CELENT

DELIVERING AN OMNICHANNEL CUSTOMER EXPERIENCE

PART 2: VENDOR SPECTRUM

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EXECUTIVE SUMMARY

Retail banking, like the broader retail industry, is at an inflection point — a reset moment triggered by consumers' broad and rapid adoption of smart mobile devices and their propensity to use them for a growing number of tasks. In this environment, consumers (and even your bank associates) make less of a distinction, if any, between channels. Instead, large and growing segments of consumers expect an integrated engagement experience with retailers, one that bridges the digital and physical domains. Delivering on this expectation is the core challenge of omnichannel banking.

To say "This is easier said than done" would be an egregious understatement — particularly for large organizations running multiple, intractable legacy systems.

In a previous report[1], Celent advocated the migration toward a single, omnichannel customer experience platform that spans self-service and assisted access points. Recognizing the path forward for many banks will be a long one that includes multiple, incremental initiatives, this report compares leading solution providers and their platforms and offers key considerations for choosing the right solution for your bank. From Celent's research, it is not "if" but "when" the significant majority of banks purposefully move in this direction.

KEY RESEARCH QUESTIONS

1 *What are the leading customer experience platform solutions?*

2 *How do the solutions compare?*

3 *What are the considerations in making a vendor selection?*

While the term "omnichannel" is less trendy than it once was, it remains a nascent aspiration for financial institutions. Definitions vary as much as do solution capabilities; the enduring common element is that most vendors and banks still have a long way to go — although the vendors have a significant head start. Vendors are taking omnichannel customer experience platforms (CXPs) to market as many institutions formulate long-term digital strategies, looking to implement technologies which will help them compete today as well as provide the foundation for the future.

While the solutions are diverse, Celent observes these relatively common elements:

- Most vendors didn't start with omnichannel ambitions. They built upon legacy applications in response to changing customer and bank expectations.

- Vendors are selling what they have, contributing to the noise and confusion in the market. Distilling actual capabilities from the marketing spin is time-consuming.

- Implementations are limited in scope and vary wildly depending on starting point, urgency, appetite for change, and target end state.

- Even the vendor market has a long way to go. Vendors are still largely building out omnichannel capabilities. Foundations are in place in many cases, but much work remains to build and certify API integrations, microservices, and the like. Broad

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[1] *Delivering an Omnichannel Customer Experience: Why a Single Platform Is the Way Forward*, June 2017

capability is rarely available out-of-the-box. One way this shows up is in the LoBs supported. Most vendors began developing CXPs for retail and business banking. Few have broad LoB support. Vendors, however remain well ahead of most banks.

- CXPs aren't generic systems of enablement. Instead, to varying degrees, vendor-provided CXPs offer pre-built, nominal capabilities most banks need. One way to appreciate this is to note the sheer number of prebuilt APIs and third party integrations offered. In several cases, they number in the hundreds. These translate directly to time and effort savings, tipping the scales in favor of buy versus build.

Recommendations

Celent recommends that institutions implementing an omnichannel customer experience platform consider the following:

- **Develop an omnichannel architecture strategy today**: Omnichannel represents a confluence of previously siloed channels and technologies. This makes the decisions much harder, as seemingly every vendor is branding its solution as "omnichannel." A clear understanding of the concept of omnichannel and the proposed end goal of the institution will be crucial to cut through the noise.

- **Don't let high-priority use cases blind you**. Omnichannel customer acquisition, for example, is a practical necessity today and a rightful high priority. But, it is also but a single omnichannel use case. Too many banks have omnichannel myopia and neglect mid-term benefits for short-term expediency.

- **Don't try to boil the ocean**: Banks are conservative institutions with deep-seated dependencies on archaic technology. The umbrella of omnichannel captures many LoBs and existing systems. The path to enterprise omnichannel delivery will be necessarily long for most banks. Start small. Begin now. Plan for the long term.

- **Leverage consulting services**: Many of the vendors in this report have consultants specialized in either technical or strategic services.

This report begins with Celent's definition of omnichannel and the concept of an omnichannel customer experience platform (CXP). It then looks at vendors of off-the-shelf CXPs, followed by a high-level comparison of solution capabilities. The report then details considerations for banks contemplating a CXP-based omnichannel architecture. Three appendices contain Celent's research methodology, detailed functional comparison tables, and profiles for each of the following fifteen participating vendors: Backbase, CR2, CSI, Edgeverve, Finastra, FIS, Fiserv, Intellect, NCR, Oracle, Technisys, Temenos, Terafina, Unisys, and Zenmonics,
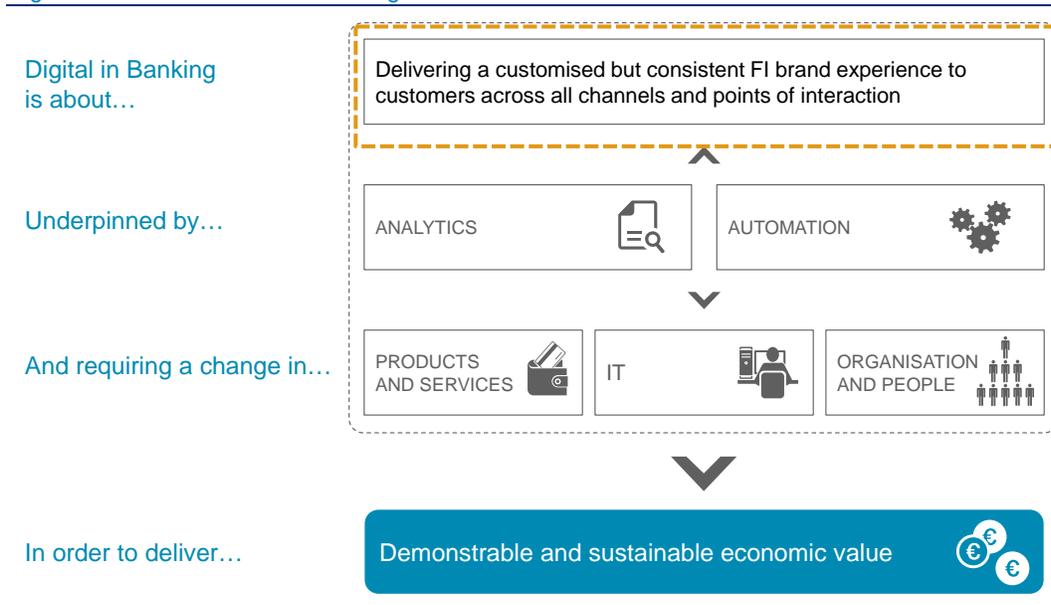
Note: The objective of this report is to provide a preliminary overview of the vendors and platforms in the market. Omnichannel customer experience platforms touch a broad array of systems and use cases, many with enough depth to warrant their own report. Our goal is to provide an overview and some context, not to provide an exhaustive deep dive. As with most evaluations, the devil is in the details. Banks should use this report, as well as *Delivering an Omnichannel Customer Experience (Part 1): Why a Single Platform Is the Way Forward,* as introductory guides along their omnichannel journey.

DEFINING AN OMNICHANNEL CXP

In Celent's view, omnichannel delivery is a necessary but not sufficient capability for becoming a digital bank. Plenty of banks have invested in analytics and automation, for example, but have leveraged those investments within channel silos. Marketing automation tied to a bank's public domain website is one example. Conversely, digital is not strictly required for omnichannel delivery, but it is increasingly required to do omnichannel *well*. The distinction may appear nuanced, but it is important.

Celent views digital in banking as much more than perfecting one's digital presence. We believe that digital requires substantive structural change in the financial institution across multiple elements: culture, organization, IT, products, and governance. It also requires change in how work gets done, through the systematic use of automation and analytics in front, middle, and back office work. Celent's framework for digital in banking is depicted in Figure 1. A full discussion of the framework is found in the Celent report *Defining a Digital Financial Institution: What "Digital" Means in Banking*, December 2014.

