

CELENT



CASE STUDY

BMO: MODERNIZING PAYMENTS IN RECORD TIME

WINNER OF CELENT MODEL BANK 2019 AWARD FOR
PAYMENT SERVICES HUB IMPLEMENTATION

Gareth Lodge
glodge@celent.com
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CASE STUDY AT A GLANCE

FINANCIAL INSTITUTION	BMO
INITIATIVE	Payment Hub Project: Modernizing Payments in Record Time
SYNOPSIS	With many pending changes in the North American payments landscape, BMO chose to modernize their payment systems to implement a more agile and efficient way to the evolving demands of their customers and create a platform for future innovation.
TIMELINES	<ul style="list-style-type: none"> December 2017 — contract signed with ACI Worldwide September 2018 — BMO Payment Hub implemented and first new product went live Mid-2019 — two additional products to be launched
KEY BENEFITS	<ul style="list-style-type: none"> BMO is forecasting the Payment Hub will recognize significant savings, based on products slated for delivery over the next five years. This figure includes savings from: <ul style="list-style-type: none"> Modernization of existing legacy technology. Rationalization of technology in both Canada and the US. The reuse of assets in future technology developments.
KEY VENDORS	ACI Worldwide

CELENT PERSPECTIVE

- Payment services hubs have long been established as a key way of modernizing and simplifying payments infrastructure. Many banks, if not all, face the same challenges, not least regulation, growing customer expectations, and cost pressures of maintaining legacy technology. Yet relatively few banks have made the leap, often because the cost and complexity of such a move are perceived as prohibitive.
- Every year the Model Bank Awards attract multiple payment services hub entries. Each and every one of them is transformative for that bank, making it difficult to choose between them. This year, BMO’s project stood out for three key reasons, things that many banks could learn from.
 - First, not only did BMO make the leap described, they did so in a way that ensured early wins and allowed the bank to move in incremental steps. By starting with a minimum viable product approach, they were live on the first module within nine months of contract signing, with the second module being live after only another three months.
 - Second, BMO expects tangible benefits from adopting their Payment Hub — they estimate a material cost avoidance simply from now better implementing things already on their roadmap, before they even consider the other upsides that the hub will bring, such as improved customer experience.
 - Third, operating in both Canada and the US, BMO faces regulatory and market pressures in both countries. Their approach allowed them to support both countries from a single platform, rather than having two separate systems to maintain.

DETAILED DESCRIPTION

Introduction

Established in 1817, BMO Financial Group is a highly diversified financial services provider based in North America. With total assets of \$807 billion and a team of diverse and highly engaged employees, BMO provides a broad range of personal and commercial banking, wealth management, and investment banking products and services to more than 12 million customers. BMO is the eighth largest bank in North America as measured by assets^{1,2}

Table 1: BMO Snapshot

THROUGH 01/31/2019	BMO
YEAR FOUNDED	1817
ASSETS	\$807 billion
GEOGRAPHICAL PRESENCE	Executive offices located in Toronto, Canada. Presence across Canada, US, Europe, and Asia.
EMPLOYEES	45,882
OTHER KEY METRICS	<p>Serves customers through three operating groups: Personal and Commercial Banking, Wealth Management, and BMO Capital Markets.</p> <p>BMO is the fourth largest bank in Canada by market capitalization and asset size. It has a top-tier commercial banking business, as evidenced by BMO’s number two ranking in Canadian market share for business loans up to \$25 million.</p> <p>Across Canada, BMO has over 900 branches and 3,300 automated banking machines.</p> <p>In the US, BMO serves more than 2 million retail and small and midsize business banking customers. It operates under the BMO Harris brand with over 560 branches and nationwide access to more than 43,000.</p>
RELEVANT TECHNOLOGIES AND VENDORS	ACI WORLDWIDE

Source: BMO
 1 As at January 31, 2019
 2 Source: Bloomberg

The changing customer demands create the need for banks to become ever more digital, which is driving the imperative to modernize their payment systems. BMO has chosen to embrace this need for change and established a target state architecture and a back end operation to support the move for greater agility, speed, and flexibility. This project is a key component of this, to position them for future success.

Opportunity

Modernizing payments is now accepted as being something that banks ought to do, yet for some the catalyst to actually do so is often less clear. For BMO, there were a number of clear industry and strategic imperatives that drove their decision to make changes to their central infrastructure, and to invest in their Payment Hub.

