such use cases, it is essential to critically analyze the necessary data basis and seek ways to improve data usage. Three elements are crucial here:

- ***Data quality:*** *Data must be complete, correct, accurate and up to date.*
- ***Data access:*** *Banks must set themselves up technologically and organizationally in such a way that teams can access data quickly and easily.*
- ***Data usage:*** *What do I do with the data? Teams must have the freedom and technological skills to develop ideas and implement projects sensibly and efficiently.*

"Banks must give strategic priority to the management and architecture of their data at a technical and organizational level."

Challenges in handling data

Access:
In addition to identifying and processing the relevant data for possible use cases, the major challenge today is to be able to access the data efficiently and effectively. At banks, the majority of customer-relevant data is stored centrally in the core banking system. However, access is often complex and cumbersome: Interfaces are needed to extract information from the core banking system, and these usually offer inadequate response times and technical capabilities. In addition, more and more data also exists outside the core banking system. For a complete customer analysis, this data has to be merged with the core banking data in a correct and meaningful way.

Processing:
Data must be cleansed, structured and prepared for further processing. To do this, banks need modern data platforms that teams can access across organizations in order to work collaboratively on data-based projects.

Business vs. technology:
An additional challenge is that the areas involved speak different languages (business vs. technology). Normally, the business side defines the technical requirements and how these requirements can ideally be supported with data. The technical side is basically responsible for making the data available and usually knows the details and pitfalls of the systems used better than the business side. The data changes accordingly during the development process – and, in the worst case, so does the initially defined use case. This sequential approach is slow and resource-intensive and often does not lead to the desired results.

Technological and organizational solutions in practice

We recommend various approaches, which should ideally be used in combination.

Decoupling core bank data through modern integration solutions
A modern data architecture must be able to extract data from core banking systems and other systems and make it available for various use cases. The problem is that the monolithic structure of core banking systems is designed for stability and security, which makes it difficult to transfer data into flexible architectures. Legacy systems require specialized interfaces to provide data for external systems. By using advanced integration solutions, banks can bring together previously dispersed data, gain deeper insights into customer behavior and use these as the basis for digital user journeys.

Providing interfaces with a flexible and configurative approach
Efficient, microservice-based integration approaches for core banking systems make it possible to merge data from core banking systems and peripheral systems entirely through configuration and to adapt it precisely to specific requirements using flexible filter and restructuring functions. This enables quick and easy creation of customized APIs for specific use cases. This approach utilizes a reusable database for different services and requires hardly any additional infrastructure resources for further services after the initial installation, which considerably simplifies the development of new functionalities. Thanks to the configurable structure, developers and business stakeholders can work together quickly and efficiently. This in turn promotes productive feedback loops and accelerated coordination.

“Banks must not only be able to access relevant data flexibly and agilely, but also ensure that the data is available to their teams across organizations for new use cases.”

Using modern data platforms for collaborative business intelligence

The complexity and fragmentation of modern data landscapes pose problems for many organizations. Data is often organized decentrally, is laborious to process, and requires complex processes that are difficult to scale. Static dashboards offer little room for interactivity or collaboration, and the lack of documentation of measures and decisions means that data is processed further in other tools. This results in a loss of context and a lack of comprehensibility.

Modern data platforms should not only visualize data, but also map complex processes on interactive and personalized dashboards and create an environment in which teams can work on data-based projects across departments. Thanks to these dynamic, collaborative and transparent workflows, projects can be planned and implemented directly in the platform without having to leave the data environment and process data in other tools. From data extraction, storage and processing to visualization, such central business intelligence platforms offer all the building blocks that companies need to organize and use their data.