Figure 1: Celent's Framework for Digital

Digital in Banking is about…

Delivering a customised but consistent FI brand experience to customers across all channels and points of interaction

Underpinned by…

ANALYTICS

AUTOMATION

And requiring a change in…

PRODUCTS AND SERVICES

IT

ORGANISATION AND PEOPLE

In order to deliver…

Demonstrable and sustainable economic value

Source: Celent

While arguably simplistic, the essence of omnichannel retail delivery is firmly tied to the customer experience highlighted in Figure 1, *"Delivering a customized but consistent FI brand experience to customers across all channels and points of interaction."* This is important because although banks may currently think and organize around channels, customers do not. They reasonably expect the brand experience to be consistent no matter how they interact with their bank or credit union. Doing so involves three things (Figure 2):

- **Optimizing a cross-channel experience by building on individual channel strengths**. We recognize that each channel is different. The way the customer engages with, say, mobile is different from interactions at the branch or call center. As a result, we don't think that all channels must offer the same functionality or even access the same information in all cases. Instead, we believe customer experience via an individual channel should be tailored to its strengths. For example, an investor may want a timely alert and ability to act on that information (e.g., sell/buy shares) on

his mobile but is more likely to prefer online and physical channels for in-depth research.

- **"Zero drop rate" channel integration**. The customer should be able to move seamlessly between different channels, such as picking up a previously saved application process or having an agent conversation in session without having to reauthenticate or re-enter and repeat data. Customers expect that any transaction they perform is known to the financial institution.

- **Mutually reinforcing channels** (for example, a live video chat from within a mobile banking app or an automated kiosk inside a branch). Creative use of digital technologies in physical channels is an essential component of omnichannel delivery. This too will be a moving target. Examples include video teller access within a branch, enabling new account funding or bill pay from a kiosk, and cardless cash access at the ATM.

Figure 2: Three Components of Omnichannel Delivery
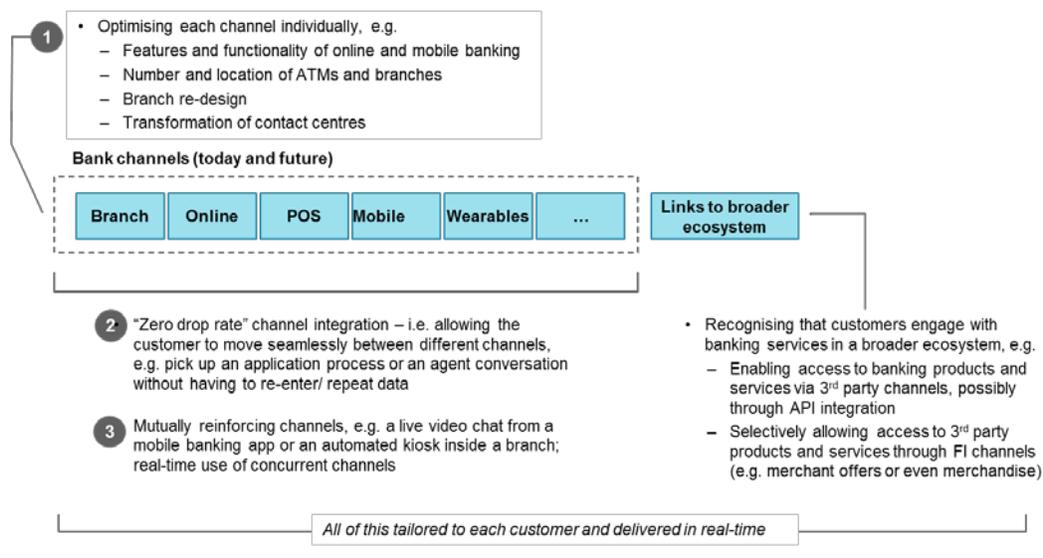
Source: Celent

These three transcendent requirements highlight the importance of real time information and consistency of data across channels, delivering a single version of truth across all customer touchpoints — both externally to the customer and internally to front line staff. Not only must messaging, branding, and processes be consistent across channels, but so must the data. This is particularly difficult when nearly every channel runs on its own technology stack.

CXPs are a sensible path to this outcome — and more. Beyond addressing the customer experience, CXPs can be the foundation for a bank's digital transformation, leading to multiple benefits, such as:

1. **Streamline various system connection points.** Rather than maintaining a many-to-many front end / back end set of connection points, all systems of interaction and systems of record are connected to the system of enablement using a single set of APIs.

2. **Reduce technology debt of point solutions**. New capabilities are routinely deployed across multiple channel platforms, requiring iterative development, testing, and maintenance efforts. Even when legacy systems remain in place, the use of a system of enablement provides a much streamlined process for improved capabilities, reducing the technology debt of point solutions.

3. **Lower ongoing maintenance costs**. Many systems of enablement are built using modern software frameworks and contain flexible, no-code design tools.

4. **Facilitate innovation**. Banks need to be able to effect more rapid technology change. Doing so with a manageable investment in resources is key.

Vendors get this, but many banks still do not, particularly banks that have not yet architected for omnichannel (the majority of US banks, according to Celent surveys conducted in December 2016 and June 2017. An analysis of the latter survey is available in the Celent report *Anatomy of Omnichannel Delivery in North America*, July 2017. Figure 3 illustrates.).

Figure 3: Benefits of a CXP-Based Architecture Are Many
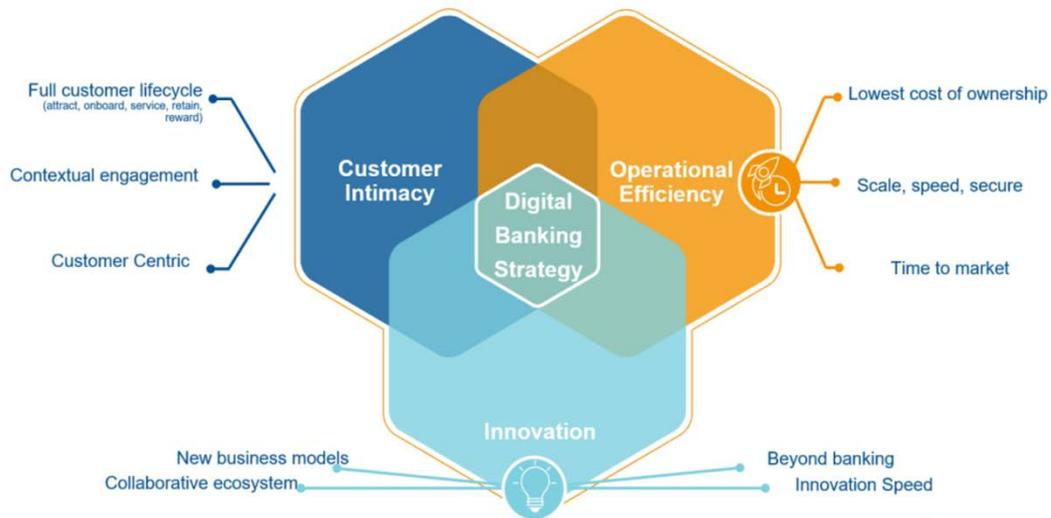
Source: Temenos, used with permission

CXPs represent a specific architecture approach to accomplish much-needed management of the front end to back end to external system integration by acting as a system of enablement. More than an SOA layer, CXPs combine easily managed business rules, essential data, common capabilities, and an API-driven integration layer that coexists persistently alongside systems of interaction (branch, digital, contact center, ATM platforms, etc.) and systems of record (DDA, LMS, CRM, etc.).

Figure 4 contrasts legacy architecture with this type of a digital architecture.

Figure 4: Legacy Architectures Are Wholly Unsuited for Omnichannel Delivery
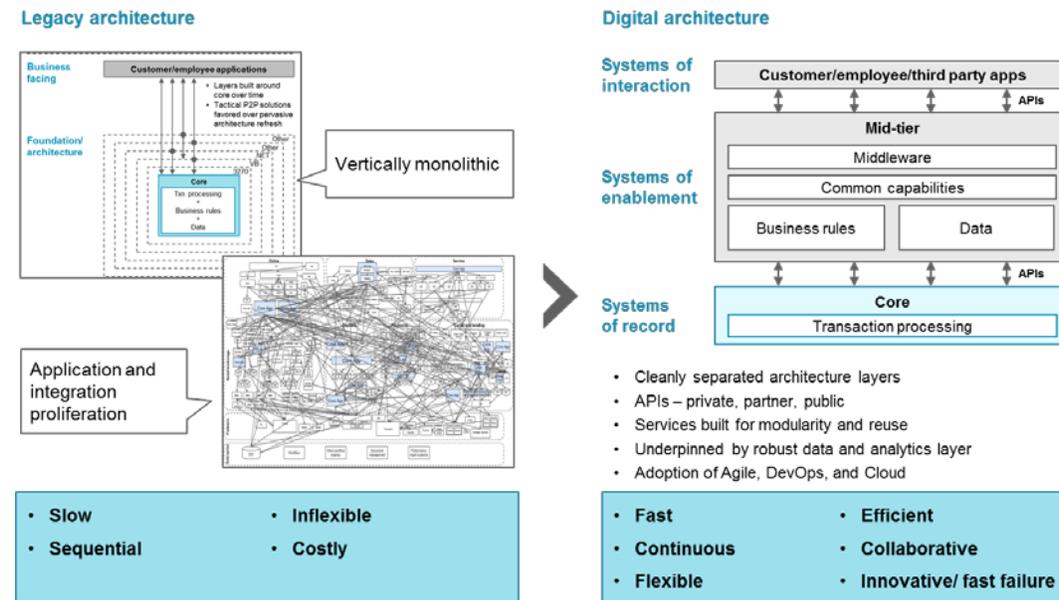
Source: Oliver Wyman

But, CXPs aren't generic systems of enablement. Instead, to varying degrees, vendor-provided CXPs offer pre-built, nominal capabilities most banks need.