One of the greatest imperatives was to be compliant with Canada's ambitious vision for the payments industry. Driven by Payments Canada, Bank of Canada, and the Department of Finance, this vision includes replacing the country's high value and batch payment systems. Furthermore, Payments Canada plans to add a brand new real-time payment system that is compliant with the global ISO 20022 payment standard. BMO also operates in the US, and similar initiatives are underway, with the real-time solution from The Clearing House using ISO 20022, and a commitment from the Federal Reserve to move to it for Wires and batch payments as well.

The Canadian Government also has a desire to broaden access to new market participants — international banks, fintechs, emerging payment processors — and simplify the flow of cross-border payments. BMO felt that if they chose the right architecture, these entrants could actually be seen as opportunities rather than threats.

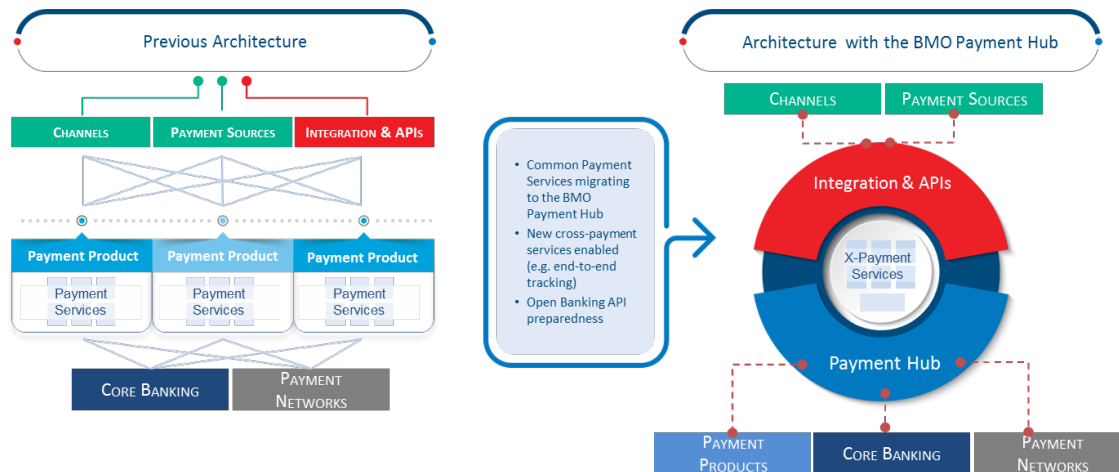
In addition to these domestic changes on the horizon, there were other changes that, while not technically mandated, were things that BMO considered as non-optional, given that their peers would be doing them. These included emerging payment solutions launching worldwide.

Finally, there was a realization that improving the client experience would also be possible and highly desirable. A modernized payments architecture would allow BMO to deliver new products — from client need to solution — with greater agility, and to better respond to evolving customer requirements, especially as payments evolve.

The bank recognized that the existing legacy systems were not equipped to meet these requirements, and would require significant investment in each individual rail, as well as a number of connected infrastructures, such as direct deposit accounts (DDA), anti-money laundering (AML), fraud, and other systems. The bank therefore concluded that investing in a modernized payments infrastructure would not only help meet the regulatory changes, but also ultimately allow for simpler, more secure, data-rich payment options that would improve the client experience. They also realized that it could be possible to support these for both Canada and the US on a single platform.

They concluded that a Payments Hub would allow BMO to meet changing infrastructure requirements and expectations across key North American markets, resulting in greater client acquisition, engagement, and retention. It would also allow over time for BMO to apply consistent and advanced risk management solutions (fraud, AML, auto-repair) to every payment product to minimize the need for manual interventions and improve straight-through processing. This initiative would enable those businesses making or receiving payments to benefit from meaningful data that could now accompany transactions, and their improved ability to prevent fraud.

Figure 1: BMO Payment Hub Changes in Architecture



Source: BMO

Solution

BMO started by creating its evaluation criteria:

- Enabling a target state for payments (a platform that would manage all payments).
- Fit to the bank’s reference architecture.
- Balance between existing capabilities and best of breed.

The latter for Celent is a key element. Some banks perceive that a hub has to replace existing payment engines. BMO recognized that it had good payment engines already. They therefore chose to find a solution that could centralize and orchestrate the transactions across their lifecycle, while utilizing their existing payment engines.

BMO undertook an extensive RFP and evaluation process, looking at a wide range of approaches. BMO chose ACI’s Enterprise Payments Platform to act as a single, universal platform for corporate and retail, high and low-value, domestic and international payments to simplify the architecture of a complex payment ecosystem.

BMO assigned a dedicated executive lead, Doug Wilson, CIO, North American Treasury & Payment Solutions, and a team of 15 payments and technology subject matter experts to collaborate with the ACI team on the delivery of the hub. This team was accountable to BMO’s Payments Modernization program led by Derek Vernon, Vice-President and Head, Payments Modernization, who has enterprise responsibility for modernizing both Commercial and Retail payments across North America.

