

# Worldwide Enterprise Payments 2005 Vendor Profiles: Part One

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## Payments Advisory Service

MARKET PLAYERS

#FIN202197

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### FINANCIAL INSIGHTS OPINION

The enterprise payments market is complex and rapidly evolving, with a wide variety of vendors approaching it from many different angles. The market has not been growing as fast as it might because vendors have had difficulty positioning their products in a way that provides banks with a clear and compelling ROI. Financial Insights finds that:

- Vendors are grappling with bank customers that still tend to view their payment challenges from the perspective of the payment silos (e.g., card, check, automated clearinghouse [ACH], and wire), and thus have difficulty understanding the value of a solution that works across silos.
- Vendors themselves tend to view the market from the perspective of their existing customers, overlooking emerging opportunities, particularly in the areas of corporate cards and check image exchange. This point of view limits their ability to present a compelling ROI to multiple customers within an institution.
- Financial institutions need to give their payment councils real technology budgets so they can make investments in the common infrastructure that will be necessary to take advantage of new opportunities in financial supply chain management as well as drive out cost and inefficiency from existing systems.
- Financial institutions should take another look at the offerings of the vendors profiled in this report. The industry has come a long way in the past two years, and solutions that were immature at first glance have now matured. Although it is unlikely to find a complete solution, the financial institution can nonetheless save time, reduce costs, and minimize risks by using prebuilt components from outside vendors in assembling its enterprise payments system.

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Financial Insights: Payments Advisory Service: Market Players

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## IN THIS REPORT

This report provides a brief overview of the most significant vendors offering solutions in the enterprise payments space. Due to the large number of companies involved, we have opted to focus in this document on the major software vendors; a future Market Players report will cover the services side.

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### Brief Description of the Solution

The concept of enterprise payments arises from the observation that all payment methods share a common set of data elements and functions. Although a check and a credit card may seem very different on the surface, they are actually quite similar. Both have a source of funds, a security model, and a clearing and settlement network. In addition, all payment methods require certain services, such as risk and fraud management. However, in most banks, the payment systems exist in silos, closely tied to particular retail and wholesale product lines. This setup is convenient for purposes of product development and marketing, but it increases costs through duplication and complex integration requirements.

An enterprise payments solution would ideally be a single processing platform consisting of the key elements shown in Figure 1. These elements are as follows:

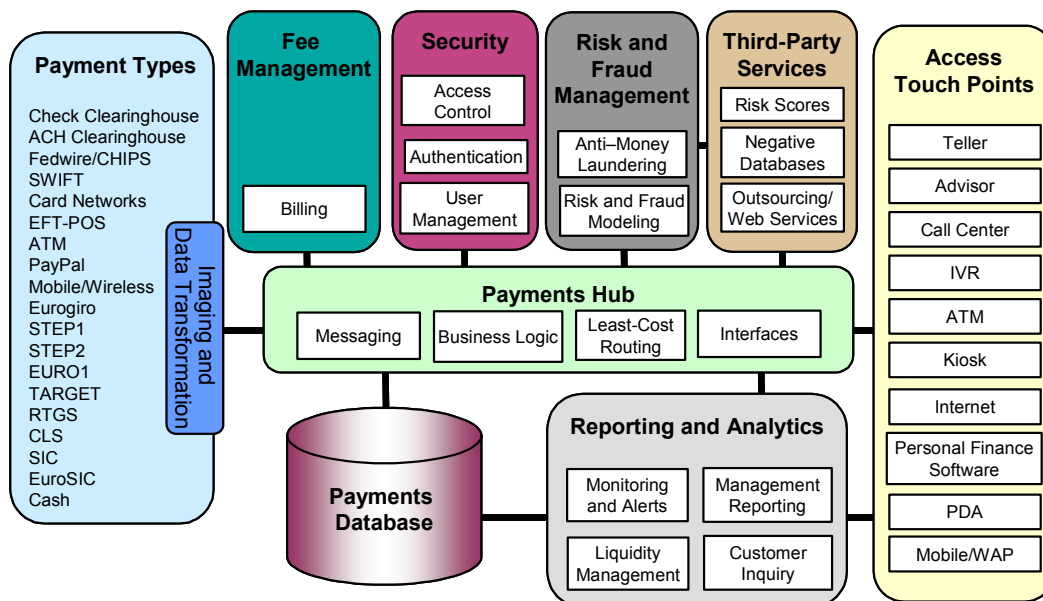
- **Payments hub.** This intelligent messaging hub includes business rules for processing multiple types of payments. It is a middleware platform that serves as an integration hub to other components of the system. It has the capability to convert payment transactions from one payment type to another, thus enabling the bank and its customers to take advantage of the most advantageous combination of price, risk, and timeliness from different payment networks.
- **Payments database.** The payments database records the transaction history for all payment types and feeds additional databases for **reporting and analytics**, which consist of databases and reporting systems optimized for the following purposes: transaction monitoring and alerts, liquidity management, management reporting and analysis, and customer inquiry.
- **Fee management.** This ensures consistent and optimal pricing for all transactions based on a wide range of factors, such as settlement time, settlement risk, transaction size, external network fees, premium services, and customer relationship (e.g., monthly volume of payments and total assets managed).

- **Security.** This verifies the identity of users, authenticates the source of each transaction, and manages access to data.
- **Risk and fraud management.** This uses a combination of internal and external data, including statistical models and databases, to evaluate the probability that a transaction is fraudulent or violates money laundering statutes.
- **Third-party services.** These may include risk scores, databases of stolen cards or bad checking accounts, or entire components that are being handled through outsourcing or Web services.
- **Access touch points.** Access is provided to the system through various channels, including the Web, telephone VRU, computer connected to a dedicated line, and kiosks. The same data and functions should be available through all channels.
- **Imaging and data transformation.** This converts paper and electronic transactions into a common messaging format used by the payment hub.

In practice, as we shall see, an enterprise payments system comprises many separate units of technology, from servers to databases, some legacy systems and some newly built. Figure 1 is meant to be a logical framework.

