



B2B Directory

December 2016

The B2B Directory will serve as "the" industry source for retrieving payee electronic payment information.

It will allow payers to find the information needed to make payments to their payees electronically.

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Executive Summary

The Business Payments Directory Association (BPDA) has been formed to bring to market the Business-to-Business (B2B) Directory, which is a database, or "public phone book" of business payees and payee information. It will allow payers to find the information needed to make payments to their payees electronically. Studies indicate that one of the largest barriers to increased use of electronic payments is the lack of or difficulty in acquiring the required electronic banking address to make an electronic business payment.

The B2B Directory:

- Enables payees to register their Electronic Payment Identity (EPI)
- Allows payees to specify their preferred method of payment
- Enables payers to retrieve EPIs to facilitate electronic payments
- Supports multiple payment types
- Supports related business information - e.g., remittance content and delivery preferences
- Supports retrieval of payment routing instructions
- Is scalable, trustworthy, secure

The Association to this point has worked in a collaborative effort with industry leaders (i.e.: Federal Reserve Bank, NACHA, banks, service providers, and corporates) to move from a conceptual understanding of the pain associated with processing trade payments to the development of a proof of concept to gain a better understanding of the underpinnings of a market driven solution.

The Association has reached an inflection point in its efforts. In order to maintain momentum and ultimately bring a solution to market, this effort must attract vested practitioners who are willing to move to the next stage of deploying a solution.

With a realization that funding will be a difficult and potentially protracted process, the Association will begin an initial limited scope deployment with market participants (i.e.: payers, service providers, and payees) to demonstrate the practical use of a payee directory service.

The next steps will require funding to develop an open exchange of data, legal licensing advice and market support activities. The Association seeks the involvement of market participants committed to the increased use of electronic trade payments.

1.0 Business Strategy

The Business Payments Directory Association (BPDA) has been formed as a 501 (c) (6) entity to bring to market the Business-to-Business (B2B) Directory, which is a database, or "public phone book" of business payees and payee information. It will allow payers to find the information needed to make payments to their payees electronically.

The BPDA has been organized to enable the provision of B2B directory services and related educational services that are effective, efficient and secure to businesses, financial institutions (FIs) and other service providers. Studies indicate that one of the largest barriers to increased use of electronic payments is the lack of or difficulty in acquiring the required electronic banking address to make an electronic business payment.

The B2B Directory will serve as "the" industry source for retrieving payee electronic payment information. It will store, manage, and retrieve the electronic information (i.e., "the identity") of a payee, including account and payment information. The B2B



Directory will not execute payments; it will only provide the information needed by others to execute payments. The B2B Directory:

- Enables payees to register their Electronic Payment Identity (EPI)
- Enables payers to retrieve EPIs to facilitate electronic payments
- Supports multiple payment types
- Supports related business information - e.g., remittance content and delivery preferences
- Is scalable, trustworthy, secure

