Summary

Catalyst

Improving mobile sales and service effectiveness has become the key goal for most banks as new mobile features and constant demands for better user experience increasingly command the attention of senior management in retail banking circles. In addition, as mobile banking has moved from the innovation stage to the mainstream, organizations are investing accordingly in new technologies. This makes it an opportune moment to assess how far mobile banking has come, where it needs to go from here, and which technologies banks should invest in. This report looks to assist retail and universal banks in the vendor shortlisting process by evaluating the leading standalone mobile banking solutions.

Ovum view

Mobile banking has become a very important channel, already accounting for 60% of all digital traffic at some large banks. Consumers’ expectations of mobile banking services are growing as technology becomes increasingly consumerized. However, banking investments are depressed by the constant focus on cost-containment and efficiency. This drives a very strong focus on enhancing the overall customer experience, through lower-cost digital and multichannel integration and marketing, improving security, and extending touchpoints on mobile devices.

As a result, there is strong demand for well-designed and functional mobile banking solutions, not only from a sales and servicing perspective but also for security and fraud-prevention reasons. That said, mobile banking is not a separate channel; it is channel through which consumers want to access banking services in addition to online banking, the contact center, and ATMs.

Ovum therefore believes that banks need to consider vendor solutions that focus on dramatically enhancing the mobile channel, including digital marketing. They should focus on rich user experience and functionality to drive engagement in digital channels to maximize customer satisfaction and revenues. In addition, they should focus on enhancing the mobile channel in parallel with their overall digital banking strategy, encompassing all banking touchpoints.

Key findings

**Mobile banking is the top investment priority in 2014**

Increasing profitability is a priority for a number of retail banks, as driving top-line growth is still difficult in the current market conditions and for many, unsurprisingly, a significant challenge. To address this challenge, institutions need to focus on increasing sales and servicing effectiveness. This has accelerated investments in channel technologies in 2014. Mobile banking projects are receiving the most attention from retail banks worldwide as they increase sales and improve service efficiency, resulting in higher customer satisfaction levels.

**Mobile becomes the main digital channel**

Mobile banking continues to grow and have a more direct impact on financial services institutions. The results of Ovum’s global retail banking Business Trends survey indicate increased interest among banks globally in further developing mobile banking. Most respondents also expect that mobile
banking will become a competitive necessity within the next three years. Some large banks already indicate that the mobile banking channel has the highest digital traffic.

**Mobile device innovation will continue to change user expectations**

The user experience of banking services on mobile devices is heavily influenced by the design, functionality, and technological capabilities of mobile devices and, by extension, of the networks on which they run. A strong user experience is essential, and users now expect enterprises to take advantage of new device features, or at least continue to innovate. It is also important to note that devices and interfaces continuously evolve, and future functionality and mobile banking interfaces are highly dependent on the speed and trajectory of technological development.

**Smartphone, tablet, and PC browser channels have specific consumer use cases driving distinct functionalities**

Although different devices have different use cases, functionality should be tailored to each device/digital channel, as the user experience is more important than providing the same functionality across all digital channels. That said, users still require consistency in functionality (although the underlying technology may vary), which drives consistency and integration efforts when developing channels, although the choice of platform and support of various channels in siloes may impact this. Ovum believes that the distinction between online and mobile will become somewhat meaningless; it will become necessary to manage a multi-OS, multi-screen, and multi-interface (navigated by touch or mouse) device ecosystem rather than just mobile, tablet, or PC.

**Banks must address development pain points such as security and consistency across devices**

Security is banks’ key pain point, but consistency, time to market, and the ability to deliver expected functionality are also highly important. In this context, retail banks can carefully build a service proposition designed to meet the needs of the addressable market. This flexibility is important, as there is little sense in offering complex transactional services if customers have yet to become comfortable with using a mobile device to access them. That said, the platform needs to be open in order to activate services in parallel with user demand for more advanced functions. A fully integrated and a modular approach (in which banks can simply choose the services they want to be active) will appeal to institutions in both developed and developing markets, and it is important for providers to highlight the flexibility of platforms and related apps.

**Mobile channel development sourcing strategies need to be considered**

Banks’ IT departments have their hands full maintaining existing infrastructure and performing a broad range of technology-related projects and transformation programs. In Ovum’s view, the creation and deployment of a mobile banking solution is not a project to be undertaken lightly, and the pursuit of an internally developed solution at all costs is something banks should avoid. With time to market providing a competitive advantage, the tight control and speed that external development can provide is attractive. External development is also attractive due to the extensive expertise required to manage multiple devices and operating systems (OSs) and in the security that it provides, and also because maintaining a leading edge in mobile innovation requires new skills. IT banking executives are unlikely to consider developing a mobile banking application internally, purely because of the need to test it on hundreds of different mobile devices to ensure that it works.
The choice of a native or hybrid app needs to be tied to the cost/benefit ratio

The question faced by a developer aiming to extend functionality to any mobile platform is how best to deliver such functionality. The options range from a full-function app that can be downloaded from an app store and operated whether or not the device is online, to a browser-based app with no software residing on the device because the app relies on it being online. The key advantage of the native approach is the ability to deliver a better user experience, and this approach has easier access to phone functionality and tends to be more responsive. A hybrid approach means lower costs of development and maintenance, especially when supporting multiple devices. Banks therefore need to balance the cost/benefit ratio based on the expected return on investment (ROI) in a specific market.

Mobile marketing is still immature, but has significant potential

Interestingly, the usability of mobile banking applications varies between different mobile OSs. iOS users have much longer sessions than Android users, even if similar functionality is offered, which means banks have a larger window of opportunity with which to engage with them. Although session length is an important measure of mobile banking application performance, it offers a broad range of opportunities; banks can not only service customers through the digital channel but also upsell or cross-sell, while a longer session presents opportunities for marketers to convey a targeted message. The key challenge for bankers is in making this message non-intrusive and relevant. Many banks are still investigating such opportunities to eventually transform the mobile banking channel from a transactional tool into one that drives revenue for the bank.

Customers want a seamless communication experience on mobile devices

Communication is expected to be prevalent in the use of digital channels. Whether web chatting or voice or video calling, communication is key for customer service and in driving sales, and many banks that are refreshing their online channels are adding communication capabilities. Mobile banking will benefit from this trend, as online banking users will demand the extension of such capabilities to mobile. Also, mobile devices are typically where banking customers are (with smartphones themselves, of course, being communication devices) while regular PCs are not. Users have different needs: some prefer web chat or email, while others prefer speaking directly to a person.

Vendor solution selection

Decision Matrix scope

In this report, Ovum takes a close look at the competitive landscape of mobile banking solutions for the retail and universal banking sector. This assessment is a quantitative and qualitative representation of Ovum’s view about the competitive market environment.

Inclusion criteria

The criteria for inclusion of a vendor solution in the Ovum Decision Matrix for mobile banking solutions are as follows:

- The vendor must provide a standalone mobile banking platform.
The solution must be deployed within at least two geographical regions (Western Europe, Central and Eastern Europe, the Middle East, Africa, North America, Central and South America, emerging Asia-Pacific, and developed Asia-Pacific).

The solution must be currently available and it must have won at least two clients since January 2013.