**FIGURE 1**

Enterprise Payments Concept Diagram



Source: Financial Insights, 2006

## **SITUATION OVERVIEW**

Driven by the realization that between 33% and 40% of their revenue is derived from payments, financial institutions are searching for ways to better utilize their existing payments infrastructure. Key objectives include:

- Combining transaction data from multiple systems into a single logical view
- Simplifying interfaces through a common messaging framework
- Centralizing transaction monitoring and exception management to eliminate redundant operations and improve performance
- Increasing the straight-through processing (STP) rate by reducing exception rates and automating more of the exception management process
- Improving fraud detection by building cross-payment system predictive models
- Reducing the cost of compliance by simplifying and normalizing payment processes, as well as automating the reporting as much as possible
- Eliminating redundant functions and leveraging best practices across the various payment systems
- Reducing reliance on proprietary technology and increasing use of open, standards-based technology such as Java 2 Enterprise Edition (J2EE)
- Providing greater transparency and reliability to corporate and retail customers
- Reducing the time and cost involved in introducing new payment products by facilitating the integration of new technology with the existing infrastructure
- Complying with government mandates such as the single euro payment area (SEPA) in Europe by combining domestic and cross-border payment systems

This is a big list, and financial institutions are not going to be able to tackle it all at once. Vendors face the challenge of helping financial institutions identify quick wins that can produce immediate savings to finance subsequent investments. Most commonly, we find financial institutions starting with a single payments database or a payments

hub. Implementation of a payments hub is usually done initially on the front end to provide corporate clients with a more efficient way of initiating and monitoring payments. Later, the back-end systems will be connected to produce real operational efficiencies. See *How to Get to the Promised Land: Alternative Pathways to Enterprise Payments* (Financial Insights #FIN1626, July 2005) for more discussion of implementation strategies.

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## **The Competitive Landscape**

Enterprise payments software vendors usually have come from another market segment, either cash management, electronic invoicing and payment, SWIFT integration, or financial messaging. As a result, they tend to have strengths that reflect their origins.

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## **Segmenting the Market**

We segment the market along two dimensions:

- Where the solution is targeted:
  - Front office (payment acquisition)
  - Middle office (payment hub)
  - Back office (payment processing)
- Payment focus (i.e., retail, wholesale, or both)

There are no exclusively retail payments-oriented vendors in this report because to date most enterprise payments activity has been focused on the wholesale side. We examine the reasons for this, and why it might change, in the Future Outlook section. Instead, we have a variety of wholesale-focused players, such as Fundtech, Wall Street Systems, and so on, and a few vendors that cover both sides of the bank, such as ACI Worldwide and Clear2Pay.

Table 1 shows how the vendors in this report are segmented along the two dimensions discussed here. Where a vendor plays in more than one space, it is listed multiple times.

As Table 1 shows, most of the vendors are concentrated in the wholesale middle-office segment. This is where most of the deals are today as banks attempt to reinforce their corporate banking relationships. ACI Worldwide is the only vendor with a presence in all six segments, although it does not play in all of these segments in every geography.

| <b>TABLE 1</b>                          |  |  |   |
|---|--|--|---|
| Enterprise Payments Market Segmentation |  |  |   |
|   | Front Office   | Middle Office  | Back Office   |
| Wholesale                               | <ul style="list-style-type: none"> <li>• ACI Worldwide</li> <li>• Bottomline Technologies</li> <li>• Clear2Play</li> <li>• Dovetail Systems</li> <li>• Fundtech</li> </ul> | <ul style="list-style-type: none"> <li>• ACI Worldwide</li> <li>• Bottomline Technologies</li> <li>• Clear2Play</li> <li>• Dovetail Systems</li> <li>• Fundtech</li> <li>• TietoEnator</li> <li>• Wall Street Systems</li> </ul> | <ul style="list-style-type: none"> <li>• ACI Worldwide</li> <li>• Dovetail Systems</li> <li>• Fundtech</li> <li>• TietoEnator</li> <li>• Wall Street Systems</li> </ul> |
| Retail                                  | <ul style="list-style-type: none"> <li>• ACI Worldwide</li> </ul>  | <ul style="list-style-type: none"> <li>• ACI Worldwide</li> <li>• Bottomline Technologies</li> <li>• TietoEnator</li> </ul>  | <ul style="list-style-type: none"> <li>• ACI Worldwide</li> <li>• TietoEnator</li> </ul>  |

Source: Financial Insights, 2006

As the enterprise payments market develops, we believe that retail payments will become increasingly important. Already we are seeing payment methods that were traditionally wholesale oriented, such as the ACH, being used more and more for retail payments. In the opposite direction, credit and debit cards, which heretofore have been almost entirely retail oriented, are experiencing rapid growth in the wholesale area (particularly in the United States). As the importance of cards in wholesale payments grows, vendors such as ACI Worldwide and eFunds (not covered in this report) will have a head start over those that have concentrated on the current opportunity.

## **THE MARKET PLAYERS**

### **Solution Gap Analysis**

The framework shown in Figure 1 is an "ideal" enterprise payments system; in reality, no vendor provides all of the components shown for all payment types over all channels in all geographies. In the following section, we compare and contrast the vendors on the basis of how well they fulfill the ideal laid out in Figure 1.

### **Compare and Contrast**

In this section, we compare the vendors along two axes:

- **Capability to execute:** The ability of the vendor to meet the requirements of banks implementing enterprise payments projects (This includes features, functionality, scalability, integration capability, and so on. See Table 2.)

- **Enterprise payments functionality:** The range of functions from the enterprise payments concept diagram shown in Figure 1 that is supported, as well as the range of payment methods supported (In this case, we have divided the ratings into two tables, one for functional areas and one for payment methods. See Tables 3 and 4.)

Each table rates the vendors on a simple three-point scale: An open circle represents minimal or no support for the feature listed; a half circle indicates average support, although there may be significant gaps; and a full circle indicates superior support. The ratings for each attribute are averaged to create the bubble chart shown in Figure 2.

To account for the fact that some capabilities are more valuable in the current market environment than others, we have applied weights to the values in Tables 3 and 4 to come up with the feature/function attribute in Table 2. A list of weights, as well as their rationale, is given in the Methodology section at the end of the report.