Over time, BMO Payment Hub will orchestrate the majority of retail and commercial payments with corresponding data, and the hub’s capabilities will remain in line with the needs of all business lines and customer segments. To reinforce this, the project has a number of senior executives sponsoring the implementation of the payment hub, including:

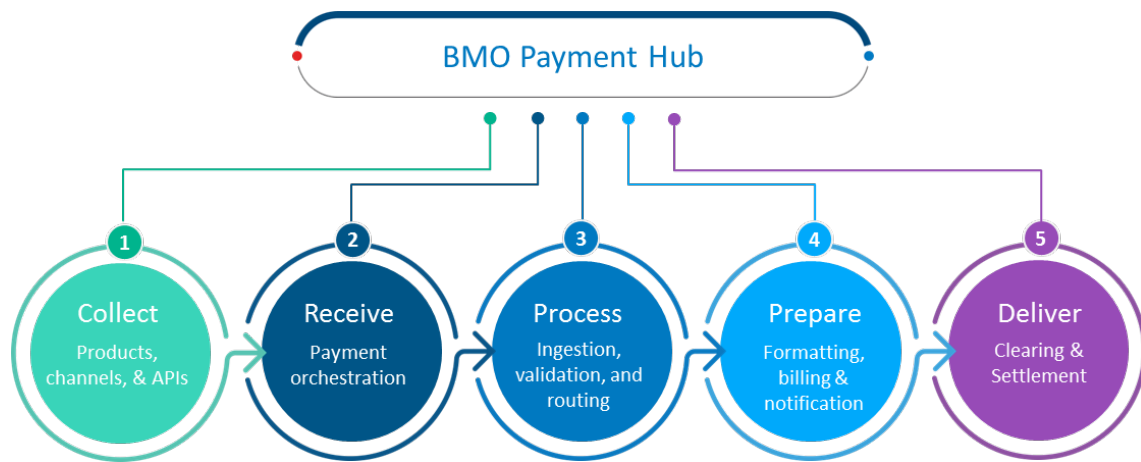
- Sharon Haward-Laird, Head, North American Treasury & Payment Solutions.
- Jennifer Hawkins, Head, North American Retail Payments.
- Steve Tennyson, Chief Technology & Operations Officer.

The first release delivered a “minimum viable product” (MVP). This approach is one Celent has often promoted, and it has at least two advantages. First, the MVP approach allows the bank to demonstrate early wins. In this instance, BMO enabled an enhanced foreign exchange wire capability and connectivity with its commercial digital platform which simplified the digital payment experience for all commercial customers of the bank. Celent has seen other banks that try to plan and build every single requirement, for every product, up front. Given the complexity and costs involved, this can work but does require a clear view and understanding of what is required, and strong stakeholder management. The MVP approach validated the use of the payment hub through an end-to-end digital client experience and provided confidence in the speed of future launches. Supported by Payments Technology and operated by Payment Operations, the hub reaffirmed the ongoing commitment to build out.

The second advantage of this approach is that it allows for a deep-dive, closer look at back end processes in parallel. This has allowed the bank to gain additional speed to market by identifying common functionality that can be reused. It also frames the project as ongoing, organic approach rather than a fixed, rigid solution. BMO is already growing its roadmap of product and proof-of-concept launches for 2019 and beyond, accelerating the delivery of modernized solutions through the BMO Payment Hub to enable real-time payments, integrated value-add services, and an end-to-end ISO 20022 payments data flow.

BMO’s Payment Hub went live with its first product orchestration (Canadian payment flow) in just nine months — from contract signature in December 2017 to full implementation on September 9, 2018. The second phase to deploy an additional payment rail for US commercial customers is on track and expected to launch in the middle of this year.

Figure 2: BMO Payment Hub Solution Overview



Source: BMO

Results, Lessons Learned, and Future Plans

BMO is confident that the short and long-term benefits of this initiative significantly outweigh the upfront costs. Although still in the early days of the project, BMO predicts there will be “cost per payment” savings on future implementations and increased productivity generated through greater efficiency and leaner implementations. These savings are significant and will include:

- Reduced costs for delivery of SWIFT mandatory release, which included elements for GPI.
- Reduced implementation costs to connect to real-time payment rails (in both Canada and the US) resulting from reduced integrations required for multiple internal systems and external networks.
- Reduced development costs to adopt ISO 20022 enriched data formats, which will only need to be applied once instead of making changes in at least seven other major systems.

