

Small-to-Medium Business Accounting Software APIs Initiative



**Business Payments Coalition
Vendor Forum**

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Business Payments Coalition

SMB Accounting Software APIs Initiative

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Introduction

The small-to-medium business (SMB) Accounting Software APIs (Application Program Interfaces) initiative is a project of the Business Payments Coalition's (BPC) Vendor Forum.

The BPC recognizes that adoption of electronic payments is challenging for many small businesses, especially the "long tail" of very small and micro businesses. It is easier for most small businesses to send and receive checks than electronic payments. The Vendor Forum initiated this "building block" effort to determine what automated tools are currently available to make it easy for small businesses to send and receive electronic payments. The focus was on APIs, which have become a prevalent means of integrating one piece of software with another, particularly in a cloud context.

The mission of the work group was narrow and targeted:

To create a catalog of APIs and providers to educate small and medium size businesses (SMBs) and SMB service providers about available electronic payment integration options.

The group was tasked to research, compile, and publish a list of APIs that can be used by SMB accounting software packages to automate electronic payment initiation, payment receipt, and cash application to receivables. The second objective was to compile a list of banks and payment providers that integrate specific APIs for payment execution and receipt.

This document presents the work product of the group. The volunteer participants included payment service providers, consultants, financial institutions, software providers, and standards organizations. The Federal Reserve Bank of Minneapolis facilitated the work group.

Throughout this document, the term "payment service provider" (PSP) is used to refer to all providers of payment services, which may be banks, third party service providers, and payment gateways (merchant service providers that authorize electronic payments processing).

Business Payments Coalition

The Business Payments Coalition is a volunteer group of organizations and individuals working together to promote greater adoption of electronic business-to-business (B2B) payments, remittance data, and invoicing. The Coalition's overarching goal is to make B2B electronic payments more efficient across the end-to-end process; that is, to achieve straight-through-processing. The Coalition accomplishes this objective by addressing problems and barriers that make it difficult for businesses to use electronic alternatives to paper checks and remittance advices.



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Background

There are various definitions of SMBs. Gartner defines small businesses as organizations with fewer than 100 employees and less than \$50 million in annual revenue; midsize businesses are organizations with 100 to 999 employees and \$50 million to \$1 billion in annual revenue. Since most “non-enterprise-level” accounting software supports a range of business sizes, it wasn’t necessary to more precisely define “SMB” for purposes of this project.

Many software companies have multiple software packages targeting different business sizes, complexity, and industries. Software may be server-based, on premises, or subscription-based in the cloud (Software as a Service, or SAAS). In addition, there may be numerous versions of software, as customers are on different upgrade cycles and legacy versions must be supported. Overall, the payment functions available typically vary by a software company’s specific package and version.

SMBs generally use accounting applications to manage their business – including functions to manage their accounts payable (AP) and accounts receivable (AR).

AP functions include the ability to create and send payments to vendors and other payees. Most accounting packages have check printing built into the AP module, making setup and initiation of AP check runs easy. In most cases, sending electronic payments (ACH, credit card, or wire) requires integration between the accounting application and a third party provider, such as a financial institution or payment service provider (PSP), to facilitate the origination of the electronic payment. Thus, electronic payment setup is more complicated than checks because it involves setup of (1) the software, (2) electronic payment initiation with a PSP, and (3) additional underwriting and “know your customer” diligence by the bank to enable origination of electronic payments.

On the AR side, software may integrate with a PSP for receiving card and ACH payments. Software may also integrate reporting of receipts from financial institutions and remittance information that would facilitate automated application of payments received.

There are integration tools available to support payments, whether through APIs or other integrations, but SMB owners and accountants may not be aware of them. The accounting software may use an integration to execute the push (disbursements) or pull (receipts). Accounting software typically provides user and system interfaces to enable APIs to gather the payment data needed for PSPs to disburse payments and enable “cash application” of received payments.



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How APIs Interact with Accounting Software