**TABLE 2**

Vendor Positioning in the Enterprise Payments Software Market:  
Capability to Execute

|                  | Feature/<br>Function | Scalability | Integration<br>Capability | Platform<br>Support | Architecture | Market<br>Coverage | Geographic<br>Penetration |
|------------------|----------------------|-------------|---------------------------|---------------------|--------------|--------------------|---------------------------|
| ACI Worldwide    | ●                    | ●           | ◐                         | ●                   | ◐            | ●                  | ●                         |
| Bottomline Tech. | ◐                    | ●           | ◐                         | ◐                   | ◐            | ◐                  | ◐                         |
| Clear2Pay        | ●                    | ◐           | ●                         | ●                   | ●            | ○                  | ◐                         |
| Dovetail Systems | ◐                    | ●           | ●                         | ●                   | ●            | ◐                  | ◐                         |
| Fundtech         | ◐                    | ●           | ●                         | ◐                   | ◐            | ◐                  | ○                         |
| TietoEnator      | ◐                    | ●           | ◐                         | ◐                   | ◐            | ◐                  | ○                         |
| Wall Street Sys. | ◐                    | ●           | ●                         | ◐                   | ◐            | ○                  | ◐                         |

Legend: ○ Low, ◐ Medium, ● High

Source: Financial Insights, 2006

The attributes in Table 2 were evaluated as follows:

- **Feature/function:** As explained before, this is simply a weighted average of Tables 3 and 4 and encapsulates the vendor's ability to provide a complete solution according to the vision depicted in Figure 1. Most vendors did not provide a complete solution, and even ACI Worldwide and Clear2Pay had some gaps.
- **Scalability:** Scalability reflects the ability of the vendor's software to accommodate the transaction volumes of a tier 1 bank. Past experience with tier 1 banks was required to be assigned a full circle.

- **Integration capability:** Integration capability is the extent to which a vendor's solution can integrate with a wide variety of software platforms. Reliance on mainframe technology, even if the company had developed a next-generation version of its product, would reduce this score.
- **Platform support:** Platform support reflects the number of different platforms supported. Here, support for mainframe systems is an asset, offsetting the deduction in integration capability. Support for both .NET and J2EE is a plus here. (Most vendors supported J2EE.)
- **Architecture:** Architecture measures the modernity of the solution architecture, with the ideal being a completely component-driven service oriented architecture (SOA).
- **Market coverage:** The market coverage score reflects the breadth of market coverage over the segments defined in Table 1. Multiple segment coverage gets a better score.
- **Geographic penetration:** The geographic penetration score reflects the extent to which a vendor has operations and/or customers in multiple regions around the world.

**TABLE 3**

Vendor Positioning in the Enterprise Payments Software Market: Product Competitiveness — Enterprise Payments Functionality

|                  | Payments Acquisition | Payments Hub | Payments Database | Fraud/Risk Management |
|------------------|----------------------|--------------|-------------------|-----------------------|
| ACI Worldwide    | ●                    | ◐            | ◐                 | ●                     |
| Bottomline Tech. | ●                    | ◐            | ◐                 | ◐                     |
| Clear2Pay        | ●                    | ●            | ●                 | ○                     |
| Dovetail Systems | ◐                    | ●            | ●                 | ○                     |
| Fundtech         | ◐                    | ●            | ◐                 | ◐                     |
| TietoEnator      | ○                    | ●            | ●                 | ◐                     |
| Wall Street Sys. | ○                    | ●            | ○                 | ●                     |

Legend: ○ Low, ◐ Medium, ● High

Source: Financial Insights, 2006

The attributes in Table 3 map to the components shown in Figure 1 as follows:

- **Payments acquisition:** Payments acquisition is the customer interface and customer service functions, shown on the right-hand side of Figure 1 in the box marked "access touch points." Bottomline Technologies is particularly strong in this area because its primary market focus is the initiation of corporate payments. Vendors that are more focused on the back office, such as Fundtech or Wall Street Systems, have less to offer in this area.
- **Payments hub:** Payments hub is the central box in Figure 1, and the rating corresponds to the level of support provided for payment messaging, rules, least-cost routing, and interfaces. All of the vendors provide good support for this critical component, which is why they appear in this report; ACI Worldwide and Bottomline Technologies are more focused on the payment acquisition side, which is why their hubs are a little less full featured than those of vendors such as Clear2Pay, which are primarily focused on this area.
- **Payments database:** Payments database is not usually provided directly by the vendor; instead, the vendor will supply an interface and a series of data definitions, and the bank can select any of the leading databases (e.g., DB2, Oracle, Microsoft SQL Server, and so on) for the actual construction of the database. All of the vendors do provide databases and reporting functions for the features provided by their software, but we do not consider these to be payment databases because they do not include all payment types, only those that are directly integrated into the software. A bank will likely have to construct separate interfaces for those payment types that it chooses to operate independently of the enterprise payments hub.
- **Fraud/risk management:** Fraud/risk management is another area that is usually provided primarily by a third-party specialty vendor, such as Fair Isaac. One exception is ACI Worldwide, whose Proactive Risk Manager product is specifically designed to manage card fraud, coming out of its legacy as a provider of EFT card processing systems. Wall Street Systems also supplies its own fraud and risk manager. The other vendors may provide some basic features, such as duplicate checking, a rules engine, or message validation, without any of the dynamic risk score modeling that we would expect of a full-featured fraud/risk management system.

Table 4 simply shows whether or not a particular vendor supports one of the four major payment categories. All of the vendors provide strong support for wire transfers and real-time gross settlement (RTGS) systems.

**TABLE 4**

## Vendor Positioning in the Enterprise Payments Software Market: Product Competitiveness — Payment Methods Supported

|                  | Cards | Check | ACH | Wire/RTGS |
|------------------|-------|-------|-----|-----------|
| ACI Worldwide    | ●     | ◐     | ◐   | ●         |
| Bottomline Tech. | ○     | ◐     | ●   | ●         |
| Clear2Pay        | ◐     | ◐     | ●   | ●         |
| Dovetail Systems | ○     | ○     | ◐   | ●         |
| Fundtech         | ○     | ◐     | ◐   | ●         |
| TietoEnator      | ●     | ○     | ◐   | ●         |
| Wall Street Sys. | ○     | ◐     | ○   | ●         |