There must be overall good market interest in and visibility of the provider, determined by serious consideration for providing a standalone mobile banking solution, and qualified by Ovum during the initial research stage.

The eight vendors and their solutions considered in this report are listed in Figure 1 below.

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Mobile banking solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backbase</td>
<td>Backbase Engage</td>
</tr>
<tr>
<td>Fiserv</td>
<td>Mobiliti</td>
</tr>
<tr>
<td>Infosys</td>
<td>Finacle Mobile Banking</td>
</tr>
<tr>
<td>Misys</td>
<td>FusionBanking Essence Mobile</td>
</tr>
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<td>Oracle</td>
<td>Flexcube Mobile Banking</td>
</tr>
<tr>
<td>SAP</td>
<td>Mobile Banking</td>
</tr>
<tr>
<td>TCS</td>
<td>TCS BaNCS Mobile Banking</td>
</tr>
<tr>
<td>Temenos</td>
<td>Connect Mobile Banking</td>
</tr>
</tbody>
</table>

Source: Ovum

**Methodology**

Vendor positioning is based on the analysis of a number of sub-criteria for each of three primary criteria, a breakdown of which is provided within each vendor profile, to produce a score out of 10. Based on the combined scoring, Ovum evaluates the top vendors that banks should shortlist, consider, or explore in a mobile banking solution selection process.

**This assessment is based on the following methodology:**

- Based on our initial assessment of the mobile banking solutions market, we invited a number of vendors to respond to a detailed RFI that asked them to provide data and supporting documentation around three primary criteria: market impact, mobile banking technology, and execution.

- In addition to the RFI responses, Ovum invited vendors to provide solution briefings, product demonstrations, and organize interviews with their clients (as references).

- Analysis of the three primary criteria was based on a scoring assessment exercise undertaken for a number of sub-criteria. For each response within the RFI that aligned to the respective sub-criteria, Ovum rated vendors on a scale of 0–10 based on a consistent set of
best practice standards or benchmarks defined by Ovum. We then aggregated these to provide a score for each of the three primary criteria.

- Ovum has used weighting in its analysis to calculate scores for both sub-criteria and primary criteria. These are based on our analysis of the respective typical importance of each criterion in the selection process for mobile banking solutions.

**Market impact**

The global market impact of a solution is assessed in this dimension, with the following sub-criteria:

- Banking market adaptability score: Revenue attributable to the banking industry – software and services (2013 and 2012), revenue growth (2013 over 2012), and weighted number of unique mobile banking clients to date.
- Mobile banking business development score: Revenue attributable to the mobile banking platforms – software and services (2013 and 2012), and revenue growth (2013 over 2012).
- Mobile banking installed base score: Weighted number (by size and type of solution in use) of unique banks having purchased and implemented the vendor's mobile banking solution (with it still currently active) and new, unique banks brought under contract (within the last two years), as well as existing clients that have upgraded to the latest version(s) of the mobile banking solution.
- Geographical reach: Operational presence across regions, installed base across regions, and international support capabilities.

**Technology assessment**

In this assessment dimension, Ovum assesses features and functionality that would differentiate between the leading solutions in the marketplace. The sub-criteria are as follows:

- Platform architecture and roadmap: The conceptual model that defines the structure and behavior, among other things, of a solution, as well as the product functional roadmap.
- Market coverage: Depth of localization, country-level support, and compliance maintenance practices.
- Business adaptability: Product configuration capabilities including management functions, development times, and requirement for IT support, as well as ability to support business process control and the available level of process pre-configuration.
- User interface (UI)/user experience: Efficiency and effectiveness of the use of the solution by customers, user experience support, single sign-on (SSO), and product configurator/business analyst view.
- Device/OS support: Support of feature-phone banking, smartphone banking, tablet banking, and support of various mobile OSs.
- Mobile marketing support: Campaign support, social media integration and engagement, analytical CRM integration, geo-targeting, near-field communication (NFC), and QR codes.
- Mobile communication support: Email, web-chatting, and audio and video communication and device support.
- Personal financial management (PFM) support: PFM functions and third-party PFM integration capability.
Ovum Decision Matrix: Selecting a Next-Generation Mobile Banking Solution

- Mobile payments support: Peer-to-peer (P2P) payments, NFC payments, QR code-based payments.
- Security support: Authentication, web fraud prevention, mobile security, and third-party system integration.
- Multichannel integration support: Integration of the mobile banking platform with other channels, CRM integration.
- Non-retail banking line of business support: Support of SMEs, corporates, wealth management/private banking, retail brokerage, or other lines of business.

**Execution**

In this dimension, Ovum reviews the capability of the solution around the following sub-criteria:

- Maturity: The stage of the product/service in the maturity lifecycle, relating to the maturity of the overall technology/service area.
- Interoperability: How easily the solution/service can be integrated into the organization’s operations, relative to the demand for integration for the project.
- Deployment: Referring to a combination of assessed criteria and points of information, Ovum assesses detail on various deployment issues including time, industries, services, and support.
- Application lifecycle development: Mobile banking lifecycle management such as methodologies, governance, analytics, security, and UI design.
- Scalability: Points of information are provided to show the scalability of the solution across different scenarios.
- Maintenance: Maintenance releases and upgrade cycles timeframes, processes and methodologies for minimizing bank resources in managing upgrades, and maintenance and prioritization approaches to client customization requests.
- Partners and services: Strength of the partner network including analysis of tiering of partners, number of product-trained external staff, and maturity of partner certification program.
- Support: Development and implementation staff size, help-desk capability, training breadth, and geographic coverage.

**Ovum ratings**

- Market Leader: This category represents the leading solutions that we believe are worthy of a place on most technology selection shortlists. The vendors have each established a commanding market position with a product that is widely accepted as best of breed.
- Market Challenger: The solutions in this category have a good market positioning and are selling and marketing the product well. The products offer competitive functionality and a good price-performance proposition, and should be considered as part of the technology selection process.
- Market Follower: Solutions in this category are typically aimed at meeting the requirements of a particular kind of customer. As tier-1 offerings, they should be explored as part of the technology selection process.
Market and solution analysis

Ovum Decision Matrix: Selecting a next-generation mobile banking solution

Because realizing value from a mobile banking solution is critically dependent upon the solution's ability to execute the bank's overall mobile and channel strategy, a decision to purchase a specific solution should be based on a broad array of factors, including the degree of alignment between the solution's functionality and underlying technology and an institution's particular business functionality requirements, project scope, institution size, and country location. As a result, Ovum's recommendations should be taken only within the context of a bank's specific solution requirements. The figure below represents the Ovum's view of the overall technology strength, market impact, and execution ability of the key mobile banking vendors that were selected for assessment in this report.