NOMINAL CUSTOMER EXPERIENCE PLATFORM CAPABILITIES
In Celent's view six nominal capabilities are required to provide an effective CXP.

Enterprise Platform
Many implementations are use case-specific or channel-specific. What is needed is a single solution that spans both customer and bank associate users on the same platform. Some off-the-shelf solutions positioned as omnichannel CXPs are designed solely for digital self-service. Others facilitate customer engagement (campaigns, emails, social media, etc.) and are sold to marketing departments. While helpful, these solutions do not address the complexity of legacy channel systems. In Celent's view, banks should implement CXPs that:

- Span sales/service and transactional capabilities.
- Demonstrably support all points of customer engagement: online, mobile, branch sales and service, teller, kiosk/ATM, contact center, and mobile banker.
- Support all common use cases: customer acquisition, disputes, transactions, problem resolution, and recommendations / advisory services.

Banking Channel Services API Architecture
To manage complexity of legacy systems and provide needed agility, CXPs should expose RESTful web services for any channel applications (including vendor or non-vendor) to share services, data, processes, and workflow. This offers exceptional value by providing a "write once run everywhere" ability to reduce cost and time-to-market to implement new capabilities across multiple points of engagement.

Seamless User Experience and Data Flow Between Customers and Associates
Customer activity data is shared across points of engagement in real time, providing a 360-degree customer view. In addition to a single version of the truth, user experiences must be orchestrated to be as similar and seamless as possible, while traversing legacy

channel systems. This can be achieved using the same UI code modules (i.e., funds transfer, stop payment, account opening, etc.) across user applications.

Seamless data flow can be achieved using stateless processes that can start/stop in any access point and be retrieved/completed in any other (achieved by having a digital API with persistence) with real-time data sharing across access points, users, and channels. This removes the need for legacy batch processes, rekeying of data, brittle Extract, Transform, Load (ETL) processes, and coordination of data exchange between disparate vendors and systems. In so doing:

- Data is shared in real time, so a customer can click on an offer, start an application, or dispute a transaction, with the bank having instant access to that in real time.
- When a customer disputes a transaction, a case can be automatically created in the back office contact center, with all relevant information ready for review with electronic forms/signatures.
- Forms, acknowledgements, signatures, etc. can happen in real time.

Modular

Many institutions are heavily invested in the user experience across self-service channels. Implementing an omnichannel CXP should not result in any compromise of the bank's UX layer. A CXP should allow the bank to implement incrementally, for instance starting with rolling out account origination across channels, then addressing sales and service needs in the branch, then contact center, then migrate to advanced in-lobby ATMs, and so on. Each implementation should leverage the same integration points, business processes, and rules so that as the deployment spans channels, each channel becomes easier and easier to implement. This stands in sharp contrast to past approaches where each legacy point solution required its own integration and user interface.

Supports a Path Toward a Unified Omnichannel Platform

While a single omnichannel platform is not on many banks' roadmaps, we think it will be increasingly difficult to justify multiple channel platforms in the long term. Recognizing the redundant capabilities across channel platforms and the opportunity to serve all channels with a single, device-agnostic, responsive user interface, this approach could be compelling eventually for its low cost and simplicity. The obvious downside of this approach is that it requires rip and replace of multiple, legacy channel platforms. Few institutions would contemplate this outcome as a single initiative, but it is a logical end game that has already begun among institutions with a single digital stack.

Banking Specific Solution

While many CXP solutions provide generic UI toolkits that can fit multiple industries, banks benefit from a solution that provides prebuilt banking functions to accelerate their roadmap and remove the burden from their teams to create applications, API services, and specific banking functions that include, for example, account origination, scheduled appointments, opportunity management, case management, and more. Several solutions also provide out-of-the-box compliance to regulatory requirements to ease the burden on the bank.

The following sections provide a comparative analysis of generally available omnichannel CXPs using a methodology detailed in Appendix I.

VENDOR TAXONOMY

Celent reached out broadly to vendors across the globe to provide a comprehensive comparison of CXP solution capabilities. We found a surprising number of vendors offering CXPs with widely varying capabilities. Of the 21 vendors Celent contacted, 15 responded to our detailed RFI. Auriga, CapGemini, Pegasystems, and Salesforce declined to participate. Other vendors, such as Jack Henry and Sopra, initially reacted positively to inclusion, but declined after examining the depth of our RFI.

This section looks at the vendors. Subsequent sections dive into the CXPs themselves.

| *Key Research Question*	*What are the leading customer experience platform solutions?*
1	Celent identified 21 commercially available CXPs designed specifically for financial institutions.

Celent observes five tangible dimensions of vendor attributes.

1. **Size.** Particularly among global banks, the size of a vendor alongside demonstrable ability to support large deployments may be a significant factor in vendor selection.

2. **Pedigree.** Many vendors come from a financial services pedigree and serve primarily financial services firms. Others serve multiple industries. Some banks appear to strongly prefer vendors who know their business intimately.

3. **Problem focus.** In this taxonomy, there is great diversity among vendors. Some are laser focused on providing a compelling user experience while accommodating existing legacy system constraints. Others are omnichannel retail delivery platforms that offer customer acquisition capability as a starting point in a larger channel platform migration plan. Others address both the UX and back office workflow.

4. **Geographic presence**. An obvious solution consideration, banks want vendor solutions that support local language and currency and vendors with a deep understanding of the markets in which they operate.

5. **Target segment**. Many banks prefer to use vendors with a rich installed base of clients of similar size. Like other solution spaces, vendors vary considerably in terms of how their client base looks by asset tier.

Size

Vendors profiled in this report span the gamut from small, privately held concerns to fintech juggernauts (see Figure 5). Size is often a consideration for banks concerned with vendor scalability and ongoing financial viability. Note the logarithmic scales in Figure 5.

Figure 5: Vendors Range from Small ISVs to Massive, Global Firms
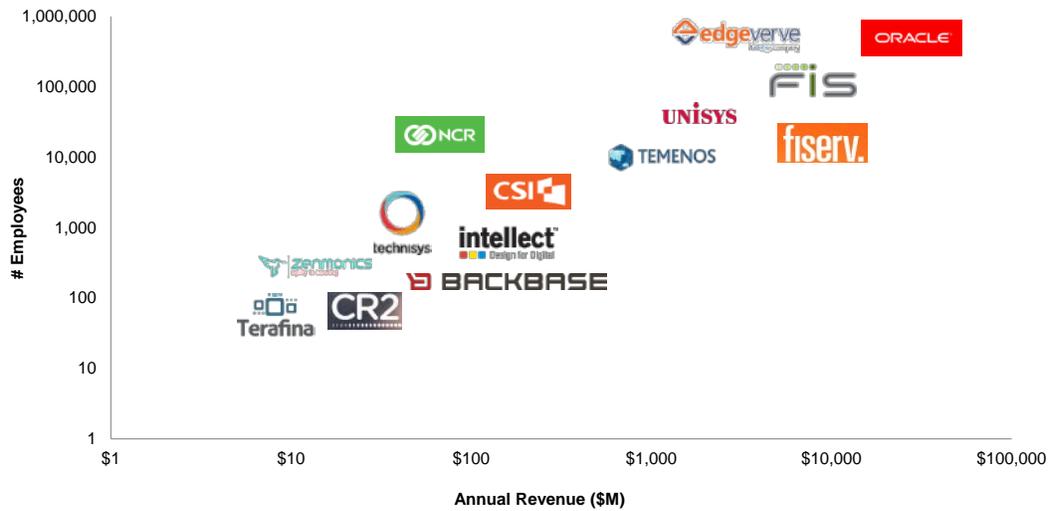
Source: Vendors, Celent estimates

Pedigree

An obvious way to segment vendors is to look broadly at each vendor's product portfolio. Doing so reveals a clear distinction between those with comparatively focused product lines (Backbase, CR2, and others) and larger vendors with broad solution portfolios (see Figure 6). Generally, smaller vendors with more focused offerings (CR2, Backbase, Zenmonics) have a more developed CXP capability. Conversely, vendors with comprehensive product lines *generally* support a wider range of use cases out-of-the-box and may offer broader support across LoBs, but typically do so utilizing legacy channel applications.