Legend: ○ Low, ◐ Medium, ● High

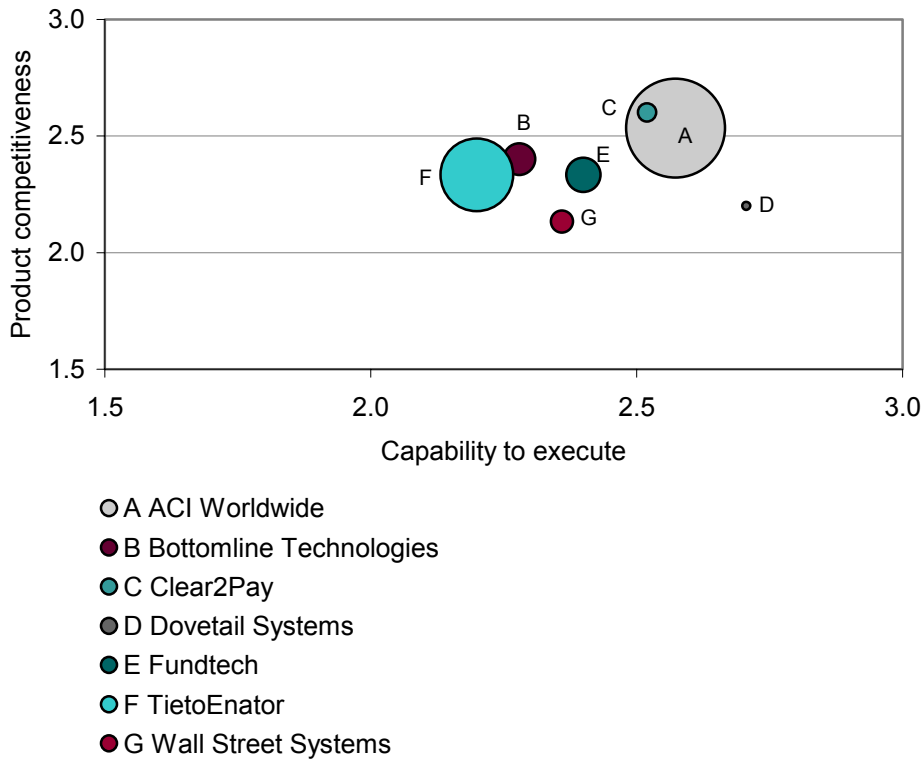
Source: Financial Insights, 2006

This reflects the centrality of corporate and wholesale payments in most of the enterprise payments deals we are seeing today. ACH support is likewise fairly universal, although some vendors do not support both debits and credits because credit transfers are much more common with corporate payments. Check support is often present in some capacity, but given the decline of checks worldwide, none of the vendors is putting too much effort into it. Check image exchange is something a bank would need to obtain separately. Card support is rare, with the exception of ACI Worldwide, which has a strong presence in the debit card processing market. Clear2Pay also has some support dating from its start as a provider of chargeback software, although its enterprise payments products are not focused on cards. TietoEnator also has a strong base in debit card processing in its home geography. Cards are not often part of enterprise payments projects today, although they will become more important as their use for corporate payments grows.

Figure 2 aggregates all of these ratings into a single chart. Each vendor is represented by a bubble, the size of which is a measure of total enterprise payments revenue. Note that the vendor in question may have total revenue greatly exceeding this number; however, for the purposes of this comparison, we are counting only those revenues that Financial Insights was able to confidently ascribe to enterprise payments projects at banks. Therefore, although Bottomline Technologies had \$95.6 million in revenue for 2005, most of this was for payment systems for businesses, or for financial institutions in their capacity as businesses that need to pay suppliers.

**FIGURE 2**

Comparison of Enterprise Payments Vendors



Notes:

Bubble size is based on FY05 enterprise payments revenue.

Please see the Methodology section for a description of positioning of vendors on the axes.

Source: Financial Insights, 2006

Figure 2 shows ACI Worldwide in the strongest position overall, having both the largest revenue and a broad base of features. Niche players such as Clear2Pay or Dovetail may be stronger in specific areas or more responsive, but they do not have the financial resources of ACI. TietoEnator is the second-largest vendor covered in the study, but it will have to work hard to extend itself into the larger enterprise payments market. Fundtech occupies a middle ground, strong in the areas where it has chosen to focus (e.g., corporate and wholesale payments) but with room to grow in other areas (e.g., cards and retail payments).

In the vendor profiles (see the Appendix), we discuss the particular strengths and weaknesses of each vendor.

## **FUTURE OUTLOOK**

In this section, we discuss the ways in which the enterprise payments market is evolving, and how this will affect the fortunes of the various companies covered in this report.

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### **Market Trends**

Today, enterprise payments activity is centered mostly in Europe, driven by the SEPA initiative, which requires banks to charge the same price for cross-border transactions as they do for domestic transactions. As a result, banks are being pressured to increase the efficiency of their cross-border payment systems. Other aspects of SEPA include the development of pan-European payment networks such as the TARGET system, which is connecting the 15 central bank RTGS systems in the eurozone, and a planned direct debit system. European banks are faced with a moving target as domestic payment processors and banks begin to poach each other's territory and connect to the new payment networks. In such an environment, building a versatile enterprise payments system can be a way of hedging one's bets so that no matter what the European payments environment looks like in 2010, the bank will be able to handle it. For more information on the European situation, see *Will SEPA Pave the Way Toward Enterprise Payments?* (Financial Insights #FIN1708, December 2005).

U.S. banks are experiencing pressure primarily from corporate customers that would like to consolidate their multiple corporate banking interfaces into one, and that generally want greater visibility and reliability from their banks. However, the corporations lack the power of a government mandate, so banks are moving at different paces according to their view of how critical the problem is. Most of the focus right now is on checks and cards as consumer payments shift from the former to the latter. Some banks are building enterprise payments databases, but in general, U.S. banks are far behind their European counterparts. As a result, most of the vendors we spoke to for this report are shifting their focus to Europe, where the opportunities are greater.

However, the future enterprise payments market will look quite different from the current one. Cards are becoming a more important component of corporate payments, increasing at a 22.5% compound annual growth rate (CAGR) from 2005 to 2009. Although today cards are considered primarily a retail product, banks will be looking to leverage their card processing systems into the corporate market to offset slow growth in the retail market. At that point, being able to support card transactions within an enterprise payments solution will be critical.

Although checks are seeing their use declining, they will be a major form of payments, particularly corporate payments, for the foreseeable future. Checks are also shifting from paper to electronic form with the advent of check conversion and check image exchange, making them more compatible with a payment hub that relies on electronic messaging. It is striking that the enterprise payments vendors have largely left the check field to specialists such as Carreker and Metavante, perhaps seeing it as a shrinking opportunity.

However, there is growing debate within the banking community about the proper strategy for check clearing, whether it be through the ACH or image exchange networks. Slow acceptance of check images has led to the printing of a growing number of substitute checks, which can be more expensive to process than the original paper checks. As a result, some top banks, such as Bank of America, are pushing an initiative called "best clearing," which would move the industry to an "image on demand" model. Instead of all checks being converted to images and pushed through image exchange networks, best clearing would allow them to be converted to ACH transactions, with the images available on demand through one or more central image archives. The advantage of this system is that it would allow the collecting bank (where the check was originally deposited) to avoid paying for substitute checks; if a paying bank refused to accept images, the collecting bank could simply convert the check to an ACH and send it that way.