Figure 2: Ovum Decision Matrix: Next-generation mobile banking solution vendors

![Ovum Decision Matrix](image)

Source: Ovum

Table 1: Ovum Decision Matrix: mobile banking solution vendors

<table>
<thead>
<tr>
<th>Market leaders</th>
<th>Market challengers</th>
<th>Market followers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiserv</td>
<td>Backbase</td>
<td>Misys</td>
</tr>
<tr>
<td>Oracle</td>
<td>Infosys</td>
<td>TCS</td>
</tr>
<tr>
<td>SAP</td>
<td>Temenos</td>
<td></td>
</tr>
</tbody>
</table>

Source: Ovum

Market leaders: vendor solutions

**Fiserv**: Fiserv's Mobiliti has been on the market for a long time, and the vendor has a very large and loyal customer base developed through an excellent client relationship model. Fiserv is now investing resources to take the solution to the next stage, focusing on modularization and extensibility, which
translates into easier customization and leverages third-party dedicated technologies. This strategy is likely to stimulate upgrades and new business development. Ovum considers this solution the market leader, as Fiserv has managed to gain significant market share and has kept up in the technology race. Ovum recommends that banks shortlist Mobiliti when looking for a next-generation mobile banking solution.

**SAP:** SAP’s Mobile Banking solution is constantly being developed, as is the vendor’s overall mobility strategy. SAP transformed the heritage Sybase solution from a solid and established solution in North America to an enterprise-ready suite with a very rich, clear development path and functional roadmap. SAP’s expertise in banking software is visible within its overall development strategy and provides a strong differentiator. Ovum believes that banks should shortlist SAP Mobile Banking when looking for a next-generation mobile banking solution that is ready for further growth.

**Oracle:** Oracle has recently invested a significant amount of resources in research and development (R&D), with positive results. Flexcube Mobile Banking, with its existing installations, relationships with other areas such as online and core banking, and enterprise applications, is very well positioned for upgrades or new installations. It has many new out-of-the-box features that align with current mobile trends, and it can be easily configured, managed, and developed further. This makes it a very good solution as a foundation for the development of a mobile channel strategy. In addition, with its support professionals, local presence, and proven delivery track, Oracle scored high on the execution scale. Consequently, Ovum believes that Flexcube Mobile Banking should be shortlisted by banks looking for a next-generation mobile banking solution.

**Market challengers: vendor solutions**

**Backbase:** Backbase is a recent entrant to the mobile banking space for dedicated solutions. With its lean portal and digital channel solution, the vendor addresses the most important aspects of the mobile channel, which are in demand among banks looking for a very modern, agile, and neat solution. Backbase Engage allows rapid time-to-market with its hybrid design approach to the mobile channel. With this solution, banks receive a number of features that are well aligned with current trends in mobility. That said, the solution still needs to prove its strength as a mobile banking offering that stands independently from the vendor’s well-designed online banking offering. Ovum recommends that banks consider Backbase Engage in their search for a next-generation mobile banking solution.

**Infosys:** Finacle offers a solid solution that has long been on the market and is constantly being improved by the addition of new functions through new releases. Its modular form allows flexible customization and therefore flexible pricing. The solution supports multichannel integration, which makes it a solid proposition for banks looking to boost their mobile presence but maintain a high level of consistency with other channels. Infosys is also one of the few vendors to provide a high level of mobile communication features out of the box. Ovum recommends that banks consider Finacle Mobile Banking when investing in a next-generation mobile banking solution.

**Temenos:** Temenos has made a significant improvement to the Temenos Connect Mobile Banking (TCMB) solution in the last few months, and this has resulted in a very sound and competitive offering for new and existing clients. The major strength of the solution lies in the vendor’s approach to designing and deploying user experience portals on mobile devices. The strong focus on developing mobile channel technology also impacts the product roadmap and the availability of new features with further releases. This aligns well with current market requirements, as banks are looking increasingly
Ovum Decision Matrix: Selecting a Next-Generation Mobile Banking Solution

to vendors to support new technology developments. Therefore, Ovum believes that Temenos Connect Mobile Banking should be considered by banks looking for a next-generation mobile banking solution.

Market followers: vendor solutions

**Misys:** Misys is taking the technology acquired from IND to the next level, and its solution, FusionBanking Essence Mobile, is on the development path from relatively recent start-up to enterprise-class, with execution being the major focus. Its main strength lies in its approach to designing the UI and business adaptability via its lean portal solution, which allows banks to achieve a neat "look and feel" and a usable display on a number of supported devices. The vendor also has a strong focus on R&D, with clients looking to Misys for thought leadership and innovation. Consequently, Ovum recommends that banks searching for a next-generation mobile banking solution explore Misys’ FusionBanking Essence Mobile.

**Tata Consulting Services (TCS):** The main strength of TCS BaNCS is that it is an out-of-the-box solution for fast deployment, especially for current back-office and online banking clients, as it comes with a pre-defined integration engine. It has a solid level of supported functionality, and future releases are expected to make the solution even more competitive. The fully functional hybrid version has recently been launched with one live implementation in the Middle East. The solution has also been launched as a standalone mobile banking offering, and this makes it a viable option for upgrades and cross-selling to existing clients. The offering is solid and provides a good foundation for further growth. Consequently, Ovum recommends that banks explore the mobile banking offering of TCS BaNCS when searching for a next-generation mobile banking solution.

Market leaders

Market leaders: market impact

**Figure 3: Ovum Decision Matrix: Next-generation mobile banking solution vendors – market impact**

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Banking market adaptability score</th>
<th>Mobile banking business development score</th>
<th>Mobile banking installed base score</th>
<th>Geographical reach</th>
</tr>
</thead>
<tbody>
<tr>
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<td>4.2</td>
<td>3.8</td>
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<tr>
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<td>Oracle</td>
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<td>4.4</td>
<td>4.0</td>
<td>4.4</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Source: Ovum

The market impact assessment indicates both the current position of the vendor and the future potential of business development as it relates to the next generation of digital platforms. This potentially correlates with funding for future R&D investments and support capabilities. Not surprisingly, the vendors with a large footprint in the wider banking sector, SAP and Fiserv, scored the highest in this section, with Oracle and TCS not far off. All of these vendors have the backup of other
products, and this allows them to have broader support from local offices, developing integration capabilities and fuelling significant R&D efforts once the market shows strong demand for features.

**Market leaders: technology**

**Figure 4: Ovum Decision Matrix: Next-generation mobile banking solutions – technology**

<table>
<thead>
<tr>
<th>Platform architecture and roadmap</th>
<th>Market coverage</th>
<th>Business adaptability</th>
<th>User interface/ experience</th>
<th>Device/OS support</th>
<th>Mobile marketing support</th>
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</thead>
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<td>8.6</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mobile communication support</th>
<th>PFM support</th>
<th>Mobile payments support</th>
<th>Security support</th>
<th>Multichannel integration support</th>
<th>Non-retail banking line of business support</th>
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<tr>
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<td>8.0</td>
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<tr>
<td>Oracle</td>
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<td>7.0</td>
<td>7.3</td>
<td>7.9</td>
</tr>
</tbody>
</table>

Source: Ovum

The technology assessment relates to broadly understood use cases. It indicates the amount of features that are supported by the vendor as part of a digital platform implementation project. One size never fits all, as banks may have different functional requirements, so the rationale for choosing these features is to show the overall market requirements (in terms of features) that today’s ideal mobile banking solution should address. Ovum believes that the ability to support these today or in the near future is a critical success factor for banks, in terms of both supporting their product and having the technical ability to execute their mobile channel strategy effectively. Fiserv, SAP, and Oracle scored the highest in this category, with Infosys not far off. High scores here indicate that solutions have recently received a significant focus from vendors’ respective R&D groups, and efforts have been made to align them with current trends in mobile.
The execution category assesses the ability to successfully deploy, support, maintain, and further develop the product. These areas are not typically visible during the selection evaluation stage as the strengths and weaknesses of a solution and supporting vendors surface during the implementation and support stage. Therefore, this assessment is based on implementations with existing clients and Ovum's projection of future potential relationships. SAP, Oracle, Fiserv, and Infosys are the highest-scoring vendors, each with a large proven customer base and a long history of banking product implementation. They also have the ability to serve upper-tier banks, which demonstrates the enterprise-class execution that is required at that level.