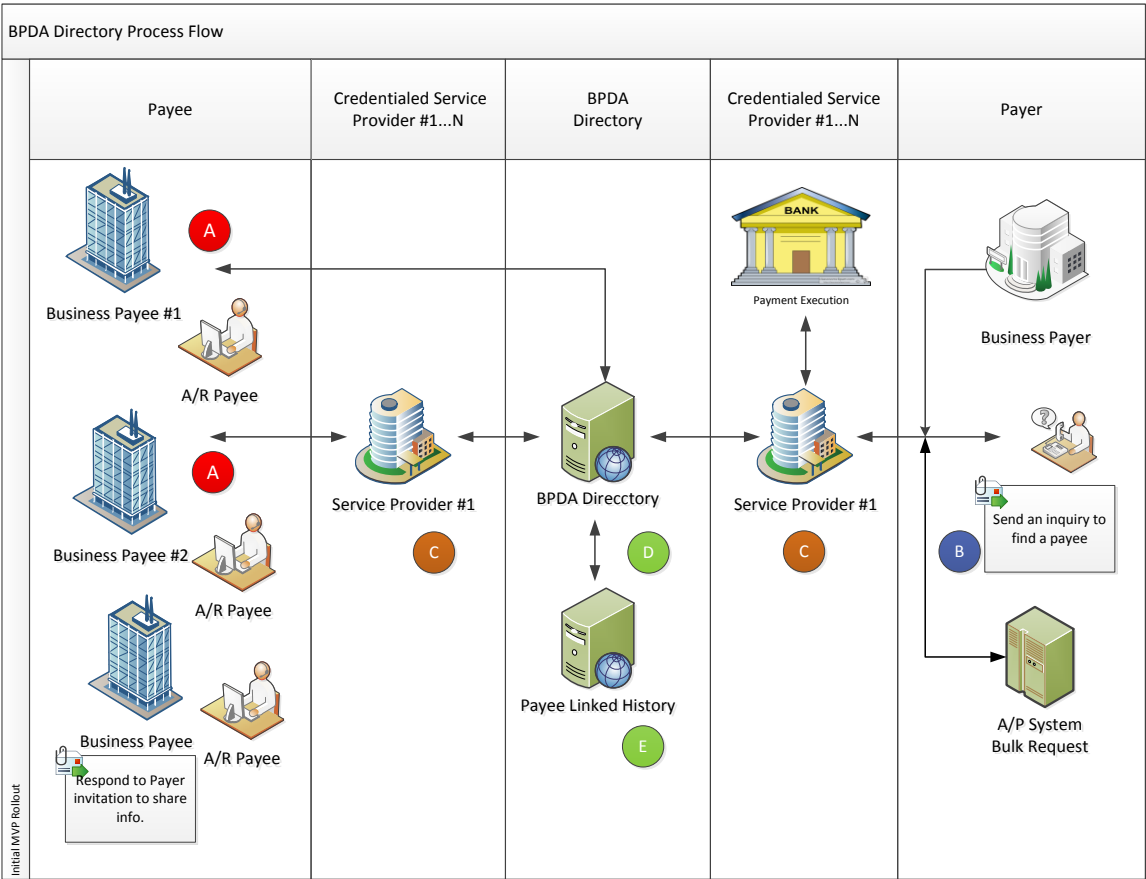
The B2B Directory's services will include:

- Publication of the Electronic Payment Information (EPI) data schema
- Development and operation of a central directory "node" for the exchange of payee data between Service Providers and their subdirectory nodes
- Development of a network of credentialed Service Providers
- Maintenance of a Payer/Payee linked data base to provide payee EPI updates to payers through their Service Providers
- Development of standard operating rules and governance
- Creation of open API interfaces for credentialed service providers to resolve a payee alias to their payment preferences.

Payee data is populated into the BPDA Directory by a credentialed Service Provider (i.e.: bank, corporate entity, BPO service provider) or directly by the Payee. All data in the Directory must be validated for authenticity. Payee data directly populated by a Payee must be validated by a Service Provider nominated by the Payee. Service Providers will be required to follow an agreed process for the inclusion of any payee data to ensure that corporate payees are enrolled and validated appropriately. The Directory will facilitate exchange between Service Provider subdirectories and cache relevant data to connect payers and payees. Directory services will be information only and will not include processing, clearing and settling of payments.

1.1 Definition of Services

The Business Payments Directory Association is a nonprofit “trade association” entity that seeks to provide a B2B Directory service to the payments industry to enable electronic payments among businesses, making payments more efficient for everyone. The goal of the B2B Directory is to enable business payers - small and large - to make more electronic payments with related business information to vendors and other payees. The Association supports an open, interoperable model and can accommodate the “listing” of data for any type of payment within its Directory service. Our goal is to make it easier for payers to connect to payee electronic payment information to overcome the inefficiency of paper payment processing.



1.1.1 High Level Process Flow Description:

- A. Businesses enroll in the B2B Directory through a credentialed service provider (i.e.: bank, A/P or A/R business process outsourcer, corporate service provider) or directly to the Directory. The business must enroll as a payee (payment recipient) and/or payer (payment initiator) through a credentialed service provider. There will be multiple credentialed service providers. When enrolling as a payee, the business completes an Electronic Payment Information (EPI) profile (i.e.: entity information, bank account, RTN, payment preferences, tax ID, etc.) accessed through the Service Provider's portal or directly through the Directory. The EPI is assigned a unique DID (Directory Identifier) that is registered with the Central Directory Node. The payee may choose one or more aliases (i.e.: email address, telephone number, etc.) for retrieval of their EPI record. Each alias resolves to the payee's preferred payment method. The Payee EPI record is activated after the Service Provider appropriately validates the entity and the profile data. The Directory contains payee EPI information that is either publicly available to all queries or private. Entity information and some payment account information would generally be available for all queries. The payee can choose to make payment account information for any payment type private, for example DDA information. If information is private, a payee must approve release of the private information to the payer making the request.
- B. A business wishes to pay a payee and needs their EPI information. Payers enroll through a Credentialed Service Provider to access the directory, and are assigned a DID, which authorizes queries. The payer connects to their Credentialed Service Provider's portal to determine if the payee is enrolled in the directory. A query request is sent to the Directory to search for the payee based on

the payee's EPI data. The Directory searches all of the Service Provider sub-directories for a response. If the Directory locates the payee, a response is returned through the payer's Service Provider which includes the DID and the payee's non-private EPI data from all sub-directories containing information for the DID. If the payer needs information that is private, they can initiate a request to the payee to share their private EPI data. The B2B Directory will support payer bulk file requests as well as individual electronic payment identity inquiries.