Best clearing is still quite controversial, and actually increases the uncertainties in the check market, because it is no longer clear that check image exchange will become the dominant method of check clearing. To avoid the risk of adopting the wrong strategy, many banks will want to hold back and see which model wins out. An enterprise payments solution that supported both check conversion and check image exchange could be an attractive option for these banks, allowing them to take advantage of both alternatives without being overly committed to either. In this way, we believe that enterprise payments will be more relevant to the U.S. market in the near future.

## **ESSENTIAL GUIDANCE**

The enterprise payments market is evolving quickly, and in five years the business case for enterprise payments will be very different from what it is today. For this reason, it is important for both banks and vendors to take the long view, and plan strategy under the assumption that cards, retail payments, and checks will be a critical part of future enterprise payments deals.

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## **Actions for Financial Institutions**

For financial institutions in the United States, this long view means greater attention to enterprise payments technology as a shared resource for both the retail and wholesale sides of the bank. Already, payments councils are bringing together executives from all areas of the bank to coordinate strategy; the next step is to go from strategy to execution, which will require enterprise payments technology in the form of a payments hub and/or payments database. Unless they can actually bring together their payments infrastructure in a coordinated way, banks will have difficulty executing enterprise payments strategy. Key challenges such as best clearing will require a collaborative effort from the ACH and check processing teams, and a common infrastructure that can adapt to changing market conditions.

For all banks, retaining corporate banking business will require rethinking the terms of competition. Locking customers into proprietary interfaces and front-end systems will no longer be viable as banks seek to move beyond simple payment processing into helping businesses integrate their financial supply chains. Instead, open interfaces, common standards, and flexible processing systems will be necessary to allow the banks to work with all of the different companies with which a corporate customer trades. Legacy processing systems are simply not built for such an environment; at the very least, they will need to be placed behind an enterprise payments system that can act as a common point of integration.

The key challenge will be funding the necessary infrastructure; for banks that are accustomed to driving their technology spending through the operational silos, this will require giving the payments council real spending authority and budget, not just a strategy and planning role. The silos will correctly perceive this shift as a threat to their autonomy and prerogatives, requiring pressure from the CEO, CFO, CIO, and CTO to overcome. Otherwise, technology investments will continue to be driven by the priorities of the silos, and will not support the collaboration needed to capture opportunities for revenue growth and cost savings.

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## **Actions for Vendors**

Enterprise payments vendors will need to extend their product lines to encompass areas such as cards and checks, which may not have much market demand today but will be important in a year or two. The more problems an enterprise payments solution can solve, the larger its target market is. A key problem retarding the growth of the market is an insufficiently compelling business case. Vendors must broaden their focus to address this issue.

Vendors must also expand their focus from purely electronic payment types to imaging and document management. The enterprise payments solution of the future must be able to handle the documentation surrounding a payment, as well as the payment itself, to appeal to corporate customers that rely on that documentation (e.g., the remittance advice) for their reconciliation and accounting processes. Although investments in check image management may seem to have a short life span, in fact they can be leveraged for many other types of paper documents as well, allowing the bank to provide a greater array of services.

Success for vendors is naturally tied to the success of their banking customers. To the extent that vendors can solve a wider range of payments problems, they will be in a better position to help their customers grow their businesses, and to capture the increased technology spending that will result.

## **LEARN MORE**

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### **Related Research**

- *Top 10 Strategic Initiatives for 2006: Bankers Need to Make Better Decisions* (Financial Insights #FIN1718, January 2006)
- *Will SEPA Pave the Way Toward Enterprise Payments?* (Financial Insights #FIN1708, December 2005)
- *U.S. Check Transaction 2004–2009 Forecast and Analysis* (Financial Insights #FIN1704, December 2005)
- *Dynamic IT and the Integrated Banking Enterprise* (Financial Insights #FIN1702, December 2005)
- *U.S. Payments 2005–2009 IT Spending Forecast and Analysis* (Financial Insights #FIN1699, December 2005)
- *U.S. General Purpose Card 2005–2009 Spending Forecast and Analysis* (Financial Insights #FIN1692, December 2005)
- *Payments Fraud Management: Analysis Beyond the Transaction* (Financial Insights #FIN1640, August 2005)
- *How to Get to the Promised Land: Alternative Pathways to Enterprise Payments* (Financial Insights #FIN1626, July 2005)
- *Outsourcing Payment Processing: Asia Gets Interesting* (Financial Insights #FIN1583, March 2005)

- *Check 21 at the Crossroads: Shakedown or Shakeout?* (Financial Insights #FIN1578, March 2005)
- *Top 10 Strategic Initiatives for 2005: Banking on IT More Than Ever* (Financial Insights #FIN1558, January 2005)
- *Enterprise Payments: Assessing the Concept* (Financial Insights #FIN1527, September 2004)
- *Time for a Change? Payment Systems Need a Rethink* (Financial Insights #FIN1520, August 2004)
- *Hinge Technologies for the Dynamic Enterprise* (IDC #31371, May 2004)

## Methodology

The vendor profiles in this report were compiled through one-on-one interviews with the vendors themselves and with other market participants such as banks or services firms. The ratings in Tables 2–4 were arrived at based on the author's subjective assessment of the capabilities of each vendor in each area. Each vendor was given an opportunity to review its ratings in context, although the final score was determined solely by the author. The first column in Table 2, "feature/function" is a weighted average of the scores for Tables 3 and 4 using the weights listed in Table 5.

**TABLE 5**

### Weights for Feature/Function Attributes

| Attribute             | Weight | Rationale   |
|-----------------------|--------|---|
| Payments acquisition  | 2      | High market demand for corporate payment front ends makes this an important component   |
| Payments hub          | 3      | Most important capability for an enterprise payments solution; the hub is what enables integration of different payment systems.  |
| Payments database     | 1      | Although it is important to provide integration with a database, most banks will prefer to build their own  |
| Fraud/risk management | 2      | Can be a competitive advantage, but many banks will buy this from a specialty vendor  |
| Cards                 | 1      | Low market demand currently; will grow, however   |
| Check                 | 1      | Low market demand; method is declining in those markets where it still exists   |
| ACH                   | 2      | Growing importance in wholesale as well as retail payments  |
| Wire/RTGS             | 3      | Area of greatest inefficiency (and hence opportunity) in most banks; this is where many of the current deals are focused; in Europe, growing emphasis on quicker settlement times |
| Total                 | 15     |   |

Source: Financial Insights, 2006

When weighted averages or raw scores are converted into circles, an open circle is a 1.0–1.4, a half circle is a 1.5–2.4, and a whole circle is a 2.5–3.0.