Vendor analysis

Backbase – Ovum recommendation: challenger

Backbase is a privately owned digital banking specialist with EMEA headquarters in Amsterdam, North American headquarters in New York, and regional offices in the UK, Russia, and Singapore. The company was founded in 2003 and its first standalone mobile banking solution, Backbase Engage, was launched in 2014. Backbase Engage is an extension of the Backbase CXP platform, its integrated digital channel offering. The company’s entire workforce (215 staff) is dedicated to these products, with 93 development staff and 64 implementation and support staff. In 2013, its revenues reached $32m, an increase of 17% from 2012, with around 88% attributed to the banking industry. The vendor has 96 clients, a large proportion of which are mid- and upper-tier banks. The majority of these use Backbase either online or as an integrated digital channel solution, with five using standalone mobile banking software (without online banking). The company has been aggressively adding new clients.
Backbase Engage is based on Backbase CXP, which offers a lean portal and digital channel platform using widgets and representational state transfer- (REST-) based architecture, which allows the support of multiple devices with a single underlying development and delivery platform. Backbase CXP acts as the mobile back-end-as-a-service (mBaaS) infrastructure, which includes presentation, personalization, security, and integration services, and also supports multi-entity deployments.

Backbase Engage uses the Backbase Mobile SDK (based on Appcelerator Titanium), on which device and OS support is based. Within the Mobile SDK native UI, controls are now available to give the end user a full native experience. Banks can use the Mobile SDK to extend and customize the mobile banking application to their own needs.

Backbase Engage comes with out-of-the-box banking widget libraries and functions, which together address the mobile banking user journey. Each element is intended for use in a mobile banking application, but can also be used in other devices, ensuring cross-digital-channel consistency in user experience and behavior. The vendor supports mobile PFM, with the main focus on money management and bill presentment, and it is also preconfigured to integrate with solutions from MoneyDesktop, Geezeo, and Yodlee. Mobile communication is supported by a message center that can receive emails and includes click-to-chat and click-to-call features. Backbase Engage offers dedicated out-of-the-box widgets and functions for SMEs, commercial banks, and wealth management institutions, in addition to retail banks.

Digital marketing teams can use the Backbase CXP Manager, an in-context “what you see is what you get” (WYSIWYG) editor, to manage and optimize all aspects of the customer experience (navigation
composition across multiple devices, widget management, content management, forms management, personalization and targeting, analytics, and A/B and multivariate testing). Mobile marketing focuses on campaign support using contextual user analysis. The vendor’s product roadmap focuses on improving the ability of business users to monetize the behavior of customers.

**Figure 7: Backbase: technology radar**

Backbase Engage was launched in May 2014 as a dedicated solution, so it has yet to prove its success. However, it is a good match for current market requirements relating to mobile touchpoints for retail banking. The vendor implements and services the solution directly or via strategic partnerships with system integrators (SIs) and independent software vendors (ISVs) such as Atos,Accenture, Capco, and Capgemini, with over 350 dedicated external staff. Typical greenfield implementation takes around 3–4 months. Backbase Engage can be deployed on-premise or via a private cloud hosted by NTT Data, Atos Canopy Cloud, or Bottomline Technologies. Backbase’s largest mobile deployment is with ABN AMRO Bank, which has an average of 1.2 million daily logins. The product’s maintenance timeframe is around four times per year, with upgrade cycles every 1–2 months. Help-desk support is currently offered in English from three support hubs (in New York, Amsterdam, and Singapore) 24x7, with 12 employees dedicated to first- and second-line support.
Backbase is a recent entrant to the mobile banking space for dedicated solutions. With its lean portal and digital channel solution, the vendor addresses the most important aspects of the mobile channel, which are in demand among banks looking for a very modern, agile, and neat solution. Backbase Engage allows rapid time-to-market with its hybrid design approach to the mobile channel. With this solution, banks receive a number of features that are well aligned with current trends in mobility. That said, the solution still needs to prove its strength as a mobile banking offering that stands independently from the vendor’s well-designed online banking offering. Ovum recommends that banks consider Backbase Engage in their search for a next-generation mobile banking solution.

**Fiserv – Ovum recommendation: leader**

Founded in 1984, Fiserv is a public company headquartered in the US with offices across the globe. Its mobile banking solution Mobiliti, which was launched in 2002, belongs to the vendor’s Digital Channels business unit. The company’s total revenues for 2013 reached $4.8bn, with 96% of these attributed to the banking sector. Fiserv employs around 21,000 associates, with 520 dedicated to its mobile banking solution, of which 200 work on R&D and 200 on implementation and support. Today Mobiliti has over 1,700 live installations, predominantly from the mid- and lower-tier banking segment and mainly in North America. However, a few installations exist in other geographies. The majority of its clients (more than 1,500) performed a significant mobile banking solution upgrade within the last two years.
Currently in version 4.5 (released in November 2013), Mobiliti supports both mobile banking and payments via messaging (e.g. SMS), mobile Web, and tablet/smartphone apps (iOS, Android, Windows, and BlackBerry). The solution is configurable via its Control Center – the administrator console. It is also extensible via published module integration and endpoints, and customizable through its SDK.

Financial services institutions can choose appropriate models ranging from no customization to a high level of customization. Fiserv’s Campaign Manager can be extended to handle mobile marketing, and its merchant-funded offers tool is undergoing a major development process in order to enhance sales capabilities. The PFM function can be handled by Fiserv-owned AllData or Fiserv’s personal money management (PMM) modules, or via a pre-integrated third-party tools from Personetics (for analytics recommendations) or Shinobi (for graphing assistance). P2P payments are also handled by a dedicated Popmoney solution from Fiserv, or internationally by leveraging Mobiliti’s Personal Payments module.

Mobiliti’s authentication component is strong, with over 30 authentication models (including pre-login balance), and it is also pre-integrated with third-party systems such as RSA. The solution also has a solid anti-fraud component, which can leverage Fiserv’s dedicated solution, Financial Crime and Risk Management platform. The solution can also be used for non-retail lines of business such as SME and corporate banking (focusing on approvals, enhanced authentication, and management of roles and privileges), and wealth management (focusing on enabling dynamic and real-time contact, such as live chat or secure click-to-call, and enhanced communication). Mobiliti’s product roadmap focuses...
mainly on modularization and extensibility rather than features development, allowing further enhancement of the solution by third parties (internal IT departments, outsourced providers, and SIs).