Figure 6: Vendors Reflect Diversity in Pedigree

Source: Website, web and literature search, analyst reports, Celent experience and interviews

Pain Points Addressed

Problem focus is a significant point of difference among covered solutions. Naturally, many vendors tackle pain points in relation to their existing customer base. Because existing client needs often dominate product roadmaps, resulting solutions often reflect

proximate client needs. Large vendors with diverse customers, such as Fiserv, Oracle, and NCR, are helping their customers modernize. Many of these institutions are coming from entrenched legacy technology environments, and as such the emphasis is on evolution rather than disruption. Incumbent vendors must accommodate proximate client needs or risk displacement. Conversely, some newer vendors are entering the market with younger products and a mission to bridge the gap between the current state of the industry and the "art of the possible." These vendors boast comparatively modern technology and interesting implementations, but sometimes tackle pain points a few steps ahead of the average institution. These vendors have impressive capabilities, but few— if any — clients utilizing their capabilities to the fullest. Figure 7 illustrates this dichotomy by mapping CXP vendors along two dimensions; relative size of client base and the pain points most readily addressed with their CXPs.

Figure 7: Vendors with Large Client Tend to Evolve with Client Needs Rather than Lead Them
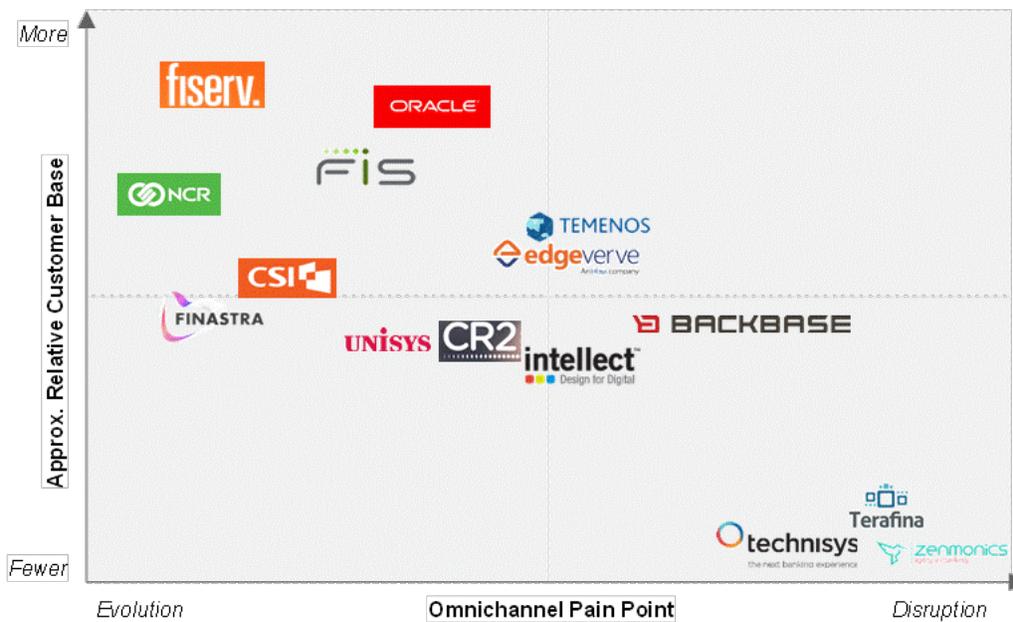
Source: Website, web and literature search, analyst reports, Celent experience and interviews

Vendors unanimously concede tepid adoption of their CXPs. Instead, they are being asked to address narrow use-cases such as: omnichannel customer acquisition, personalized engagement across channels, migrating to a single digital channel stack or tablet support in the branch. No doubt, some banks are running CXPs without a good understanding of the platform's capabilities. At the very least, there are many examples of banks not yet utilizing the CXPs to their full potential. More than one vendor conceded, *"We have yet to see an RFI for a CXP."* This is consistent with Celent research among North American financial institutions, which highlighted the nascent stage of most banks' omnichannel journey (see the Celent report, *Anatomy of Omnichannel Delivery in North America: Digital Panel Series Part 7*, July 2017. This suggests that at least the several vendors in the lower-right of Figure 8 are well ahead of most banks.

Geographic Presence
Vendor geographic footprints are diverse, with comparatively few vendors specifically targeting North America (see Figure 8). Generally, vendors that sold mostly in EMEA have a more diverse geographical footprint, usually across both EMEA and APAC. Technisys was the only participating vendor with an entirely LATAM client base.

Share of installed base by region

■ NA ■ EMEA ■ APAC ■ LATM
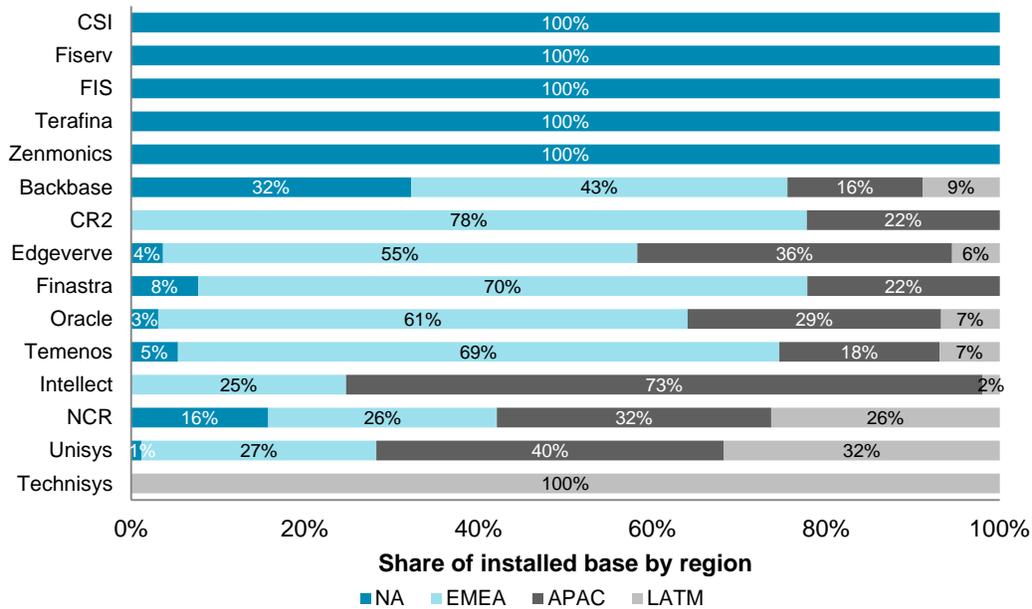
Target Segment

Figure 9 illustrates client asset mix across the CXPs in this report. The problem areas and pain points financial institutions can depend on size, and while there are digitally mature banks across all tiers, asset breakdown can be a useful generalized proxy for system fit. Without exception, each vendor's CXP clients are a fraction of their overall base. For this reason, Figure 9 graphs each vendor's *overall* client base. For example, NCR's data excludes its ATM and ATM software clients, but includes all other products.