For the comparison chart in Figure 2, the vendors were positioned along the y-axis (product competitiveness) on the basis of the feature/function score. A weighted average of the scores in Table 2 was used to position the vendors along the x-axis (capability to execute). The weights used are as listed in Table 6.

**TABLE 6**

**Weights for Capability to Execute Attributes**

| Attribute              | Weight    | Rationale   |
|------------------------|-----------|---|
| Feature/function       | 3         | A more comprehensive offering is very important in getting the initial meeting with a bank.   |
| Scalability            | 3         | For payment systems, the ability to scale to millions of transactions a day is critical.  |
| Integration capability | 3         | Because enterprise payments is a form of enterprise application integration (EAI), integration capability is a key requirement.   |
| Platform support       | 2         | It is important to support a range of platforms, but support for a variety of Unix flavors and J2EE is usually sufficient.  |
| Architecture           | 2         | An advanced technical architecture will provide a solution with a long shelf life; however, the most advanced technologies are also unproven, which can be a particular liability when dealing with conservative bank IT departments. |
| Market coverage        | 1         | Because most deals today are limited in scope, niche providers can be very successful. Over time, the importance of this attribute will increase.   |
| Geographic coverage    | 1         | The market is large enough that it is possible to be successful playing in just one region (particularly if that region is Europe).   |
| <b>Total</b>           | <b>15</b> |   |

Source: Financial Insights, 2006

**Appendix: Provider Profiles**

Note: To allow fair comparisons of companies that are pure-play enterprise payment providers with those that have other substantial lines of business, the profiles show the revenue, employees, and clients specific to enterprise payments in parentheses after the whole-company statistics. The comparison graph in Figure 2 is based on enterprise payments revenue *only*. Where exact figures were not provided, Financial Insights has estimated amounts based on industry averages.

**ACI Worldwide (www.aciworldwide.com)**

Figure 3 gives a brief overview of ACI Worldwide.

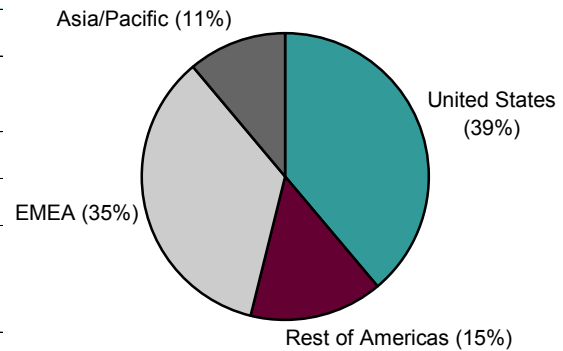
**FIGURE 3**

ACI Worldwide at a Glance

**Firm Profile**

|                              |  |
|------------------------------|--|
| # of employees               | 1,730 (1,560)  |
| # of clients                 | 810 (670)  |
| # of clients non-U.S. (est.) | 486 (469)  |
| Headquarters                 | Omaha, Nebraska  |
| Revenue (FY05, \$M)          | 313.2 (281.9)  |
| Ownership                    | Public (division of Transaction Systems Architects Inc.) |
| Date founded                 | 1975   |

**Distribution of Clients by Region, 2005**



**Market Coverage**

|                       |   |
|-----------------------|---|
| Payments acquisition  | X |
| Payments hub          | X |
| Payments database     | X |
| Fraud/risk management | X |

Note: Revenue, employees, and clients specific to enterprise payments are shown in parentheses after the whole-company statistics.

Source: Financial Insights, 2006

**Key Clients**

Bank of America, JPMorgan Chase, Citibank, Wachovia, CIBC, Toronto Dominion (TD) Bank, Royal Bank of Scotland, Barclays, ABN AMRO, ING, Fortis, PNC Bank

**Key Partnerships**

IBM, HP, Sun, Stratus, NCR, Diebold, Wincor, Microsoft, Oracle, Unisys, Visa, MasterCard

## Architectures

- Linux (ACI eCourier only)
- HP Nonstop (BASE24, BASE24-es, ACI Proactive Risk Manager Server)
- IBM z/OS (BASE24-es, ACI Payments Manager)
- IBM AIX (BASE24-es, ACI Payments Manager, OpeN/2)
- Sun Solaris (BASE24-es, ACI Proactive Risk Manager Server, ACI Payments Manager, ACI Retail Commerce Server)
- HP UX (BASE24-es, OpeN/2)
- Unix variants, including zLinux (OpeN/2)
- Windows (ACI Proactive Risk Manager Client, ACI Proactive Risk Manager Server, ACI Retail Commerce Server, OpeN/2)

Hardware platforms supported include HP Nonstop, IBM zSeries, Sun Fire, IBM pSeries, HP 9000, HP Integrity, and Intel.

Middleware standards supported include .NET, J2EE, IBM WebSphere, FTP, ODBC/MP, Net8, WebGate, WebLogic, Tomcat, Jrun, and BEA Tuxedo. ACI Worldwide also uses a proprietary middleware standard called XPNET.

## Products/Product Components

- **BASE24:** Acquires and switches transactions from the following retail channels: ATM, EFT/POS, credit/debit cards, online banking, telephone banking, and branch teller systems
- **BASE24-es:** Stands for "enterprise services" (This is ACI's next-generation retail payment engine, designed to run on Unix variants such as Sun Solaris, AIX, and HP UX as well as closed platforms such as HP Nonstop and IBM zSeries. BASE-24es is built for extensibility as new channels such as mobile or Internet become important. It also adds support for credit and signature debit cards to the BASE-24 capabilities. In May 2006, ACI announced an enhancement to BASE24-es to support the United Kingdom's Faster Payments initiative, which is intended to shorten the processing cycle for electronic payments. ACI Worldwide intends for BASE24-es to replace its legacy BASE24 system and is working with its customers to facilitate the transition.)
- **OpeN/2:** Obtained through ACI's acquisition of S/2 on July 29, 2005 (This product acquires and switches transactions from the following retail channels: ATM, EFT/POS, credit card, stored-

value cards, check, and Internet. It is designed to run on low-cost platforms such as Windows and Unix variants, including zLinux. In the long term, it will be converged with BASE24-es.)