**Figure 10: Fiserv: technology radar**

The Mobiliti platform is already quite mature. It was initially developed by M-Com and deployed in 2002 by the Bank of New Zealand, originally to manage mobile payments. Since the Fiserv acquisition, the solution has been deployed by a number of Fiserv clients, mainly in the US, and the next stage for the vendor is to penetrate markets outside the US. Fiserv sells directly to financial services institutions from its major sales hubs in the US, the UK, Mexico, and Singapore. Typical implementation takes around three months for a smaller bank on an application service provision (ASP) basis, and this extends to 9–12 months for a tier-1 bank with multiple customizations on an on-premise deployment. Legacy migrations take 5–6 months, on average.

Mobiliti comes with three deployment models: ASP (SaaS) in the US, out of the box (licensed – US and international versions), and custom (Enterprise version). Fiserv provides support directly in all regions. The solution is developed using the Agile software development method, allowing the vendor to adapt better to changing market requirements, and it includes a dedicated reporting database and a range of out-of-the-box reports. It has also been integrated with third-party analytics engines such as Google Analytics and Omniture. Mobiliti has been tested on 30 million active users, and its largest deployment has over 2 million active users. New major product releases typically occur annually, with maintenance releases as requested. Help desks are located in the US, New Zealand, and the UK, allowing Fiserv to support clients 24×7.
Fiserv’s Mobiliti has been on the market for a long time, and the vendor has a very large and loyal customer base developed through an excellent client relationship model. Fiserv is now investing resources to take the solution to the next stage, focusing on modularization and extensibility, which translates into easier customization and leverages third-party dedicated technologies. This strategy is likely to stimulate upgrades and new business development. Ovum considers this solution the market leader, as Fiserv has managed to gain significant market share and has kept up in the technology race. Ovum recommends that banks shortlist Mobiliti when looking for a next-generation mobile banking solution.

Infosys – Ovum recommendation: challenger

Finacle is an independent business unit of Infosys that focuses on banking software development. Founded in 1981, the company is headquartered in India and has a number of offices worldwide. It initially offered mobile banking with its e-banking solution, but in 2010 its mobile solution was re-architected to be offered additionally as an independent solution. This standalone solution is currently used by 23 clients, and the e-banking solution has over 175 multi-channel installations. Most of Finacle’s banking clients are in the mid- and lower-tier segments, and the company’s key regions are emerging Asia-Pacific, the Middle East, and Africa, although it also has a number of installations in other geographies.
Finacle Mobile Banking solution uses the services rendered by Finacle Multichannel Framework (MCF). It integrates a variety of Finacle and non-Finacle back-end systems as well as front-end/channel systems, thereby maintaining a centralized context of financial/non-financial transactions performed by users (customers, agents, or bank employees). Common modules of Finacle Mobile Banking utilize common services exposed as part of MCF, and include unified account view, transaction and balance information, support for dashboard with personalizable widgets (in Web mode), electronic bill presentment and payment (EBPP) services, mails, service requests, authentication and authorization, reporting administration, risk and access controls, operations and relationship management services, and support for text chat and audio calls. Finacle provides a bank administration module that facilitates real-time product configuration and roll-out mechanisms. It allows business users to make changes independently of the bank’s IT team. Infosys has a separate Creative Design Group (CDG) responsible for UI design, art work, and asset creation, serving a multitude of customers.

The solution’s mobile marketing function can be leveraged through dedicated means such as placeholders and alerts, and it has a built-in analytical engine. In addition, the solution is pre-integrated with solutions such as Finacle CRM, Finacle Analyze, and Clari5 (a partner of the vendor). The email communication is built in, and web chat, audio, and video functions are handled by a dedicated Finacle Advisor solution. Mobile payments are supported by a Finacle Digital Commerce solution or third-party products. Finacle Mobile banking supports SME/corporate functions and wealth management functions in addition to retail banks. Key items on the vendor’s roadmap include enhancing payments and collections capabilities, customer acquisition through mobile origination.
improving security through biometrics (fingerprint, face, and voice recognition), expanding corporate payments functions, digital marketing and content management, multi-channel transaction, and information capabilities.

**Figure 13: Infosys: technology radar**

![Technology Radar](image)

*Source: Ovum*

The Finacle multichannel e-banking solution has been on the market for 14 years, and the re-architected independent mobile version for four. It is implemented directly or through Infosys’ services team. Finacle e-banking is pre-integrated with a number of other Finacle products, such as Finacle e-Banking, Finacle Core Banking, Finacle CRM, and Finacle Wealth Management. A typical greenfield implementation takes 4–6 months, and legacy migration takes a similar amount of time. Multiple deployment modes are available: license, hosted, SaaS, and cloud-based. The solution can be customized via Finacle’s solution delivery platform without the involvement of Finacle staff and outside of the base source code. As part of Infosys, Finacle also has strong capabilities on the services side, including system integration and business and IT strategy consulting.

Finacle Mobile Banking follows a variant of the Waterfall model for application development for every release to market. The solution can scale both vertically (by adding resources in the same servers) and horizontally (by increasing the number of servers). Major releases are typically provided every six months for extensions and new capabilities, and every three to four months for simple functionalities and those that are program-specific or required locally. The help desk is based mainly in India, with support also in Asia and EMEA, and this is available 24×7×365.
Finacle offers a solid solution that has long been on the market and is constantly being improved by the addition of new functions through new releases. Its modular form allows flexible customization and therefore flexible pricing. The solution supports multichannel integration, which makes it a solid proposition for banks looking to boost their mobile presence but maintain a high level of consistency with other channels. Infosys is also one of the few vendors to provide a high level of mobile communication features out of the box. Ovum recommends that banks consider Finacle Mobile Banking when investing in a next-generation mobile banking solution.

Misys – Ovum recommendation: follower

Misys is a private company headquartered in London, UK. The company was founded in 1979 and has offices in almost every major region. In early 2014, it acquired online and mobile banking solutions provider IND, which it incorporated into its Misys Digital Channels business unit. Its current mobile banking solution – FusionBanking Essence Mobile – was inherited from IND and is a dedicated mobile extension of its online banking platform. Misys itself has a broad portfolio of clients across various lines of business in financial services, supported by around 4,500 employees, and its mobile banking solution is supported by 12 R&D and 45 implementation and support staff.
FusionBanking Essence Mobile’s development focuses first of all on user experience visualization, usability of processes, personalization, and engagement and sales engines. The solution is built with a modular approach, which enables the vendor to pick and choose the business modules that are needed in a particular project. The following modules are available out of the box: authentication, authorization, channel, transaction framework, employee, customer, audit log, localization, messaging, parameterization, printing, product enabling, and alerting.

The solution’s local country support is focused on markets in Europe and the Middle East, and the solution has been deployed in 11 languages. Product parameterization can be managed through the online administration GUI, so it does not require downtime or vendor involvement. The solution also supports a mobile/tablet interface via a web interface or application (with hybrid and native versions for iOS, Android, and Windows Phone). Mobile marketing capabilities are supported via FusionBanking Essence Digital Sales, a dedicated add-on package to the mobile banking suite.