Figure 9: Vendor Client Mix Across All Products Varies Predictably by Asset Tier

■ <$1 Bn   ■ $1-20 Bn   ■ >$20 Bn   ☐ <$10 Bn   ■ $10-50 Bn   ■ >$50 Bn   ■ NA

Unisys
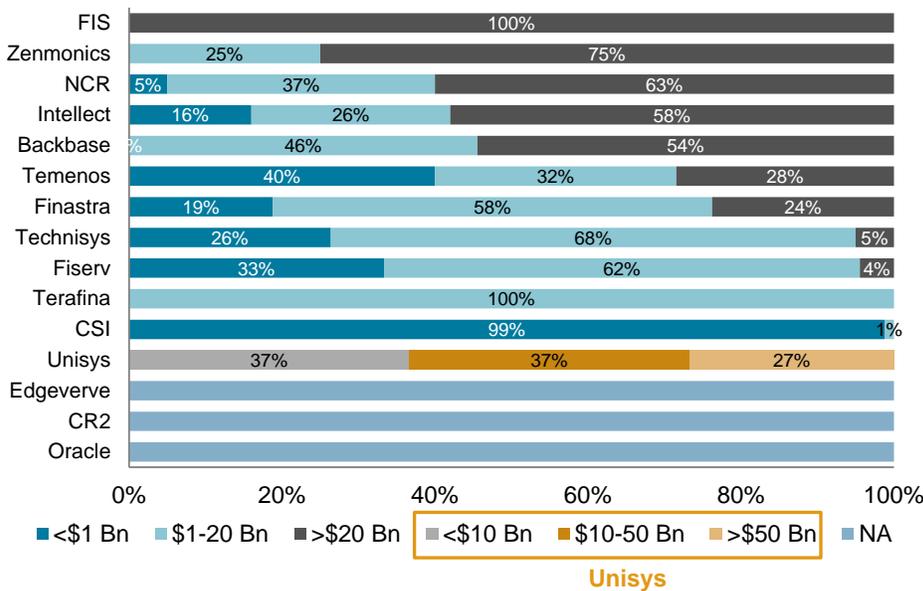
With vendor taxonomy in hand, the next section dives into comparing CXP capabilities.

SOLUTION COMPARISON

Celent examined 15 generally available omnichannel solutions from the vendors compared in the previous section. To aid in highlighting solution differences, we look at CXP capabilities along five dimensions.

1. Architecture.
2. Implementation methods supported.
3. Points of customer engagement supported.
4. Use cases supported.
5. Lines of business supported.

Key Research Question

2

How do the solutions compare?

Most CXPs are similar architecturally, but offer widely varying capabilities along several dimensions.

Architecture

Omnichannel solutions require architectures that can facilitate a variety of omnichannel use cases — from account and loan origination to collections. These systems need to be flexible enough to integrate into a wide variety of environments while leveraging frameworks to orchestrate omnichannel business rules and workflows.

Vendors are at different points of architectural maturity. Larger vendors with established product sets are typically engaged in modernization efforts. Many grew their product suite through acquisition and are undergoing efforts to strengthen product integration. In Table 1, Celent examines various architectural elements, contrasting those that were relatively common and uncommon across the solutions in this report. Uncommon elements were naturally more likely to be found in younger systems, owing to relative modernity.

Table 1: Architectural Elements

COMMON ELEMENTS	UNCOMMON ELEMENTS
- Open, stateless, RESTful APIs. - HTML 5, responsive UIs. - Device and channel aware. - Persistent data layer and log for interactions. - Componentized architecture and licensing — buy what you need. - Broad library of API services.	- Single platform and same code across functional and LoB support. - Fully built pre-parameterized journeys to hasten time to market. - Every component exposed as an API endpoint. - Persistent business rules, rolled out harmoniously post-creation.

Source: Vendors, Celent analysis

Architecturally, there are a myriad of different elements required in an omnichannel platform. It must be componentized and modular for flexible deployment. It needs to maximize the flow of data. The platform needs to offer well defined layers. Fundamental, however, to omnichannel customer experience is the integration between different customer journeys. The best omnichannel CXPs facilitate use cases across a wide range of channels in a seamless way. They utilize integration layers and frameworks and expose all platform services as APIs.

Table 2: Integration Capabilities Reflect a Range of Maturity

	SEPARATE UX LAYER	SEPARATE INTEGRATION/ ORCHESTRATION LAYER	SERVICES EXPOSED AS APIs	PREBUILT VENDOR INTEGRATIONS
zenmonics	✓	✓	350+	NA
[VENDOR]	✓	●	All through API Gateway	Vendor Marketplace
[VENDOR]	✓	✓	All	50+
[VENDOR]	✓	✓	~40	6+
[VENDOR]	✓	✓	500+	35
[VENDOR]	✓	●	2 (acct. info. and pmts. initiation)	10+
[VENDOR]	✓	✓	350+ covering 200+ functions	20+
[VENDOR]	✓	●	All	100+
[VENDOR]	✓	●	200+	23
[VENDOR]	✓	✓	100+	37
[VENDOR]	✓	●	Image deposit and transaction processing	Select partners
[VENDOR]	✓	●	1,000+	Third party interface
[VENDOR]	✓	✓	200+	40+
[VENDOR]	✓		50+	20+
[VENDOR]	●	●	All	19
[VENDOR]	✓	●	All	Varies

Source: Vendor RFIs
Key: ✓=Supported; ●=Supported but integrated with product; ✗=Does not support

What we're starting to see more of is an open banking marketplace approach where vendors are granting financial institutions access a marketplace of authenticated and verified apps which can be integrated into their offering. In the omnichannel context, the marketplaces provide a comprehensive customer experience that creates an ecosystem of best-of-breed applications. Use cases open to institutions leveraging a marketplace become much more numerous, and integration is simplified. Temenos and Backbase are two vendors offering marketplaces (Figure 10) — a differentiating feature in the short term, but a capability we expect to become commonplace for its practical utility.

Figure 10: Temenos Vendor API Marketplaces
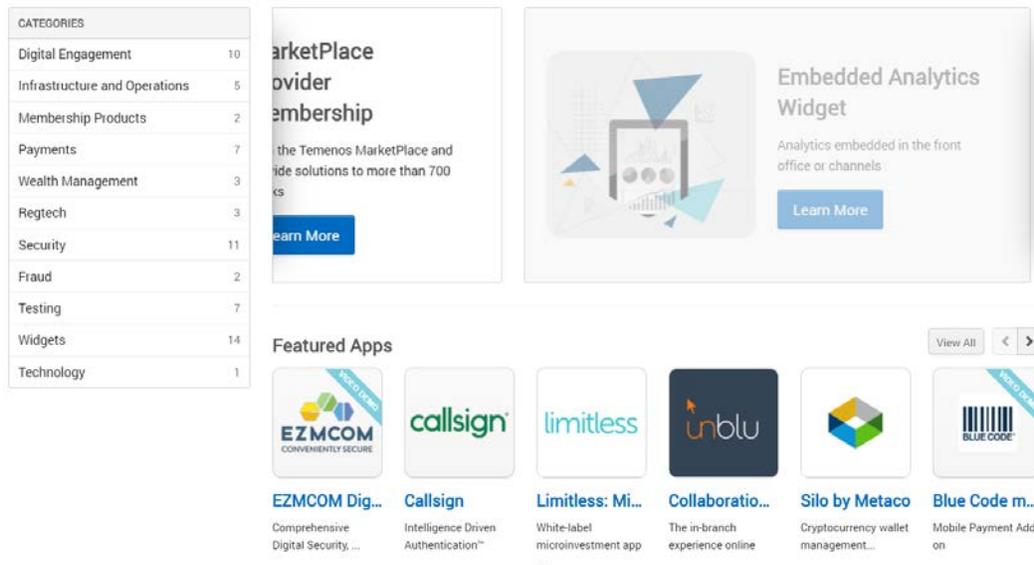
Source: Temenos Marketplace

Implementation Methods

Table 3 examines the deployment capabilities supported by each vendor. Most financial institutions are still very much in the throes of larger digital transformations of their underlying infrastructure, dealing with problems of legacy technology rather than thinking far into the future. As a result, vendors are still largely supporting traditional deployment methods. While some vendors have built cloud-native applications, most applications are simply being deployed on premise.

Table 3: Most Solutions Support On-Premise and ASP Deployment Options

	ON-PREMISE	ASP	PRIVATE CLOUD	SAAS
zenmonics	✓	✓	●	●
[VENDOR]	✓	✓	✓	●
[VENDOR]	✓	✓	●	✗
[VENDOR]	✗	✓	✗	✗
[VENDOR]	✓	✓	✓	✓
[VENDOR]	✓	✓	●	✗

	ON-PREMISE	ASP	PRIVATE CLOUD	SAAS
[VENDOR]	✔	✔	●	●
[VENDOR]	✔	✔	●	✘
[VENDOR]	✔	✔	✔	✔
[VENDOR]	✔	✔	✔	●
[VENDOR]	✔	✔	●	✔
[VENDOR]	✔	✔	●	✘
[VENDOR]	✔	✔	✔	✘
[VENDOR]	✔	✔	✔	✔
[VENDOR]	✘	✘	✘	✔
[VENDOR]	✔	✔	✔	✔

Source: Vendor RFIs
Key: ✔=Supported and live; ●=Supported but not live clients; ✘=Does not support

Slowly and over time, Celent expects solutions to become more cloud-based. Institutions by and large are still reticent about moving significant parts of their IT infrastructure into the cloud. Many are still considering only the cost/benefit of hosting their infrastructure. In many ways this has held back the vendor market — there are fewer cloud deployments and the demand has been low for cloud support — but in the future a cloud-based IT architecture will likely be a crucial differentiator in the market.