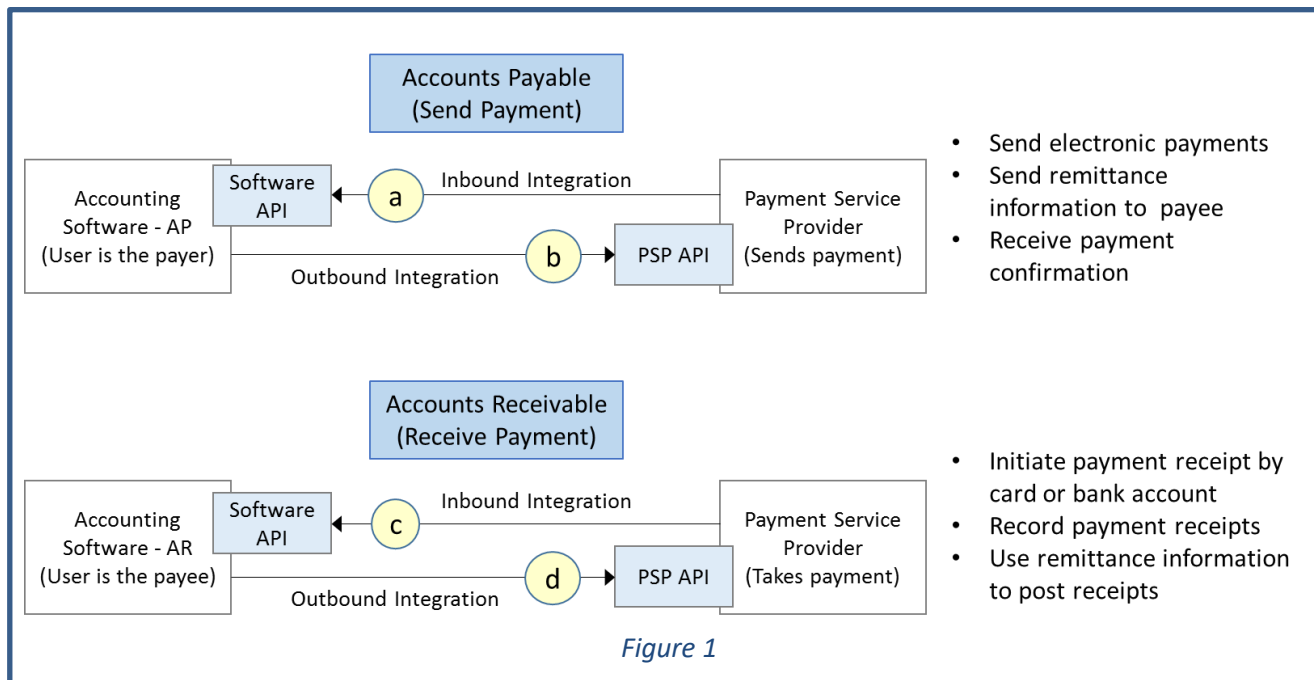
Accounting software uses many methods, including APIs, to send data to and receive data from other sources. Examples include other business systems, file uploads and downloads, and reporting from financial institutions. These methods can be manual or automated.

APIs are generally used to send and receive information from external sources in an automated fashion. They also provide (“expose”) functions which allow a task to be executed. APIs can be used for a variety of purposes and have defined structures and data elements. The author of the API defines the protocols, structure, and data. In general, there are no standards for APIs that serve similar functions. For example, there isn’t a standard API definition that can be used to “send payments to a PSP.”

What is an API?

An API is a shortcut for interfacing with an application. It is a simple way for one application to enable another application to request information from it and receive that information back in a specific manner without having to perform broad integration with that application.

Figure 1 illustrates how APIs can integrate with accounting software for both accounts payable to send payments and accounts receivable to receive payments. Either an accounting software API or a PSP API is used. “Inbound integration” uses an accounting software API for payments. “Outbound integration” uses a PSP API for payments. Using either method results in payment execution by the PSP.





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Accounts Payable

a

Software API inbound integration: A PSP uses an accounting software API to collect scheduled AP disbursements from the software. The payer uses PSP software to release payments and the PSP executes the payment. The PSP may offer a variety of payment types, such as checks, ACH, and cards. The accounting software customer would have a direct relationship with the PSP.

b

PSP API outbound integration: Accounting software uses a PSP API to send disbursement information to the PSP (e.g. bank, ACH connection, payment network) for payment execution. The user interface for sending the payment could be in the accounting software or PSP software. Generally the provider of the user interface that executes the payment would perform identity verification on the customer and handle security and risk. If the accounting software provides the functionality, the software company would have the relationship with the PSP, frequently using a white-labelled solution. If the PSP provides the functionality, the accounting software customer would have a direct relationship with the PSP.

Depending on the sophistication of the API, the PSP API may send payment confirmation back to the software.

APIs may also enable sending remittance information to the payee.

Accounts Receivable

c

Software API inbound integration: A PSP uses an accounting software API to collect scheduled AR receipts from the software. The payer submits a payment instruction or accepts a request for payment and the PSP executes the payment. This may involve the PSP sending invoices, sending card payment information to a gateway for authorization and payment, or performing a debit pull on a bank account.

d

PSP API outbound integration: Accounting software uses a PSP API to send AR receipts to the PSP for payment execution via a merchant gateway account for cards or a debit pull from a bank account. The user interface for sending the payment could be in the accounting software or PSP software. Generally the provider of the interface for the collection of payment information would vet the ownership of the account into which the funds are paid, and assume the risk and responsibility for the collection of information.