The mobile banking solution contains specialized PFM features including transaction categorization, handling cash transaction, transaction or net worth analysis, budget management, goal setting, peer comparison, alerts, account aggregation, and transaction upload. The solution also supports SME and corporate banking in addition to retail banking. The vendor’s roadmap currently includes biometric authentication, customer origination, overdraft application, loans overview, debit card request, bill payment, and mobile payments.
The strategy behind the development of the mobile banking suite focuses on investing in R&D (in Misys Labs) and maintaining alignment with current trends in mobile. This is highlighted by the development of areas such as gamification, PFM, and social media integration. The solution comes with a high level of out-of-the-box functionality and it formulates a single modular system; modules can be implemented as a whole or in smaller packages, depending on requirements. A typical greenfield implementation takes around six months. Only on-premise installations are currently available; the licensing model is end-user-based, and the associated service costs relate to the set of (custom) functionality being delivered within the project. The largest active deployment has 750,000 registered users and over 400,000 active users.

Misys has several development and implementation partners, including Accenture, Deloitte, and HCL. Its help desks are located in 11 countries and are either the vendor’s own or its partners’ where support offices are located. It supports multiple languages including English and Hungarian.
Misys is taking the technology acquired from IND to the next level, and its solution, FusionBanking Essence Mobile, is on the development path from relatively recent start-up to enterprise-class, with execution being the major focus. Its main strength lies in its approach to designing the UI and business adaptability via its lean portal solution, which allows banks to achieve a neat "look and feel" and a usable display on a number of supported devices. The vendor also has a strong focus on R&D, with clients looking to Misys for thought leadership and innovation. Consequently, Ovum recommends that banks searching for a next-generation mobile banking solution explore Misys' FusionBanking Essence Mobile.

Oracle – Ovum recommendation: leader

US-headquartered Oracle started offering its mobile banking solution with the acquisition of i-Flex in 2006. Oracle Financial Services Global Business Unit (FSGBU) manages all aspects of the banking vertical's software assets including development, sales, and marketing. The organization runs its operations from offices all over the world, with a workforce of around 120,000 employees (including over 9,000 in Oracle FSGBU). Its total revenues for Oracle Financial Services Software exceeded $640m in 2013. The latest solution, Oracle Flexcube Direct Banking, is in its 12th version, and Flexcube Mobile Banking is a dedicated component of this for the mobile channel. Oracle FSGBU has over 220 clients in over 80 countries for Flexcube Direct Banking, spanning mobile and online channels.
Oracle Flexcube Mobile Banking Solution provides a user-friendly interface, information access, payments, location-based offers, ATM/branch locator, and instant channel assistance. Customers can access banking services using a wide range of devices, using SMS, mobile browsers, and mobile applications on smartphones and tablets (with support for Android, iOS, BlackBerry, and Symbian). Oracle Flexcube Development Workbench for Direct & Mobile Banking enables banks to eliminate multiple device upgrades and provide an integrated approach to deploying functionality across platforms. The solution delivers a combination of mobile Web for common processes and native programming languages and objects for device-specific features and interfaces.

Pre-defined business processes are delivered through the Oracle Industry Reference Model for Banking, a repository of banking industry best practices developed over time. The solution offers differentiated mobile banking services on a single platform for different business segments, lines of business (SMEs, corporate banking, and wealth management), countries, and regions, with differentiated branding definitions for each entity. Mobile marketing is driven largely via Oracle Real Time Decisioning, which can factor in interactions and profile the customer in real time, and juxtapose this with its internal real-time analytical CRM engine. PFM functions are available out of the box: Spend Analysis, Budget Management, Goal Accounts, and Peer Comparison help customers to manage, track, and compare their finances. These are available for consumers within a rich graphical dashboard that offers drill-down support and analysis of personalized personal finance categories. Incorporating an element of gamification, the solution enables customers to compare their spend analysis, budgets, and goals within their community. They can also share goals with peers, family, and friends, and work toward goals by requesting contribution from peers, family, and friends. Mobile
security is handled by the dedicated Oracle Adaptive Access Manager, which delivers critical functionality in access control, SSO, and user profile management, and strong authentication, fraud detection, and federation for heterogeneous application environments. All of these factors combined make the solution ready out of the box for a number of banks.

**Figure 19: Oracle: technology radar**

<table>
<thead>
<tr>
<th>Technology</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform architecture and roadmap</td>
<td>10</td>
</tr>
<tr>
<td>Non-retail banking line of business support</td>
<td>9</td>
</tr>
<tr>
<td>Multichannel integration support</td>
<td>8</td>
</tr>
<tr>
<td>Security support</td>
<td>7</td>
</tr>
<tr>
<td>Mobile payments support</td>
<td>6</td>
</tr>
<tr>
<td>Mobile communication support</td>
<td>5</td>
</tr>
<tr>
<td>Mobile marketing support</td>
<td>4</td>
</tr>
<tr>
<td>PFM support</td>
<td>3</td>
</tr>
<tr>
<td>Device/OS support</td>
<td>2</td>
</tr>
<tr>
<td>User interface/experience</td>
<td>1</td>
</tr>
<tr>
<td>Business adaptability</td>
<td>0</td>
</tr>
<tr>
<td>Market coverage</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Ovum

Oracle’s recent development efforts – especially those related to mobile extension, personalization, and CRM integration features – make the solution very relevant in today’s quickly changing mobile environment, and enterprises can use it for new initiatives or as a foundation for growth. The solution is being sold and serviced directly and via a partner network. The solution’s Java 2 Enterprise Edition (J2EE-) based architecture allows banks to deploy applications over the Web and via other customer contact points. A services-oriented architecture (SOA) in business integration allows for the multichannel platform to be leveraged in a business process definition. There is a high level of out-of-the-box functionality, and the solution also contains an integration element for other Oracle FSGBU applications such as the Oracle Flexcube Universal Banking solution.

A typical greenfield implementation takes 2–3 months, excluding customization, while large projects typically take 4–6 months, and the solution is offered on a licensed or privately hosted basis. Oracle follows Agile methodology, with an iterative development process for mobile banking application development. Its Product Backlog contains market and customer requirements gathered to date, based on research and a customer advisory process. Its largest deployments have supported some of the largest retail banks with over 20 million users – around 8,000–9,000 concurrent users and a peak of 12,000–15,000 users. Minor releases occur every 4 months and include those for region-specific functions and new region-specific functionalities or upgrades, in addition to fixes and patches. Major releases are scheduled once a year, and targeted changes will include framework upgrades or improvements, releases for new geographies, or functions for new business segments. New features requests are evaluated by Oracle product management and reviewed by a dedicated Customer Support Team.
Advisory Board and via customer programs. The help desk is located in multiple geographies and provided in English and local languages, and it operates 24×7.

**Figure 20: Oracle: execution radar**

Oracle has recently invested a significant amount of resources in research and development (R&D), with positive results. Flexcube Mobile Banking, with its existing installations, relationships with other areas such as online and core banking, and enterprise applications, is very well positioned for upgrades or new installations. It has many new out-of-the-box features that align with current mobile trends, and it can be easily configured, managed, and developed further. This makes it a very good solution as a foundation for the development of a mobile channel strategy. In addition, with its support professionals, local presence, and proven delivery track, Oracle scored high on the execution scale. Consequently, Ovum believes that Flexcube Mobile Banking should be shortlisted by banks looking for a next-generation mobile banking solution.