Table 4 compares each CXP's cloud support, in terms of both the private cloud providers supported and support, if any, for a virtualized environment.

Table 4: Cloud Support Varies Considerably Across CSPs

	PRIVATE CLOUD PROVIDERS SUPPORTED	SUPPORT FOR A VIRTUALIZED ENVIRONMENT
zenmonics *agility in banking*	✔	✔ (virtual machine infrastructure)
[VENDOR]	Amazon AWS, IBM Bluemix, Microsoft Azure	Not applicable yet (SaaS provided by partner)
[VENDOR]	✔	✔ (not multi-tenant)
[VENDOR]	✘	✘
[VENDOR]	Microsoft Oracle cloud, Verizon cloud, Huawei, AWS, and other	✔

	PRIVATE CLOUD PROVIDERS SUPPORTED	SUPPORT FOR A VIRTUALIZED ENVIRONMENT
[VENDOR]	✔ AWS. Azure	Not yet supported (in progress)
[VENDOR]	✔	✔ (virtual machine infrastructure)
[VENDOR]	✘	✘
[VENDOR]	✔ AWS	✔
[VENDOR]	Pivotal, IBM Bluemix, Azure and AWS	✔ (Cloudfoundry and Red Hat Openshift)
[VENDOR]	Microsoft ✔ AWS and Rackspace (⬤)	✔
[VENDOR]	✔	✔
[VENDOR]	AWS, Azure, TivIT	✔
[VENDOR]	✔	✔
[VENDOR]	✔	✔
[VENDOR]	AWS, Azure	Yes

Source: Vendor RFIs
Key: ✔=Supported and live; ⬤=Supported but not live clients; ✘=Does not support

Points of Customer Interaction Supported

Vendors generally have broad support for channels, although the nature of support can depend on the vendor. Some platforms come equipped with modular capabilities running under a single platform with unified channel support. Other vendors bring a suite of preintegrated channel solutions which may be sold as stand-alone products but are often bundled together as part of a larger omnichannel CXP — a practical, but less optimal approach. While they may achieve the same goal, it's important to note the potential implications. Some vendors with tightly coupled channel packages may not readily support integration into many other third party products — or such integration might be expensive. In some of those cases, financial institutions would need to be a full shop client. In the case of broad solution suites there may be differing levels of integration which require extra work to achieve the desired use case. This appears particularly acute for teller system and ATM integration where a broad transaction set is desired.

Every vendor in this report supports online and mobile. This is a reasonable outcome, as digital is fundamental to most omnichannel use cases. Digital is also many banks' highest channel priority, and therefore more likely to be refreshed. Surprisingly, there was a significant amount of support for branch teller and ATM/ Kiosk assisted self-service. Traditionally, these have been very different software environments with specific vendors well acquainted with the specialized transaction and device support needed in those environments. Vendors have broadened channel support with the growth of omnichannel use cases (Table 5).

Table 5: Channels Enabled Across the CXPs

	MOBILE & ONLINE	WEAR-ABLES	CONTACT CENTER	BRANCH TELLER	BRANCH PLATFORM	ATM/ KIOSK
zenmonics	✔	✔	✔	✔	✔	✔
[VENDOR]	✔	✔	✔	✔	✔	✔
[VENDOR]	✔	●	✔	✔	✔	✔
[VENDOR]	✔	✔	✔	✔	✔	✔
[VENDOR]	✔	●	✔	✔	✔	✔
[VENDOR]	✔	✔	✖	✔	✔	✖
[VENDOR]	✔	●	●	●	●	●
[VENDOR]	✔	✔	✖	✖	✖	✖
[VENDOR]	✔	●	✖	✖	✔	✔
[VENDOR]	✔	●	✔	✔	✔	✔
[VENDOR]	✔	✔	✖	●	✖	✔
[VENDOR]	✔	✖	●	✔	✔	✖
[VENDOR]	✔	✖	✖	✖	✔	✔
[VENDOR]	✔	✖	✔	✔	✔	●
[VENDOR]	✔	✖	✔	✔	✔	✖
[VENDOR]	✔	✖	✖	✔	✔	✖

Source: Vendor RFIs
Key: . ✔=Built and live; ●=Built but not live clients; ✖=Does not support

It's worth noting here that the integration and interaction within each channel is varied. For instance, support for ATM/kiosk would rarely mean that the omnichannel CXP vendor is running the ATM, but rather integrating with the legacy software. Branch teller is more varied, with some vendors supporting legacy teller automation application while others support via integration into existing platforms.

Use Cases
In Figure 11 Celent introduces the primary use cases we associate with omnichannel CX. Supporting a use case isn't just about checking a functional box. Many vendors offer products within each of the categories below, but few allow for the kind of persistence required to create omnichannel workflows. Said another way, support for specific use cases requires extensive expertise and capabilities "under the hood." Banks interested in specific use cases should explore vendor capabilities in detail. Chances are out-of-the-box capabilities will provide a head-start, but not completely achieve desired outcomes.

Sales & Marketing
- Support campaign management
- Integrated sales enablement
- Enhanced CRM features

Channel Support
- Channel support across both customer and bank devices
- Interaction including voice banking, chat, social media, etc.

Customer and Account Servicing
- Enterprise account and customer servicing under the same platform
- Customers can initiate service requests from their own device

Onboarding
- Customer acquisition capabilities integrated under a single code base
- Information shared across channels with persistence across access points

Employee Productivity
- Case management support and instant case creation
- Automation tools to assist such as RPA, STP, etc.

Source: Celent

Celent takes a high-level view of five use case categories to provide a generalized market overview. Each of the use categories below could easily be its own vendor spectrum report if treated in depth. For a more detailed view of the use cases listed below, please see individual Vendor Profiles in Appendix II.

- **Marketing**: How does the solution support marketing campaigns? Some solutions supported marketing as a module or series of parameterized features which could handle campaigns or segmented banner ads. More advanced solutions included deeper relationship-based marketing efforts, integrated campaign analytics, or contextual targeting. Other more advanced marketing capabilities include social media integration or social media listening platforms.

- **Sales**: Does the solution also include a sales enablement platform? There are omnichannel CXPs built with this use case in mind, while most provide companion solutions with deeper functionality. There are a number of important sales enablement features like the ability to support needs assessment, relation-ship based pricing, next best offer/product, and customer profitability/ loyalty analytics. Omnichannel CXP should provide a complete 360-degree view of the customer supported by a functional CRM platform and the ability to capture contextual data related to interactions or event history.

- **Origination**: How does the platform support customer acquisition, account opening, onboarding, and originations? This is a classic omnichannel use case, and while most vendors support it directly, every vendor has at least third party support. With an onboarding use case, the platforms with full support are those that offer integrated experiences which persist across all channels and access points, including branch. Some of the solutions have integrated sales, servicing, and acquisition platforms which are better able to connect those experiences.

- **Service**: Does the platform support omnichannel customer and account servicing? Can customers initiate a request which can then be tracked and routed contextually across channels? Case management capabilities that store and track the status of customer inquiries from end-to-end are more desirable. Many platforms closely integrate sales enablement with case management,

allowing bank representations to create, maintain, and manage opportunities. Servicing is often grouped with employee productivity tools such as RPA.

- **Transaction**: The most straightforward use case. Do solutions allow customers to transact through the platform? Every solution except for those which target a specific use case, such as sales enablement, includes these capabilities.

Applying Celent's definition of use cases to the vendors in Table 6, it's clear that use case support is fairly broad. But as with many things, the devil is in the details. Appendix III provides more detail. Banks seeking to support specific use cases clearly need to examine platform capabilities in greater detail than this report can accommodate.