- C. If a payer has requested private information, the request is funneled through Payers Credentialed Service Provider to the Directory Node to the payee's Service Provider who routes the request to the payee asking for permission to share their private EPI data with the payer. The payee accepts/denies the request through their Service Provider portal, and if approved, the Service Provider sends a response with the private information. The central directory node sends the result to the payer's node. If accepted, the payer is notified that private EPI information is available.
- D. The Directory handles all queries and returns all DID information. Registered Service Providers and third party originators are granted access to the Directory can query the Directory in order to retrieve payment routing instructions using the DID or other payee aliases.
- E. A service of the Directory is the maintenance of linked payees and payers. The Linked Payer/Payee directory maintains a data base by Payee DID of all of the payer DIDs who previously requested EPI information for a specific payee. In the event there is a change to the payee's EPI profile, the payer is notified.

In the envisioned business model, the B2B Directory acts as a “gateway” to the other sub directories containing the business payee information (i.e.: name, identifier, preferred payment options, preferred remittance options, etc.).

In this business model, trusted entities enroll payees. They undertake the responsibility to complete required “know your customer” checks prior to full enrollment into the directory. Credentialed entities will set their own market price for the payee enrollment services.

Payers will gain access to the payee data base through a Service Provider. Each Service Provider sets their fee structure for the service.

Service Providers will pay an annual fee to the B2B Directory Association for access to the Directory.

The initial addressable market for the B2B Directory services is the 366,429 U.S. businesses with revenue in excess of \$5 million. This includes both payers and payees. A prerequisite of a payer retrieving payee payment information is enrollment in the B2B Directory, effectively creating market of 732,858 businesses paying services for enrollment and retrieval of payment information.

On average, businesses see a 10 - 15% turnover rate within their vendor master data and a 2.5 - 5% error rate with payment execution and returns. Typically, the business supports these with manual, paper based processes. On average, a business will spend 4 hours to set up and manage a vendor master record, and 1 hour to correct a payment execution and return error¹.

Credentialed Service Providers who initiate various types of electronic payments typically have resources dedicated to, or they outsource electronic

¹ The turnover rate, payment error rate, and time based to set up and fix vendor information are estimates, and are based on the experience from the B2B Steering Committee members.

supplier enablement for their customers. On average, the cost to enable each supplier is \$100 to \$250. Often times, they have to enable the same supplier for each customer they have, effectively raising the cost for that supplier by the number of times the supplier is requested to be enabled. The B2B Directory service will cut the cost of supplier enablement for these businesses by 50%, shorten the time to research information on payees, and increase the effectiveness of the supplier enablement effort².

1.2 *Routing, Aliases, Invoices and Fraud Services*

The value of the BPDA directory or set of federated directories goes beyond a listing of payee information. Value can be extended through multiple payment needs:

- A. **Routing:** with multiple legacy and new faster payment solutions within the US payment landscape, the ability to route payments between solution platforms without the need for payers or payees to enroll in each solution is addressed through a central directory.
- B. **Aliases:** public disclosure of banking information is a valid concern of all payment participants. The BPDA central directory would act as the single source to securely resolve payee aliases to their banking information.
- C. **Invoices:** the ubiquitous use of electronic invoices has been hampered by the lack of delivery addresses and supported standards. The directory can store addresses for e-invoice receipt and the receiver's supported standards.
- D. **Fraud:** all payee information contained in the BPDA directory will be authenticated prior to inclusion. The directory becomes a national "white" list of valid payees. The list becomes useful to payers and others looking to validate payee details.

² The cost and time savings are estimates, and are based on the experience from the B2B Steering Committee members.

These are a few examples of the value extension of the central directory to support multiple business use cases.