- Reduced integration costs through the reduction of multiple liquidity management systems.
- The capacity to react quickly to a changing regulatory environment (such as Payments Canada's modernization mandate) without significant capital investments will allow more time to focus on customer needs and deliver innovative products. For example, the payment hub architecture with an agile delivery approach has enabled BMO to not only deliver the base payment hub into production in just nine months, but has also paved the way for the delivery of other releases in only a few months post-launch

BMO believes that its Payments Hub project unlocks strategic value for the bank and its customers, creating the opportunity to accelerate new products to market and offer a consistent experience for customers. There is more confidence in being able to drive solutions to market more quickly that will ultimately help strengthen loyalty, ensuring a strong competitive position in the marketplace with an ability to create new revenue-generating business models.

Challenges

One of the biggest challenges BMO had to overcome was delivery components that did not meet all the business requirements “out-of-the-box.” The project teams came together to determine a “go-forward” plan to ensure overall project timelines and customer expectations could be met for an aggressive go-live schedule, and a “fail fast” approach was deployed with excellent collaboration across both teams.

From a technology perspective, ACI's Enterprise Payments Platform allowed for quick modifications to accommodate changing business needs, ensuring minimal disruption to the overall project timeline. It also supported efficient end-point design to deliver required connections faster, which in turn supported the objective for self-sufficiency by BMO and a more agile project approach. Being able to change quickly keeps BMO at the forefront of innovation and responsive to customer needs.

Whilst the framework allowed for quick modifications, this project involved the development and introduction of foundational components into the ACI solution. It required several custom end points to be developed and tested that connected various BMO back end systems. Everything had to be planned and delivered in incremental components in order to test and quickly fix as necessary and keep the project moving forward with pace.

Another challenge stemmed from BMO having operations in both the US and Canada. There were several payment platforms domiciled in both Canada and the US — some legacy, some modern. The payments hub architecture addressed this issue by being able to connect to different product systems across both countries, minimizing the need for additional projects that would have previously added cost, complexity, and time.

On the ACI side, the core project team consisted of eight experienced resources from implementation services (IS) and included experts in product management, business analysis, customer service implementation, technical consultancy, and solution architecture. The team included a leading product specialist, who acted as business and product advisor to BMO from product development to design, code, and solution testing. The ACI delivery team followed an integration partner approach with their product development team to ensure definition, build, and testing went smoothly. This team worked closely with ACI executives to ensure timely delivery and assist with any resource or escalation requirements.

Lessons Learned, and Future Plans

This unique combination of experts ensured BMO and ACI addressed all installation or configuration issues, with the development skills on hand to enable on-site coding changes. This allowed the team to be flexible and resolve problems quickly — a critical component of any modernization initiative. Celent advises all its clients that every payment services hub is

different, but there are obviously common elements. As a result, there are many things that a bank contemplating a hub should take from this case study, with three in particular standing out.

First, a clear view of the target state helps tremendously. It doesn't have to have every last detail described, but it should be sufficient that the vision is clear to all. Second, an implementation that has early wins. Payments hub implementations can be complex and lengthy if you try to do everything; ensuring all see value as early as possible will significantly contribute to the success of a project. Finally, understanding that, as change in payments continues, no hub should be implemented and left, but instead will continue to evolve.

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

Gareth Lodge

glodge@celent.com

AMERICAS

USA

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

Tel.: +1.617.262.3120
Fax: +1.617.262.3121

USA

1166 Avenue of the Americas
New York, NY 10036

Tel.: +1.212.541.8100
Fax: +1.212.541.8957

USA

Four Embarcadero Center, Suite 1100
San Francisco, CA 94111

Tel.: +1.415.743.7900
Fax: +1.415.743.7950

Brazil

Rua Arquiteto Olavo Redig
de Campos, 105
Edifício EZ Tower – Torre B –
26° Andar
São Paulo SP 04711-904

Tel.: +55 11 3878 2000

EUROPE

France

1 Rue Euler
Paris
75008

Tel.: +33.1.45.02.30.00
Fax: +33.1.45.02.30.01

United Kingdom

55 Baker Street
London W1U 8EW

Tel.: +44.20.7333.8333
Fax: +44.20.7333.8334

Italy

Galleria San Babila 4B
Milan 20122

Tel.: +39.02.305.771
Fax: +39.02.303.040.44

Switzerland

Tessinerplatz 5
Zurich 8027

Tel.: +41.44.5533.333

ASIA

Japan

The Imperial Hotel Tower, 13th Floor
1-1-1 Uchisaiwai-cho
Chiyoda-ku, Tokyo 100-0011

Tel: +81.3.3500.3023
Fax: +81.3.3500.3059

Hong Kong

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

Tel.: +852 2301 7500