**SAP – Ovum recommendation: leader**

SAP, headquartered in Walldorf, Germany, has developed a reasonably large footprint in the banking industry, mainly in the areas of transactional banking, financial and risk management, and CRM. EMEA is its largest market in terms of revenues, followed by the Americas and Asia-Pacific. The mobile banking solution became part of SAP with its acquisition of Sybase. The vendor’s existing footprint in the banking sector gives it a good opportunity to further grow its mobile business. Today, its mobile banking solution suite forms part of its banking portfolio and fits within its Global Integrated Financial Services business unit.

SAP noted an increase in annual revenues both across the company and in its banking vertical in 2013. SAP (Sybase) has a solid customer base for its digital channels solution, originally in North America, and it has gained a greater share of the market in EMEA and Asia-Pacific since the Sybase acquisition. SAP has approximately 150 banking customers using its online banking and mobile
banking solutions. SAP Mobile Banking has deployments in the US, Canada, the Dominican Republic, Qatar, Indonesia, Bangladesh, Pakistan, Malaysia, South Africa, Guatemala, and Australia, and the solution covers both consumer and corporate banking functions.

**Figure 21: SAP: market impact radar**

Source: Ovum

SAP Mobile Banking is part of the mobile commerce suite that includes SAP Mobile Inclusive Banking, commonly known as Mobile Money. The principles of SAP Mobile Banking are flexibility and standardization. The SAP Mobile Banking solution helps ensure security through built-in multifactor authentication (MFA) in mobile enrollment as it flows through different channels. The solution provides the flexibility to modify existing use cases and customize user functionality based on customer requirements. It provides functionality for account activity, transaction history and details, bill payment, P2P transfers and payments within and between financial institutions, alert management, and notification preferences. Predefined portals enable customers to create specific limits, restrictions, and functionality for each type of channel or user.

Banks have the flexibility to launch mobile Web and rich client apps for different mobile OSs, such as iOS, Android, and BlackBerry. In addition, SMS, interactive voice response (IVR), and unstructured supplementary service data (USSD) tools enable banking clients to launch banking services across more channels. A basic set of UI templates and a reference mobile banking application is supplied with the product, which can be used as is or customized by the bank. The solution provides a list of APIs that can be used for native mobile apps, hybrid apps, mobile web apps, and other digital channels. Custom workflows can be supported through partner development or SAP Services. SAP’s mPayments module is a complementary module to SAP Mobile Banking, which provides
Out-of-the-box functionality for payments such as P2P, remittance, government-to-person (G2P), person-to-government (P2G), merchant, and bill payments.

Over the next two years, SAP plans to roll out major functionality including tighter integration with the SAP Online Banking offering, and new revenue-generating features such as mobile product origination, money movement improvements, location-based services, rewards integration, augmented reality, loyalty enhancements, integration with complementary SAP Applications, and biometrics for authentication.

**Figure 22: SAP: technology radar**

SAP Mobile Banking is quite mature, as it was launched in 2000 (as a Sybase solution), and it is currently in version 5.1.3. The solution consists of the following components: Mobile Banking (which delivers consumer and corporate functionality), Mobiliser Platform (an SOA platform), Smartphone Mobiliser (smartphone support layer), and Brand Mobiliser (for brand management).

The solution uses and supports open standards. It is implemented as a 3-tier SOA using Spring and OSGi as the base technology, with the persistence layer using JPA and Hibernate. Caching is used extensively to offload the database and reduce the communication overhead. All services are exposed as simple object access protocol (SOAP), RESTful, or simple HTTP, using XML or JSON formats as well as open data protocol (OData) for creation and retrieval. For integration with identity managers (IDMs) it supports lightweight directory access protocol (LDAP) out of band (OOB). The implementation uses basic Java Enterprise Edition (JEE).

A typical greenfield implementation and a legacy migration each take around 6–9 months. The tools that are typically used for data migration preparation and execution are the SAP Power Designer, Sybase ETL Developer, and Eclipse. The solution can currently be deployed on-premise, but SAP plans to release hosted and private cloud versions. SAP Mobile Platform 3.0 supports application lifecycle management, including controlled update of apps, governance, usage analytics, security
policies, and UI design (SAPUI5 using HTML5). New releases are available every 12 months, and the
minor upgrade process typically lasts about a month.

SAP handles an extensive partner ecosystem: around 70% of all financial services revenues involve a
partner. Its main partnerships are with IBM, Accenture, Deloitte, Atos Origin, TCS, CSC, Capgemini,
and Bearingpoint. SAP Active Global Support maintains six global support centers in Austria, China,
India, Ireland, Malaysia, and Spain, which are part of its global “follow-the-sun” support service
network providing 24×7×365 coverage. Due to local and regional requirements, it has a further 14
support locations around the globe, totaling over 6,000 members across the entire company.

Figure 23: SAP: execution radar

SAP’s Mobile Banking solution is constantly being developed, as is the vendor’s overall mobility
strategy. SAP transformed the heritage Sybase solution from a solid and established solution in North
America to an enterprise-ready suite with a very rich, clear development path and functional roadmap.
SAP’s expertise in banking software is visible within its overall development strategy and provides a
strong differentiator. Ovum believes that banks should shortlist SAP Mobile Banking when looking for
a next-generation mobile banking solution that is ready for further growth.

TCS – Ovum recommendation: follower

Tata Consultancy Services (TCS) is headquartered in Mumbai, India. The company was launched in
1968 and has 230 offices in 46 countries across the globe. TCS Financial Solutions offers the TCS
BaNCS financial product suite, of which the mobile banking offering is a part. Its total revenues
increased by around 16% year-on-year, including both software and services, in FY2014. The TCS
BaNCS mobile banking solution is built on TCS BaNCS channels framework and it has around 70
dedicated employees. The vendor has a number of clients using its digital banking solution, and it
recently launched its standalone mobile banking offering.
The TCS BaNCS mobile banking offering comes with a number of pre-defined functional modules including accounts, loans, bill payments, transfers, cards, insurance, customer information, alerts and notifications, messaging, authentication and authorization, reporting, campaign management, wealth management, and securities trading.

The solution supports SMS banking and WAP for feature/multimedia phones, and it also supports native platform development for iOS and Android. The vendor is currently migrating to a solution that is based on a hybrid mobile development platform, which uses HTML5 to render the UI. This should enable TCS to provide a unified experience across devices and platforms. In addition, the solution is designed to incorporate custom UIs based on a bank’s requirements and its user base.

The solution’s PFM feature is driven by the TCS BaNCS wealth management solution. It caters to the mass affluent segment of customers, and its capabilities include views of customer holdings based on different aspects such as currency, geography, and industry. It also provides various existing financial plans and Monte Carlo simulations to use for future planning and targeting.