APIs may also enable retrieval of information about payments received into bank accounts along with remittance information for posting to AR accounts.

Ideally, APIs can make the payment process easier for the user. With the appropriate APIs, software can make sending and receiving payment information as easy as “touch of a button.”



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What the Group Did... and Didn't Do

The group undertook a systematic process for the work.

- Mapped AR and AP processes to identify where payments intersect with software, and what functions APIs perform in those processes.
- Did initial investigation on 46 accounting software packages that serve small and medium size businesses, including “all purpose” software and industry-specific software (see “Software Researched” in the Appendix). A small number of accounting software vendors serves a large portion of the SMB market. The list was limited to software that provides full coverage of accounting functions, versus limited function-specific applications, such as invoicing software.
- Investigated whether different payment types (card, ACH, electronic checks) are supported, both for incoming and outgoing payments.
- Researched the availability of payment-related APIs for each software package. For those that have APIs, documented API information that was publicly available and attempted to gather more information from companies that don't publish API capabilities. The focus was to learn about payment, AP, and AR functions supported by the APIs.

The group focused on payments themselves – incoming and outgoing – regardless of how they come in or go out.

As the work progressed, it became evident that payment service providers and payment gateways are the primary enablers, not banks, so the second phase of the project was not pursued. The number of PSPs supporting various payment functions is very large and not feasible to research and document. Any list would be quickly outdated, and the group didn't want to appear to be favoring specific providers.

Due to rapidly changing capabilities and technology, the group decided to not publish specific API calls and technical specifications.

What the Group Found

The group obtained insight into the “state of the market” of payment-related APIs available with small business accounting software. Some software companies offer proprietary software integrations and data feeds by means other than APIs; some offer APIs in an open way to promote an “ecosystem”; and others offer APIs through a closed system. Non-API integrations include file import/export, database synchronization, and plug-ins (add-ons).

The objective was to gather and publish information about how APIs connect to popular accounting and ERP packages. However, there is very little information available publicly about APIs or the lack thereof.



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Many accounting and ERP software companies are only willing to have conversations and share information about their software with companies that sign up for actual integrations.

The preference of most software companies is to enable payment services via PSP integrations. Software companies aren't in the money service business with attendant requirements such as KYC (know your customer) and AML (anti-money laundering). There are a variety of business models. Some have integrations with numerous PSPs, enabling choice for their customers, while others choose a closed system with one or a limited number of providers available.

There is no standardization of APIs by function. Software companies and PSPs author APIs specific to their software and decide which functions to support.

Businesses looking for accounting software should learn the software capabilities for sending and receiving payments and what functions the software supports. Even businesses not using electronic payments should consider payment capabilities to support future payment needs. PSPs should learn about how their product can extend the functionality of the software and what the integration requirements are. Both businesses and PSPs should pay attention to the business model of the software company. Considerations include pricing, the support model, and payments-related reporting. There are usually more options on the AR side for receipts than the AP side for disbursements.

- Does the company encourage an open ecosystem, giving both businesses and PSPs many functions and options for choice of provider?
- Does the company allow multiple "member" PSPs to integrate with their software to offer payment services and functions?
- Does the company require use of one or a limited number of PSPs to support payment functions?

Conclusion

The work group recommends that small businesses investigate accounting software that has:

- Options to initiate electronic payments as easily as checks
- Options to retrieve electronic payments received in an automated way and post those payments to AR
- Multiple options of PSPs for pricing, the support model, and reporting considerations
- Workflow for electronic payments

Small business management, accountants, and accounting service providers need information about and tools for electronic payments. APIs have promise to improve the usability and ease of workflow for electronic payments within small business accounting software. Currently, there is no readily available



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source of information available to the public about APIs that facilitate sending and receiving electronic payments. In the absence of such information businesses and their accounting service providers need to research software capabilities individually.



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Appendix

Work group members

The Business Payments Coalition thanks the work group volunteers for their efforts on the SMB Accounting Software API initiative¹. Group members spent many hours in meetings and research for this project. Volunteers are key to helping the BPC achieve results on worthwhile projects.