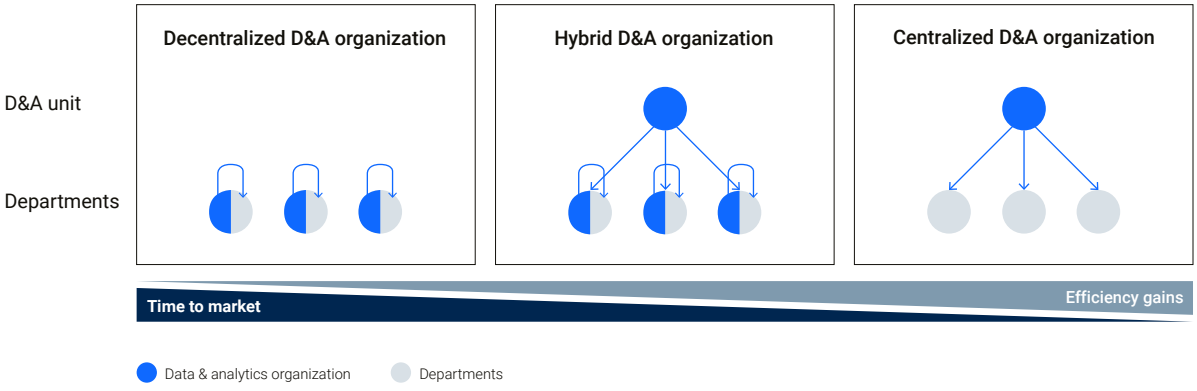
“Instead of static data platforms, banks need dynamic business intelligence platforms that enable collaborative work on data-based projects and create a clear understanding of the data.”

Data and analytics organization

Technology is one thing. However, banks must also address the exponential growth of data, legal requirements and increasing cybersecurity demands at an organizational level – business and IT must work together more closely and experiment together, instead of just exchanging specifications. Establishing a data and analytics organization promotes mutual understanding and helps business and IT to work together quickly and easily on new projects and use cases. Such an organization takes all relevant data capabilities into account, strategically advances the topic and is responsible for the operational implementation of all relevant areas:

- *Governance, compliance and ethics*
- *Data architecture*
- *Lifecycle management*
- *Quality management*
- *Analytics*
- *Data security*
- *Infrastructure*

The three types of data and analytics organization



Decentralized

No centrally defined data strategy, policies, guidelines and standards. Individual departments have control over design and implementation for their area.

Advantage: Solutions that meet the specific needs of the specialist area can be implemented quickly.

Disadvantage: Requires a great deal of data expertise in the departments and generates few company-wide synergies.

Centralized

Company-wide definition of data strategy, policies, guidelines and standards.

Advantage: Creates synergies, and specialist departments can tackle projects with a deeper level of expertise.

Disadvantage: Solutions do not always meet the needs of the departments and the departments may be restricted.

Hybrid

Combination of both approaches. In more centralized forms, the conceptualization of data capabilities is stipulated for the entire organization by a central team, and implementation takes place in a decentralized way in the departments. The more decentralized the organizational form, the greater the freedoms and responsibilities of the departments.

Advantage: Less pronounced competencies can be bundled centrally, while the specialist departments are given the necessary freedom.

Disadvantage: The coordination and communication effort tends to be higher than with the other two forms.

“A data and analytics organization establishes roles with clear tasks, competencies and responsibilities, enables collaboration between the various stakeholders and consolidates a clear control and management process.”

Conclusion

In order to react more quickly to market changes and customer needs, and to offer new services and products tailored to customers and segments, banks need quick and straightforward access to their data. Technological processes and organizational structures need to be established in order to access data in an agile manner. The key to this is:

- *A modern, agile data architecture that enables data to be extracted from core banking systems and made available flexibly*
- *Tools for structuring data and making it available for further processing via APIs*
- *Modern business intelligence platforms to work collaboratively and efficiently on data-based projects*
- *Transformation into a data and analytics organization to break down data silos and leverage cross-organizational synergies*

With ti&m Banking Integration, Open Datastack and our consulting services, we support banks in transforming the potential of their data into value-adding use cases:

ti8m.com/products

ti&m Banking Integration – the integration solution for core banking systems

ti&m Banking Integration offers banks a core-banking-system-agnostic solution to easily access data, merge it configuratively and make it available for use cases as OpenAPIs.

ti8m.com/datastack

Open Datastack

Our business intelligence platform, Open Datastack, utilizes the innovative power of modern open-source technologies and creates a collaborative environment with interactive dashboards, data pipelines and workflows to efficiently extract, process and visualize data.

ti8m.com/consulting

Data and analytics organization

The experts on our consulting team can help you define your requirements and use them to build a data and analytics organization that is right for you.

Would you like to talk to us about the technological and organizational approaches your bank can take to use data efficiently and intelligently?



Daniel Ott
Head Banking Strategy & Senior Advisor
daniel.ott@ti8m.ch
+41 44 497 73 29, ti8m.com