TCS BaNCS uses Java authentication and authorization service (JAAS) to enable authentication. In addition, the solution can integrate with third-party solutions. The vendor also supports out-of-the-box user authentication/authorization and user management, which can be enabled in absence of an SSO solution in the customer environment. Key items on its product roadmap include loans management, document management, payments, and social media integration.
TCS launched its first mobile banking solution in 2009. The current version is live in Australia, the Middle East, and India, while the US and Europe are major target markets. The hybrid architecture, which is an HTML5-based client with Apache Cordova for native integrations, has recently been launched. The client consumes JSON services exposed by JEE-based channels middleware, and the middleware simplifies integration with bank’s security and back-end systems. It utilizes multiple protocol adaptors including SOAP/HTTPS web services, sockets, Java Message Service (JMS), and Message Queue (MQ) for banking services’ integration, and it uses JAAS for user authentication and SSO integration. The middleware also contains an in-built user management and authentication module for customers not requiring SSO capabilities, along with LDAP integration capabilities.

A typical greenfield implementation would take 4–6 months depending on the feature set and integrations, and the most recent legacy migration took six months. The vendor currently offers license-based on-premise installations and it uses the hosting services of its partner CenturyLink Technology Solutions.

To develop the solution, TCS uses a hybrid development methodology with attributes taken from Agile and Waterfall development methodologies. TCS BaNCS provides one major release and two minor releases each year. It can scale to 300,000 customers, and the platform has supported 2,000 concurrent users. Its largest deployment has 400,000 accounts.

TCS BaNCS is supported by over 20 full-time employees and 10 full-time trainers. It has a 24×7 dedicated product support team based in India, with regional support capabilities across geographies.
The main strength of TCS BaNCS is that it is an out-of-the-box solution for fast deployment, especially for current back-office and online banking clients, as it comes with a pre-defined integration engine. It has a solid level of supported functionality, and future releases are expected to make the solution even more competitive. The fully functional hybrid version has recently been launched with one live implementation in the Middle East. The solution has also been launched as a standalone mobile banking offering, and this makes it a viable option for upgrades and cross-selling to existing clients. The offering is solid and provides a good foundation for further growth. Consequently, Ovum recommends that banks explore the mobile banking offering of TCS BaNCS when searching for a next-generation mobile banking solution.

**Temenos – Ovum recommendation: challenger**

Temenos has its headquarters in Switzerland and its center of operations in the UK, as well as offices around the world, concentrated mostly in Western Europe. It was founded in 1993 and launched its first mobile banking solution in 2007. Its Channels business unit is responsible for its mobile banking platform, while its Retail, Wealth, and Corporate units are responsible for the vertical-specific functionality configured within the vertical banking solutions. It has around 3,500 employees, of which over 150 focus on the channels solutions and 82 on R&D. Temenos currently has 21 live customers using its mobile banking solution in 21 countries, with a concentration in EMEA. The vendor is most known for its T24 core banking solution, and while ARC Mobile was its first mobile banking solution (through acquisition), after the acquisition of Edge IPK it made a strategic decision to focus significant resources on the development of its digital channels (Temenos/edgeConnect), including Temenos Connect Mobile Banking (TCMB).
Temenos is aggressively pursuing a path to provide a single platform that addresses all of the “digital channels” requirements of banks going forward. This means that ARC Mobile will continue to be sold to customers that need legacy handset support and want only a mobile solution. TCMB's lean portal technology allows the support of multiple user devices with a single underlying platform, and the vendor is now rolling it out to provide an enhanced user experience for mobile banking users.

TCMB is essentially a mobile extension of the Temenos/edgeConnect UXP multichannel strategy, where enhanced HTML5 (including responsive web) is used for online banking and “SmartHybrid” apps for all major smartphone platforms with HTML5 web app support. “SmartHybrid” refers to a combination of native and classical hybrid components within an application. The native part typically provides access to the phone features such as camera, GPS, and address book, and manages performance and app updates, while the hybrid part takes care of the functional parts of the application, including the native “look and feel” and experience for iOS, Android, and Windows Phone users.

This approach allows Temenos to enhance configurability (with high fidelity/pixel-perfect layout), provide near-native user experience (shells and skins for iOS, Android, and Windows), enhance device access (phone functionality such as camera, GPS, and phone book), and enable dynamic content (update without new downloads).

This development puts Temenos on a more competitive track in the mobile banking development race. Although its initial development focus after the Edge IPK acquisition was on the online banking side, this has now shifted toward mobile support with an open architecture that can support a range of
new devices in the future. The product roadmap includes leveraging HTML5, gestures, contextual computing, the Internet of Things, sensors, authentication, screen technology, cloud, behavioral analytics, and payments.

**Figure 28: Temenos: technology radar**

Temenos' platform has two key elements: the Integrated Development Environment (IDE), providing a "code free" configuration solution, and a server – Run Time Environment (RTE) – for managing performance, scalability, and security. TCMB is delivered with a set of processes and flows for out-of-the-box functionality (e.g., accounts, transactions, and payments). These can be extended and customized using the edgeConnect Developer IDE, as new functionality can be added. The IDE enables the rapid development, visualization, and maintenance of business solutions, while the RTE is the server platform that renders a completed application for end users.

Given its relatively recent launch and the vendor’s significant investments, the solution has strong growth potential, especially among current and prospective T24 customers looking for a mobile banking upgrade. Greenfield implementations typically take around 3–6 months, while legacy migrations take around 6–12 months depending on their size and functional requirements. Only a licensed version can currently be deployed. Temenos has a core team of professional services staff to handle implementations, and it also works with around 17 SI partners, with Cognizant being its major partner for channel implementations. All core development is undertaken by the vendor. TCMB uses edgeConnect's Early Visualisation Approach methodology, which allows for a short number of iterative sessions between business users and analysts, allowing the quick mockup and specification of the application screens and flows.

The solution’s highest performance benchmark shows it can handle 17,305,200 transactions per hour, with an average response time of 401ms. Its major releases are annual, and it has four dedicated trainers. The vendor provides 24×7 support from its help desk in Chennai and additional help desk support in eight countries in local languages, totaling around 200 staff.
Temenos has made a significant improvement to the Temenos Connect Mobile Banking (TCMB) solution in the last few months, and this has resulted in a very sound and competitive offering for new and existing clients. The major strength of the solution lies in the vendor’s approach to designing and deploying user experience portals on mobile devices. The strong focus on developing mobile channel technology also impacts the product roadmap and the availability of new features with further releases. This aligns well with current market requirements, as banks are looking increasingly to vendors to support new technology developments. Therefore, Ovum believes that Temenos Connect Mobile Banking should be considered by banks looking for a next-generation mobile banking solution.

Appendix

Further reading

*The Impact of Digital Transformation on Bank Branches*, IT0003-000610 (June 2014)
*Retail Banking IT Priorities for 2014 and Spending Forecasts to 2018*, IT003-000609 (April 2014)
*Examining Use Cases for Big Data in Banking*, IT003-000594 (February 2014)
*Ovum Decision Matrix: Selecting a Next-Generation Banking Digital Channel Platform*, IT003-000596 (December 2013)
*Assessing the Next Stage of Mobile Banking*, IT003-000573 (August 2013)

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Ovum Decision Matrix: Selecting a Next-Generation Mobile Banking Solution

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We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Ovum’s consulting team may be able to help you. For more information about Ovum’s consulting capabilities, please contact us directly at consulting@ovum.com.

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