- **ACI Wholesale Payments System:** Formerly the Money Transfer System (MTS) marketed by sister company IntraNet; rebranded when the two companies combined (It handles back-office clearing and settlement for wholesale payments and interfaces with RTGS systems, central banking systems, net settlement systems, messaging systems such as SWIFTNet, clearinghouses, internal systems, and third-party banking applications. It combines several elements found in Figure 1, including a payments hub, risk and fraud management, security, and data transformation. ACI Worldwide announced on April 19, 2006, a version of this product enhanced to support SEPA implementations with specific support for prieuro, credeuro, and Pan-European direct debits as well as proprietary formats.)
- **ACI Payments Manager:** Handles back-office processing and settlement of retail payments, specifically card payments (It includes some of the functions of the payments hub and payment database shown in Figure 1, but only for card payments. It also supports card issuance and management.)
- **ACI Proactive Risk Manager:** Provides rule- and neural network-based fraud detection (There are specific versions of the product for enterprise risk [primarily identity theft and account takeover], debit and credit card fraud, merchant fraud [i.e., fraud perpetrated by a merchant against its acquiring bank], private-label card fraud [similar to merchant fraud], and money laundering.)
- **ACI Monitoring and Management System:** Provides centralized monitoring of payment applications
- **ACI Communication Services — Network Express:** Supports connectivity between distributed payment systems, with specific modules for file transfer, file management, data transformation, message management, security, and third-party access

### Financial Insights Opinion

ACI Worldwide is one of the dominant providers in the ATM and EFT/POS space, and this is where it is strongest. After the integration of IntraNet and InSession Technologies that was announced on October 5, 2005 (all three firms previously having been owned by the same company, Transaction Systems Architects), a strong wholesale payments system and connectivity technology were added to the mix. In addition, on July 29, 2005, ACI Worldwide completed its acquisition of S/2, which had its own retail payment processing system

and also contributed technology to the ACI Communication Services — Network Express product.

As a result, ACI now has one of the most complete offerings in the group of companies under review, at least on paper. However, it now has several duplicative payment acquisition and processing systems, each with its own client base that will need to be tended. This situation places ACI at a disadvantage against competitors such as Clear2Pay, which have developed their systems from scratch. BASE24-es is intended to be the single solution toward which the others will converge, but this will take time, slowing ACI's entry into the marketplace. It remains to be seen how well the various technologies and systems will work together; because stability and reliability are crucial to success, this may complicate ACI's efforts to go to market with a complete solution. ACI is currently in a strong position, but it will have to execute well to maintain its lead.

**Bottomline Technologies (www.bottomline.com)**

Figure 4 gives a brief overview of Bottomline Technologies.

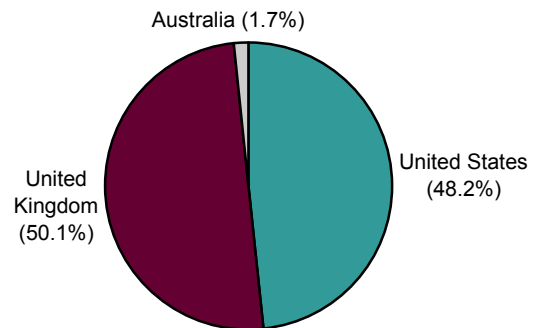
**FIGURE 4**

Bottomline Technologies at a Glance

**Firm Profile**

|                              |                           |
|------------------------------|---------------------------|
| # of employees               | 500 (80)                  |
| # of clients                 | 9,000 (300)               |
| # of clients non-U.S. (est.) | 4,500 (200)               |
| Headquarters                 | Portsmouth, New Hampshire |
| Revenue (FY05, \$M)          | 96.5 (30.0)               |
| Ownership                    | Public                    |
| Date founded                 | 1989                      |

**Distribution of Revenue by Region, 2005**



**Market Coverage**

|                       |   |
|-----------------------|---|
| Payments acquisition  | X |
| Payments hub          | X |
| Payments database     | X |
| Fraud/risk management | X |

Note: Revenue, employees, and clients specific to enterprise payments are shown in parentheses after the whole-company statistics.

Source: Financial Insights, 2006

**Key Clients**

National City Corp., Lloyds TSB, Bank of America, JPMorgan Chase, Standard Chartered Bank, UMB Financial, State Street Bank, Fifth Third Bancorp, Franklin Templeton, Raymond James, Fidelity Investments, GMAC, Travelex

**Key Partnerships**

Business Objects, Oracle

## **Architectures**

- **Operating systems:** Microsoft Windows XP Client; Microsoft Windows Server System; Unix variants, including IBM AIX and Sun Solaris
- **Hardware platforms:** IBM, Sun, Intel
- **Middleware standards:** MQ, J2EE, IBM WebSphere, WebLogic, Tomcat, .NET through SOAP

## **Products/Product Components**

WebSeries Enterprise Payments Platform is a consolidated platform for payment initiation and tracking, with support for ACH, RTGS, check printing and management, and fraud detection. It was rebranded from the WebSeries Electronic Banking Platform.

## **Financial Insights Opinion**

Bottomline Technologies has its roots in the corporate treasury market, with an emphasis on accounts payable. It is therefore strongest in payment acquisition, focusing on the most common corporate payment types, which are ACH, check, and wire. The firm sells directly to banks as well as their corporate clients. In the context of Figure 1, Bottomline would supply software to support the Internet access touch point as well as some payment hub and payment database functionality, principally around routing, tracking, and reporting on corporate payments. Fraud detection and security are also supported.

With a client base of more than 9,000, of which 3,000 use its software through a hosted model, Bottomline has the widest customer base of any company in this survey. Its focus on the front end gives it a strong position in today's enterprise payments market, where the main concern is serving corporate customers more effectively. However, only 300 of these clients are banks using the software for enterprise payments.

Bottomline's offerings can only mask duplication and inefficiency in the back office, not resolve it. They are a first step, not the whole solution. Any financial institution investing in a front-end solution such as this will still have to grapple with its back-office infrastructure down the road.

## Clear2Pay ([www.clear2pay.com](http://www.clear2pay.com))

Figure 5 gives a brief overview of Clear2Pay.

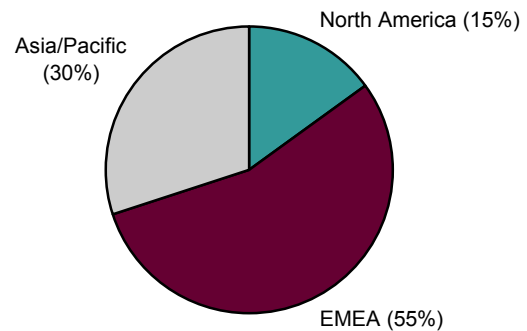
### FIGURE 5

#### Clear2Pay at a Glance

##### Firm Profile

|                       |            |
|-----------------------|------------|
| # of employees        | 220 (150)  |
| # of clients          | 40 (10)    |
| # of clients non-U.S. | 10 (9)     |
| Headquarters          | Belgium    |
| Revenue (FY05, \$M)   | 14.0 (9.8) |
| Ownership             | Private    |
| Date founded          | 2001       |

##### Distribution of Clients by Region, 2005



##### Market Coverage

|                      |   |
|----------------------|---|
| Payments acquisition | X |
| Payments hub         | X |
| Payments database    | X |

Fraud/risk management

##### Notes:

The Open Payment Framework has also been used to handle P2P and remittance payments.