1.3 SWOT Analysis

B2B Directory SWOT Analysis

Strengths		Weaknesses	
	<i>Strengths/Opportunities</i>	<i>Weaknesses/Opportunities</i>	
	Obvious natural priorities <ul style="list-style-type: none"> • Leverage industry collaboration (i.e.: Federal Reserve, NACHA, banks, solution providers, and businesses) with a desire to improve the efficiency of US payments through greater adoption of electronic payments. • Completed Intellectual Property infringement search • Documented Electronic Payment Information schema (EPI) • Completed technology proof of concept • Established legal entity 	Potentially attractive options <ul style="list-style-type: none"> • Mitigate development risk by identifying a proven entity for development versus creating a de novo organization for development of platform • Issue RFP and choose known industry entity to outsource on-going operations 	
	<i>Strengths/Threats</i>	<i>Weaknesses/Threats</i>	
	Easy to defend and counter <ul style="list-style-type: none"> • The Clearing House/ Vocalink platform and the imbedded directory services of other Faster Payments Fintech solution providers becomes the industry standard as part of the Faster Payments initiative 	Potentially high risk <ul style="list-style-type: none"> • B2B Directory is established but fails to attract enough participants in the early stages, hindering startup phase and long-term viability. 	
Opportunities			
Threats			

1.2.1 Strengths

Many businesses continue to rely on expensive and inefficient methods of making payments. Even when payers have full access to electronic payment options, such as ACH credit push, wires, PayPal, Visa Payables Automation, MasterCard InControl, Pay-Mode-X, etc., they struggle to know who accepts electronic payments, manage the information associated with each payment option, validate that the information is accurate and trustworthy, and keep up with emerging payment options.

While a variety of “proprietary solutions and closed-network opportunities” exist to attempt to alleviate this problem, to date, no single entity has stepped forward to create an industry utility that would create ubiquity and help businesses to gain from the increased efficiency of having access to electronic payment options. The Business Payments Directory Association will do just that through the creation of its B2B Directory service. The B2B directory:

1. Enables payees to register their Electronic Payment Identity (EPI)
2. Enables payers to retrieve EPIs to facilitate electronic payments
3. Supports multiple payment types
4. Supports related business information - e.g., remittance content and delivery preferences
5. Is not a payment system
6. Is scalable, trustworthy, secure

The B2B Directory is like a public phone book containing the payment identities of payees that accept electronic payments. The Business Payments Directory Association will be the only organization providing such a service in an open model that can accommodate all payees and payers.

1.2.2 Weaknesses

Up to this point, the B2B Directory has moved forward with support from a variety of industry players serving in volunteer roles as part of the Business

Payments Coalition, which is comprised of over 550 members seeking to promote electronic payments and remittance exchange. Directory work group participants have included the Federal Reserve Bank of Minneapolis, NACHA, Association of Financial Professionals, banks, businesses, and BPO solution providers.

The Directory is at a critical juncture, wherein it needs to move away from a volunteer-led effort and be brought to market. Creating the Business Payments Directory Association legal entity is the first step in this process. The new legal entity has established initial by-laws and completed a patent scan to insure that the B2B Directory architecture does not infringe on existing intellectual property.

The construction of the directory will require upfront seed investment. A preliminary estimate of the costs to develop the directory has been completed. The initial estimate to develop the central node directory is approximately \$1,000,000, and \$500,000 to \$750,000 in annual operating expenses.

1.2.3 Opportunities

There are more than 5.7 million total businesses in the United States, including more than 360,000 businesses with revenue in excess of \$5 million.

Although ACH B2B payments now account for more than 50% of B2B payments, a significant portion of total firms, and especially smaller companies, do not have an easy way to pay vendors and solution providers outside of using the paper check. Those companies could benefit greatly from the Association's directory service.

One significant reason for the continued popularity of checks is their ubiquity and ease of use. Payers are able to make a check payment while knowing very little about the payee (minimally, they need to know the payee's name). In contrast, electronic B2B payments require a lot more information

about the payee. This information is often difficult to access, given its sensitivity, security requirements, and transience. The Association's directory service can help companies solve this dilemma. The further reduction of B2B check payments can eliminate \$10-20 billion in annual payment expenses for the faster, more secure and cost effective electronic payment options.

Within the last ten years, large numbers of businesses have outsourced their accounts payable processes to business process operators (BPO). These providers provide scale and lower cost alternatives to reduce a business's cost for accounts payable processing.