Table 6: Use Cases Supported Across the CXPs

	MARKETING	SALES	ORIGINATION	SERVICE	TRANSACTION
zenmonics	4	3	4	4	4
[VENDOR]	4	1	4	4	4
[VENDOR]	4	4	1	3	4
[VENDOR]	3	3	2	4	4
[VENDOR]	3	4	4	4	4
[VENDOR]	4	2	4	3	4
[VENDOR]	4	3	4	3	4
[VENDOR]	4	3	2	2	4
[VENDOR]	3	2	4	3	4
[VENDOR]	4	3	2	4	4
[VENDOR]	1	2	0	1	4
[VENDOR]	3	2	4	2	4
[VENDOR]	2	1	4	2	4
[VENDOR]	4	4	4	3	4
[VENDOR]	4	4	3	3	0
[VENDOR]	2	2	3	3	4

Source: Vendor RFIs: 4 =full support; 2 =partial support or 3rd parties; 1 =limited support 0 = No support

While out of the box support for use cases can help an institution deal with some of the more common industry needs, there are plenty of situations in which extension and customization are paramount. How easily does a solution allow the financial institution to make changes? Can a business user configure the platform? Table 7 compares CXPs.

Table 7: CXP Customization Capabilities Along Three Dimensions

	SDK SUPPORTED	WORKFLOW TOOLS AVAILABLE	CONFIGURATION BY BUSINESS USERS
zenmonics	✓	✓	✓
[VENDOR]	✓	✓	✓
[VENDOR]	✓	✓	✓
[VENDOR]	✓	✗	✓
[VENDOR]	✓	✓	✗
[VENDOR]	✓	✗	✓
[VENDOR]	✗	✓	✓
[VENDOR]	✓	✗	✗
[VENDOR]	✓	✓	✓
[VENDOR]	✓	✓	✗
[VENDOR]	✓	✓	✓
[VENDOR]	✗	✓	✓
[VENDOR]	✓	✓	✓
[VENDOR]	✓	✓	✓
[VENDOR]	✗	✗	✓
[VENDOR]	✓	✓	✗

Source: Vendors

Lines of Business Supported

As shown in Table 8, every vendor starts with support for retail banking and SMEs. This makes sense given where the demand for omnichannel customer experience has been over the last few years. As you start to get into corporate, wealth / private banking, and retail brokerage, there's a significant drop in the solutions that support these lines of business. Given the distinct P&Ls and procurement between each, it's not surprising to see retail and SME as the starting point.

It's worth noting here that many of the vendors listed below provide functional support to other lines of business through separate products. A single platform covering both retai l/ business banking and corporate banking is still rare, and even fewer institutions are actually implementing them. This is an emerging area within omnichannel platforms, and Celent expects an increased convergence going forward.

Table 8: LoB Support: The Need for Ongoing Development Effort Is Apparent

	RETAIL DDA	SME	CORPORATE	WEALTH/ PRIVATE BANKING	RETAIL BROKERAGE
zenmonics	✔	✔	✘	●	✘
[VENDOR]	✔	✔	✘	✔	✘
[VENDOR]	✔	✔	✔	✔	✘
[VENDOR]	✔	✔	✔	✘	✘
[VENDOR]	✔	✔	✔	✔	✘
[VENDOR]	✔	●	✔	●	✔
[VENDOR]	✔	✔	✘	✘	✘
[VENDOR]	✔	✔	●	●	●
[VENDOR]	✔	✔	✔	✘	✘
[VENDOR]	✔	✔	✔	✔	✔
[VENDOR]	✔	✔	●	✘	✘
[VENDOR]	✔	✔	✔	✘	✘
[VENDOR]	✔	✔	✔	✔	✘
[VENDOR]	✔	✔	✔	✔	✔
[VENDOR]	✔	✔	✘	✘	✘
[VENDOR]	✔	✔	✘	✘	✘

Source: Vendor RFIs
Key: ✔=Supported and live; ●=Supported but not live clients; ✘=Does not support

SELECTION CONSIDERATIONS

Key Research Question

3

What are the considerations in making a vendor selection?

The omnichannel CXP space is broadly defined. Banks looking to implement an OCXP solution should have a well-defined strategic objective to which a product should align.

Each institution needs to determine how to best architect for omnichannel retail delivery. Given widely varying constraints and considerations, Celent is in no position to prescribe a path forward that works for every institution. What we do confidently assert, however, is that defining this architecture is not optional and needs to be pursued with some urgency. In this regard, vendors are well ahead of most banks. While no vendor or bank Celent has interacted with asserts to be entirely finished with development, banks have a bevy of viable options among the vendors included in this report.

Recommendations:

- **Develop an omnichannel architecture strategy <u>today</u>**: Omnichannel represents a confluence of previously siloed channels and technologies. This makes the decisions much harder, as seemingly every vendor is branding its solution as "omnichannel." A clear understanding of the concept of omnichannel and the proposed end goal of the institution will be crucial to cut through the noise.

- **Don't let high-priority use cases blind you**. Omnichannel customer acquisition, for example, is a practical necessity today and a rightful high priority. But, it is also but a single omnichannel use case. Too many banks have omnichannel myopia and neglect mid-term benefits for short-term expediency.

- **Don't try to boil the ocean**: Banks are conservative institutions with deep-seated dependencies on archaic technology. The umbrella of omnichannel captures many LoBs and existing systems. The path to enterprise omnichannel delivery will be necessarily long for most banks. Start small. Begin now. Plan for the long term.

- **Leverage consulting services**: Many of the vendors in this report have consultants specialized in either technical or strategic services. They're bringing skills that banks may lack internally.

Was this report useful to you? Please send any comments, questions, or suggestions for upcoming research topics to <u>info@celent.com</u>.

VENDOR PROFILES

ZENMONICS

Charlotte, N.C.-based Zenmonics is a provider of omnichannel software that supports all channels on a single platform. Zenmonics' channelUNITED® platform is a leading open standard, omnichannel platform that can be deployed with any core system and spans all self-service and assisted channels to enable complete digital transformation. Zenmonics is committed to transforming the financial industry to ensure financial institutions stay continuously engaged with their customers.

Table 9: Zenmonics Snapshot

Company Information	
Year Founded	2007
HQ Location	Charlotte, NC
Number of employees	260
Total Banking Revenue (USD)	Approximately US$25 million
Product Information (through November 2017)	
Products (version)	channelUNITED v. 8.1
Architecture	Java, n-tier
Installed Base	In production at 5 US banks
Notable Clients	undisclosed

Source: Zenmonics Inc.

Definition of Omnichannel

"We define omnichannel as the ability to provide 'continuous engagement' between the banker and the customer across every interaction. This spans all self-service and assisted end points so that every time the customer interacts with the bank, there is a single, known customer story. In essence, the customer feels they are dealing with one bank, one channel."

Products

The channelUNITED platform is a service-oriented architecture (SOA) that separates the user interface (glass) from the Connect Digital API, which contains the business logic, transaction management, service call orchestration, and persistence needed for an omnichannel platform. There are three primary components to channelUNITED to provide continuous engagement and optimal user experience.

1. **Glass (UI layer).** Features and functions are built as microservices that allow a feature like funds transfer to be built once and then used in the Consumer or Banker applications. This allows the UI to have a common look-and-feel across channels where data, transactions, and functions are common between the Banker and Consumer to personalize the engagement and reduce friction.

2. **Channel intelligent Digital API.** All channels utilize the same digital API and persistence layer. This provides the "special sauce" that allows each channel to be aware of the customer's or banker's activities, transactions, and processes. Activity can start in one channel and finish in another because the digital API contains a persistence layer to maintain transaction state. In addition, all the Digital API services are channel-intelligent, so the UI fields, data, and logic can be configured by channel.

3. **Orchestration.** The Digital API also provides orchestration by channel, allowing screen flow to be dictated by channel. This allows a single microservice module like funds transfer to be reused between consumer and banker applications.

ChannelUNITED architecture is outlined in Figure 12.