Todd Albers, FRB Minneapolis

Roger Bass, Traxiant

Deb Canale, Wells Fargo

Donald Cook, Today Payments

Leigh Cook, Today Payments

Amanda Cornish, Xero

Tom Frale, Transaction News

Lello Gebisa, Glenbrook Partners

Caston Jackson, SurePay Financial Services

David Jackson, Marketcy

BC Krishna, Mineral Tree

Ken Kruszka, SnapCheck

Stephanie Licht, Bankers Trust

Lindsay Mowery, EVO Payment Technologies

Jesus Pastran, ATEB Servicios SA de CV

German Peguero, Edicom

Patti Ritter, FRB Minneapolis (facilitator)

Mayank Sehgal, Rise Fintech

Matt Shanahan, Globys

Rich Urban, IFX Forum

Jacob Vandenbark, EVO Payment Technologies

Matt Vickers, Xero

Brett Weinhouse, Gemini Management

¹ The views expressed in this document are those of the work group and do not necessarily reflect the views of the Federal Reserve Bank of Minneapolis, the Federal Reserve System, or the organizations of the participants.



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Software Researched

The “APIs available” column is based on research from the group and should not be considered definitive as to the availability of payment-related APIs. A blank does not mean that APIs aren’t available; it indicates the work group was not able to readily find API documentation during research. Some APIs do not have public documentation available.

Accounting/ERP system	Market Vertical or Specialty	APIs available	Web site
Abila	Non profit	Yes	www.abila.com/nonprofit-software/fund-accounting/
AccountEdge Pro			accountedge.com/pro/
Accounting CS (Thomson Reuters)	Accounting firms/CPAs		tax.thomsonreuters.com/us/en/cs-professional-suite/accounting-cs
Acumatica		Yes	www.acumatica.com/
BlackBaud Financial Edge	Nonprofit & government	Yes	www.blackbaud.com/products/blackbaud-financial-edge-nxt
Caliber	HOA property management		www.calibersoftware.com/
Deltek Vision	Professional services	Yes	www.deltek.com/en/products/project-erp/vision
Elite (Thomson Reuters)	Legal		www.elite.com/3e/financial-management/
Ellucian Banner	Higher education	Yes	www.ellucian.com/
EpiCor	Manufacturing		www.epicor.com/erp-systems/epicor-erp.aspx
Financial Force	Financial module of Salesforce	Yes	www.financialforce.com/
FreshBooks		Yes	www.freshbooks.com/
Infor CloudSuite		Yes	www.infor.com/products/infor-os
JD Edwards Enterprise One (Oracle)		Yes	www.jdedwardserp.com/
Jenzabar	Higher education		www.jenzabar.com/
Less Accounting		Yes	lessaccounting.com/
Microsoft Dynamics 365 for Finance and Operations, On-Premises (formerly Dynamics AX)		Yes	dynamics.microsoft.com/en-us/ax-overview/
Microsoft Dynamics GP		Yes	dynamics.microsoft.com/en-us/gp-overview/
Microsoft Dynamics 365 Business Central (formerly Dynamics NAV)			dynamics.microsoft.com/en-us/nav-overview/
Microsoft Dynamics SL	Project based businesses		dynamics.microsoft.com/en-us/sl-overview/
Microsoft Dynamics 365 Business	Smaller businesses		dynamics.microsoft.com/en-us/business-central/overview/



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Accounting/ERP system	Market Vertical or Specialty	APIs available	Web site
MRI Software	Commercial and residential property management		www.mrisoftware.com/products/real-estate-financial-software/
One Up Accounting			www.oneup.com/accounting-software
Oracle NetSuite		Yes	www.netsuite.com/portal/home.shtml
QuickBooks Desktop			quickbooks.intuit.com/desktop/
QuickBooks Online		Yes	quickbooks.intuit.com/online/
Quicken			www.quicken.com/
RealPage Accounting	Property management	Yes	www.realpage.com/property-management-software/accounting-software/
Sage 100		Yes	www.sage.com/en-us/products/sage-100/
Sage 300 CRE	Construction and real estate		www.sage.com/en-us/products/sage-300-construction-and-real-estate/
Sage 300 ERP			www.sage.com/en-us/products/sage-300/
Sage 50			www.sage.com/en-us/products/sage-50-accounting/
Sage Intacct		Yes	www.sage.com/en-us/products/sage-intacct/
Sage Business Cloud			www.sage.com/en-us/size/startup-business/
SAP Business One		Yes	www.sap.com/products/business-one.html
SysPro		Yes	us.syspro.com/
TOPS	HOA property management	Yes	www.topsoft.com/
Unit4	Service and nonprofit organizations		www.unit4.com/us
Viewpoint Vista	Commercial construction		viewpoint.com/products/vista
Wave Accounting			www.waveapps.com/
Workday		Yes	www.workday.com/en-us/homepage.html
Working Point			www.workingpoint.com/
Xero		Yes	www.xero.com/us/
Yardi	Property management	Yes	www.yardi.com/products/
Yendo	Professional services	Yes	www.yendo.com/
Zoho Books		Yes	www.zoho.com/us/books/