BPO providers continuously strive to reduce their cost of operations. Check payments are a major payment cost and migration to electronic payment methods offers substantial cost reductions. As part of their service, BPO providers incur a large expense in acquiring the electronic information from payees to switch them to alternative electronic payment options. The BPDA directory will dramatically reduce their cost of acquisition of payee electronic payment methods.

Likewise, banks are faced with the daunting challenge in the migration of their business customers to a greater use of faster digital payments. Efforts such as the Federal Reserve Bank's Faster Payment Initiative and The Clearing House's faster payment announcements indicate movements in this direction. One of the critical success factors to the faster payments initiatives in the United Kingdom (UK) and Australia was the availability of a central payment directory. To-date, no such structure has been developed in the U.S. The BPDA looks to facilitate this critical success element through development of the B2B Directory. In the process, a new revenue opportunity is developed for banks, acting as a Service Provider, to generate new fee income for the listing of their customer's (payees) payment preference information in the B2B directory and payer retrieval of payee information.

1.2.4 Threats

Aside from the obvious technology and economic risks of launching a new service, there are two potential threats for moving to the stage of development, deployment and operation:

- A. The technical and business model infringes upon existing intellectual property. This threat has been mitigated through an intellectual property search for potential patent infringements.
- B. The Clearing House or other solution providers develop a similar product that obviates our need.
- C. Based on interest in our effort by the top banks, the primary owners of The Clearing House, and solution providers to the Faster Payments Initiative, we see our efforts as being complimentary with the potential for inclusion in their offerings.

A major challenge of implementing a new faster payments infrastructure within the US will be the need for interoperability between the multiple competing solutions. Unlike other countries, where a single regulator controls the payments infrastructure, the Federal Reserve has acted as market catalyst for multiple open market solutions for a new faster payment infrastructure.

The B2B Directory will utilize an open architecture that will allow multiple faster payment solution providers to gain access to payee payment addresses, thus increasing the interoperability of the various platforms and assisting in the goal of ubiquity for new faster payment solutions.

1.4 Collaborative Advantage

The Business Payments Directory Association will be unique in the industry. To date, no objective party has stepped forward to create a directory that will serve the entire marketplace. The Association will provide directory services to payers and payees regardless of network affiliation, payment type preference, involvement in any other payment association, remittance information requirements, or company

size. The Association's advantage is derived from its unique ability to construct and manage a service that brings efficiencies to market participants in the following ways:

- The B2B Directory is an industry utility that seeks to be broadly accessible
- Enrollment entities (Service Providers) will set their own market prices for their services for enrolling payees into the B2B Directory. With more than 6 million US businesses, this represents a significant market opportunity for new revenue.
- Any costs or revenues associated with the Directory will be consistent with the nature of an industry utility.
- The cost to payees to participate in the Directory will seek to incent adoption and reflect the value they derive.
- The cost to payers to use the Directory will seek to incent adoption and reflect the value they derive.
- The cost to Service Providers to connect to the Directory will seek to incent participation, adoption and reflect the value they derive.
- The Directory will seek to complement existing business models of payees, payers, or Directory Hosts.

The Association has developed a model for the Directory service that utilizes an open platform and utilizes copyrighted software to accommodate a variety of electronic payment identities (EPIs).

1.5 Target Market

The Association seeks to serve any payer, payee, or Service Provider (subdirectory operator) that seeks a more efficient way to obtain and give information that will enable payments to be processed electronically. The Association's Directory service has unique potential for smaller businesses that are currently challenged in finding ways to manage the information of payees.

For example, the Association for Financial Professionals (AFP) 2016 study of B2B payment practices³ found that companies with \$1 billion and more in annual revenues (large business) still make over 50% of their payments by paper check. Other industry studies show that small, medium, and middle market companies - companies with up to \$1 billion in annual revenue - make 60% to 90% of their payments by paper check. Generally, the smallest companies use the most paper checks. Therefore, small and medium sized companies might gain the most efficiency from a service such as the B2B Directory.

Likewise, larger payers have a considerable challenge in paying smaller businesses due to the smaller business's lack of sophistication. The B2B Directory will address barriers on each end of the market.

1.6 Practical Go-to-Market Approach

The Association to this point has worked in a collaborative effort to move from a conceptual understanding of the pain associated with processing trade payments to the development of a proof of concept to gain a better understanding of the underpinnings of a market driven solution.

The Association has reached an inflection point in its efforts. In order to maintain momentum and ultimately bring a solution to market, this effort must attract vested practitioners who are willing to move to the next stage of deploying a solution.