Figure 12: ChannelUNITED
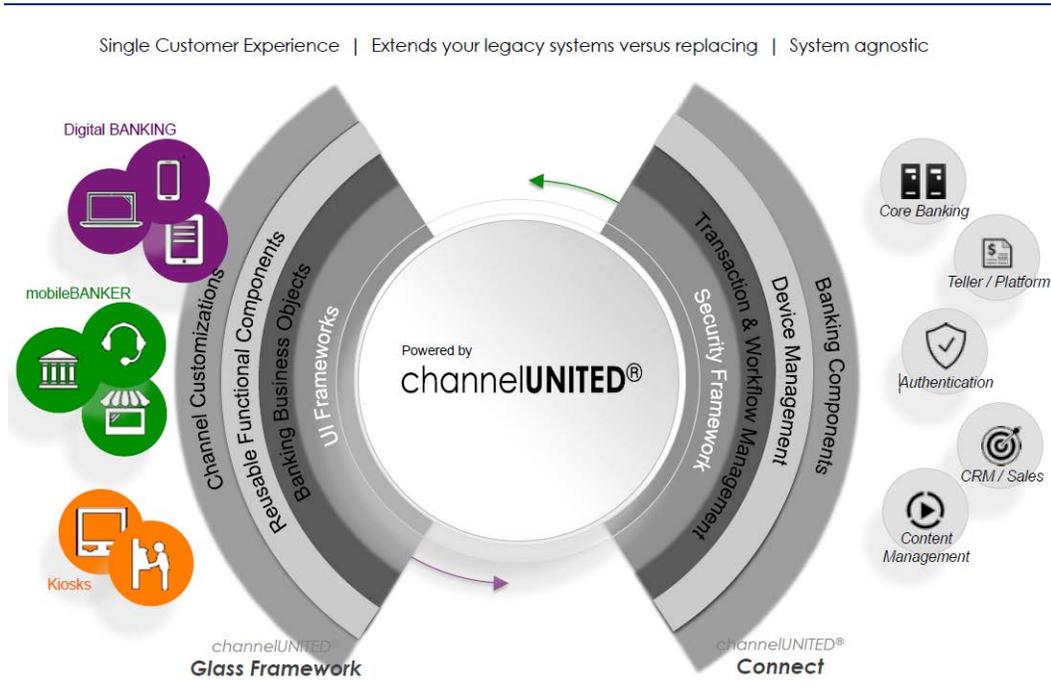
Source: Zenmonics, Inc.

Client Base
Zenmonics is focused entirely on the US market, with clients spanning midsize and large institutions (Figure 13). Among its clients are two top 25 US banks.

Zenmonics client base by region

Zenmonics client base by asset tier

NA
100%

Asset Tier	Percentage
<$1 Bn	0%
$1-20 Bn	25%
>$20 Bn	75%
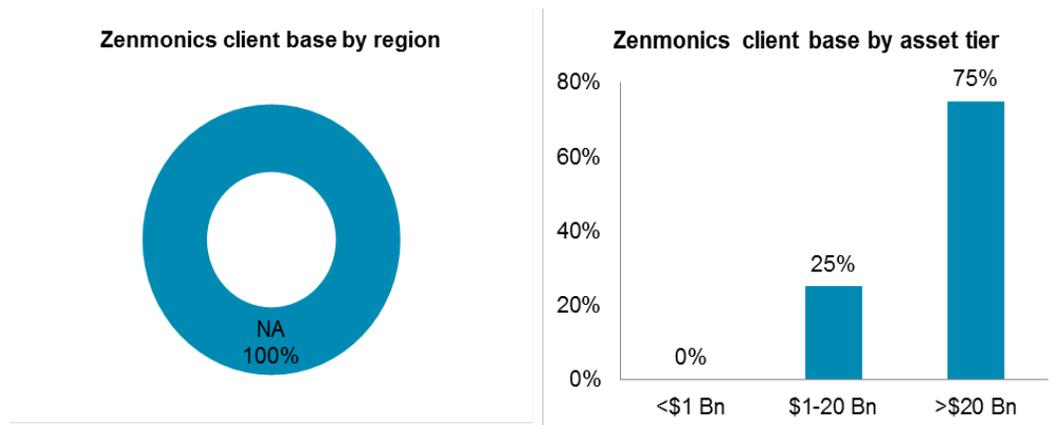
Source: Zenmonics

Assessment

Unlike some solutions, channelUNITED was built from the ground up as an omnichannel CX platform. As such, Celent notes its above-average support across points of customer interaction and use cases. channelUNITED provides fully featured, ready-for-production applications for consumer digital (online and mobile), enterprise sales and service (branch and contact center), account origination (customer- and bank-facing), teller, and contact center (CTI integration). The Connect layer contains over 350 RESTful services that support the applications and allow the applications to share data, transactions and processes efficiently.

Table 10: Zenmonics ChannelUNITED Assessment

Noteworthy	Opportunities
• Mobile-first, adaptive design • Broad channel support, including teller, kiosk, ATM, mobile and tablet • Spans self-service and assisted-service channels, with branch kiosk support • Open, Digital Banking API, with over 350+ channel-intelligent services that enable real-time continuous engagement across sales, servicing, origination, financial (teller) transactions across all channels. • Supports all implementation options: on premise, ASP, cloud and SaaS	• Corporate banking not supported in current release • Retail brokerage not supported in current release • Small client base may give some banks pause

Source: Celent

APPENDIX I: METHODOLOGY

Celent approached 21 vendors to participate in this report. Among them, Celent included 15 vendors and 16 different solutions in this report based on vendor's willingness to respond to a detailed RFI, provide client references and participate in telephone interviews and guided demonstrations.

This is the second report in a series examining omnichannel. For a more thorough introduction to the topic, please see the report: _Delivering an Omnichannel Customer Experience: Why a Single Platform Is the Way Forward_.

A few considerations:

- For this report, Celent decided to release a spectrum rather than an ABCD comparative analysis. The diversity of the systems landscape made an apples to apples comparison virtually impossible. It would have been unfair to the vendors and the readers of this report to try to prescribe rigorously and consistently applied judgment on system strength. It's worth noting that the fit of a platform will depend heavily on the financial institution buying it. A platform bad for one bank could be perfect for another.
- This report specifically assesses marketed stand-alone vendor platforms. There are omnichannel vendors in the market focused on services to create bespoke solutions. Some offer packaged frameworks or default "model bank" configurations. These providers leverage internal IP and may engage an institution on a variety of IT services, but aren't selling stand-alone products. Those vendors such as Cap Gemini and IBM are not included in this analysis.
- Vendors do not have to be subscribers to Celent's research or have a pre-existing relationship with Celent to participate in the research. Relationship status also has no bearing on inclusion or Celent's assessment.

About the Vendor Profiles

Each profile in Appendix III offers a snapshot of the vendor and an overview of its CXP. We developed the list of vendors based on our knowledge of the market and from our interactions with banks and vendors. We built each profile in two phases:

- Phase 1: After the vendor responded to the RFI, Celent analyzed responses, asked questions about the submitted material, participated in a guided product demo, and contacted reference clients to cross-check vendor claims as well as obtain a "boots on the ground" view of the product.
- Phase 2: We shared with vendors their draft profiles for fact-checking and approval. Celent only makes changes to factual errors during transcription; subjective disputes are not considered.

LEVERAGING CELENT'S EXPERTISE

If you found this report valuable, you might consider engaging with Celent for custom analysis and research. Our collective experience and the knowledge we gained while working on this report can help you streamline the creation, refinement, or execution of your strategies.

SUPPORT FOR FINANCIAL INSTITUTIONS

Typical projects we support related to delivery channel technology include:

Vendor short listing and selection. We perform discovery specific to you and your business to better understand your unique needs. We then create and administer a custom RFI to selected vendors to assist you in making rapid and accurate vendor choices.

Business practice evaluations. First, we understand and evaluate your business processes. Based on our knowledge of the market, we identify potential process or technology constraints and provide clear insights that will help you implement industry best practices.

IT and business strategy creation. We collect perspectives from your executive team, your front line business and IT staff, and your customers. We then analyze your current position, institutional capabilities, and technology against your goals. If necessary, we help you reformulate your technology and business plans to address short-term and long-term needs.

SUPPORT FOR VENDORS

We provide services that help you refine your product and service offerings. Examples include:

Product and service strategy evaluation. We help you assess your market position in terms of functionality, technology, and services. Our strategy workshops will help you target the right customers and map your offerings to their needs.

Market messaging and collateral review. Based on our extensive experience with your potential clients, we assess your marketing and sales materials — including your website and any collateral.

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Omnichannel Customer Acquisition 2.0: What it is and How to Get There
July, 2016

Getting to Digital: Assessing Banks' Progress
May 2016

Retail Banking Channel Systems In North America: The Quest for Omnichannel Continues
January 2015

Defining a Digital Financial Institution: What "Digital" Means in Banking
December 2014

Emerging Technologies in Retail Banking: The Long Road to Customer Centricity
August 2012

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