The cost to develop a minimum viable product (MVP) solution is estimated to be less than \$1 million. The initial development effort would be focused on the definition and development of the Directory and initial interfaces. The ability to source funding for the development work could be an arduous task and become quite protracted, well beyond the resources of a collaborative effort. Recognizing these realities, we have developed the following go-to-market approach:

³ 2013. JP Morgan. "2016 AFP Electronic Payments Survey." <http://www.afponline.org/epayments/>

1. Initial Seed funding & validation
 - a. Creation of a “community” of Service Providers, payers and payees for early adoption
 - b. Initial development of a Directory and web interfaces.
 - c. Initial funding of \$250,000
 - i. Use of funds: directory construction, legal advice and marketing services
2. Industry Marketing
 - a. Commitment of multiple Service Providers and large payers
3. Production Deployment
 - a. Bring the Directory to production readiness, including hosting, security testing, and production staffing
 - b. Development of standards for direct connection to the Directory
 - c. Additional funding amount dependent upon level of and type of subscription/revenue, based on broader participation.
4. **Multi-lateral Deployment** –Once the initial market has been determined and there is a need for the inclusion of more payee data than can be obtained through a single Directory, the Association has considered the design and development of a federated data base architecture. At this point, the Directory would become a central node gateway. At that point, additional Service Providers may enter the market to ultimately provide access to the data of an additional 5 million US businesses.

There are risks and rewards associated with this approach:

Pros	Cons
<ul style="list-style-type: none"> • Reduces the need for extensive upfront funding • Reduces the risk of the development of a single large solution through an iterative approach • Determines willingness of market players to participate 	<ul style="list-style-type: none"> • Requires time to develop a “community” of motivated market players • Delays the development of a complete market solution • Delays decision of some market participants to engage

Unless there is a clear mandate and funding from the market, the proposed go-to-market approach is the most practical approach at this time. Our ultimate vision is to provide the US payment industry a utility service which would encompass payee listings, alias and routing services, with the future expansion into invoice and fraud services.

1.7 Next Steps

The BPDA has taken the prerequisite steps to:

- capture the need for a payment directory⁴,
- educated the market⁵,
- developed proprietary architecture and data schema for the storage and exchange of data,
- completed a technology proof of concept,
- executed a patent search for potential IP infringement,
- and completed the steps to create a new legal entity.

⁴Electronic Payments & Remittance Data: Pain Points & Solutions, Summary of Results from the 2012 Survey of Business Practitioners by the Remittance Coalition

⁵Remittance Coalition, B2B Directory Concept Paper, September 2014

We will now begin the effort to create a community of interested participants. We will seek the participation of a small number of participants in the initial community. Ideally this would include large payers and A/P service providers who recognize the value of a payee directory.

At the same time, we will need additional seed funding for this step. The funds will be used for the creation of the Directory and associated interfaces, legal resources for licensing agreements, and market collateral material.

To this end, the Association will approach potential interested parties for their expression of interest:

- in exchange for a contribution of \$50,000, a board of directors position in the Business Directory Payments Association, we will be offering five new seats to the initial board.
- in exchange for a contribution of \$10,000, a membership in the early adopter user group with preview and input into operating rule creation and strategic direction.

There are a number of potentially interested parties.

- Associations – dedicated payments organizations, including credit card networks
- Banks – treasury services providers
- Information Providers – corporate entities that provide information and credit services
- Large corporate payers – motivated to further reduce their remaining check payment volume.

The most difficult task off any new venture is gaining market awareness and momentum. The Association believes it has taken the necessary first steps. Our second task is acquiring interested parties and funding. The initial objective of improving the use of digital payments and improved digital posting of remittance

details are readily apparent. The ultimate vision of the Directory Association is beyond the immediate solution of the exchange of payee payment addresses to become the industry utility for additional information required to facilitate a greater US digital commerce.

For additional information, please contact:

Lawrence F. Buettner

*Chair,
Business Payments Directory
Association*

Senior Vice President,
Wausau Financial Systems

Lbuettner@wausaufs.com

(o) 715-241-2251

Patti Ritter

Sr. Payments Consultant
Payments, Standards, and
Outreach Group,
Federal Reserve Bank of
Minneapolis

Patti.Ritter@mpls.frb.org

(o) (612) 204-5437

Todd M. Albers

Sr. Payments Consultant
Payments, Standards, and Outreach
Group,
Federal Reserve Bank of
Minneapolis

todd.albers@mpls.frb.org

(o) 612-204-5543





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DIRECTORY ASSOCIATION