Revenue, employees, and clients specific to enterprise payments are shown in parentheses after the whole-company statistics.

Source: Financial Insights, 2006

##### Key Clients

National Australia Bank, DnB NOR (Norway), KCS (Thailand), ANZ, ING, Wells Fargo

##### Key Partnerships

IBM, HP, Oracle, Unisys

## Architectures

- Clear2Pay uses a service oriented architecture (SOA) based on open standards such as Business Process Execution Language (BPEL), Web Service Definition Language (WSDL), and eXtensible Markup Language (XML), which allows its various components to interoperate with components supplied by other vendors. This interoperability extends to the Business Process Manager (BPM) module, which uses generic components that are compatible with any other BPM package that supports BPEL.
- The Bank Payment Hub is built using J2EE and runs on any compatible application server. It is not native to any hardware platform.

## Products/Product Components

- **Bank Payment Hub:** A centralized payment infrastructure based on an Open Payment Framework; consists of three modules:
  - **Customer Interaction (front office):** This module captures payment instructions through two channels: a Web-based interface and a file transfer system. Both channels use a common validation engine that checks for errors, balances debits and credits, and performs other tests. The online interface can act as a payments dashboard, showing the status of payments in process and allowing customers to fix problems themselves. The file transfer system can convert payment instructions from the format used by the corporate customer to that used by the destination processing system. The module also can provide notifications and acknowledgements. Remittance advice transmission is officially supported but requires additional process support from the sender, sender's bank, receiver, and receiver's bank.
  - **Order Management (middle office):** This module consists of a BPM running various generic components that can be reused for all types of payments. These components include the following:
    - **Parsers/Inbound Adapters:** Converts incoming payment instructions from acquiring applications not provided by Clear2Pay to a common internal format, which is bank defined
    - **Receive Payments:** Classifies payments based on origin, payment type, and data content

- **Archive Payments:** Stores payment instructions for later retrieval; can be moved to long-term storage according to bank policies
- **Validations:** Comes with standard routines to catch duplicate items, validate the registered agreements, and validate compliance with the payment system rules; additional validation business services can be created for specific payment types to enforce other rules
- **Repair:** Presents exceptions to either bank staff or the customer, depending on the type of error encountered, the type of payment, and any terms or conditions; gives the customer the ability to fix errors directly, increasing the straight-through processing rate
- **Limit Check:** Allows the bank to set a limit on total payments over a defined period
- **Balance Enquiry:** Interfaces with a balance check system to check that sufficient funds are in the account to be debited, and lock those funds prior to settlement
- **Warehouse:** Allows payment instructions to be stored for later execution
- **Notification Service:** Can send notifications to bank staff or customers of events in the system, including errors and transactions requiring manual input
- **Determine Routing:** Routes a payment instruction to a particular back-office system depending on bank-defined parameters, which may include origin, destination, time sensitivity, amount, and the ability of the receiving bank to accept certain types of payments, such as check images
- **Submitters/Outbound Adapters:** Interface between the Order Management System and the Payment Execution Systems; can handle both batch and individual transaction models
- **Payment Execution (back office):** This module includes the BPM, Parsers/Inbound Adapters, Validation, and Repair modules for implementations that do not use the Order Management module; also includes modules for execution functions, including:
  - **Fee Determination:** Both own and external charges that must be included in the settlement

- **Determine Routing and Settlement Agents:** The agents that need to be involved for settlement to take place, as well identification of the settlement accounts
- **Verify Nostro Receipt:** For risk management purposes, allows processing to hold until confirmation is received that funds have actually been deposited in the bank's nostro account at the other end of the transaction
- **Generate Pre-Advice on Incoming Transactions:** Allows notification of the customer of an incoming funds transfer as early as possible; can be delivered through SWIFT message, email, or Internet portal
- **Generate Accounting Entries:** Determines the suspense account, and generates related FX accounting entries and debit and credit accounting entries
- **Generate Routing and Settlement Instructions:** Ensures proper communication with the external clearing and settlement systems

### **Financial Insights Opinion**

Clear2Pay is technologically more advanced than most of its competitors, but less mature. Any bank implementing Clear2Pay may have to do extensive custom work depending on the complexity of its internal payments environment, although this work will be less expensive than it would be with a less open platform.

Clear2Pay originally got its start in person-to-person funds transfers through its PayPark product, and also offers products to assist with credit card chargebacks and card processing. As such, it has no existing base of corporate banking business and must develop it from scratch using partners such as IBM, HP, and Unisys. Although competitors may have less sophisticated and flexible technology, they have more referenceable clients and may appear to be safer choices to many banks. However, a bank that is committed to SOA and wants a forward-looking payments infrastructure will want to consider Clear2Pay.

**Dovetail Systems (www.dovetailsystems.com)**

Figure 6 gives a brief overview of Dovetail Systems.

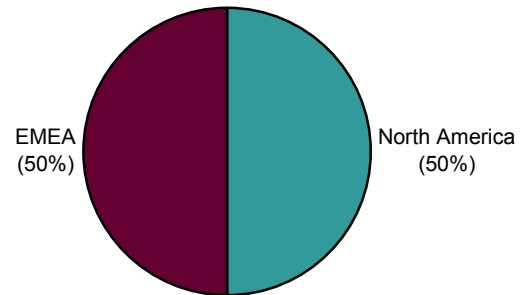
**FIGURE 6**

Dovetail Systems at a Glance

**Firm Profile**

|                               |                       |
|-------------------------------|-----------------------|
| # of employees                | 33 (33)               |
| # of clients                  | 2 (2)                 |
| # of clients non-U.S.         | 1 (1)                 |
| Headquarters                  | Fairfield, New Jersey |
| Revenue (FY05, \$M)<br>(est.) | 2.0 (2.0)             |
| Ownership                     | Private               |
| Date founded                  | 1999                  |

**Distribution of Clients by Region, 2005**



**Market Coverage**

|                      |   |
|----------------------|---|
| Payments acquisition | X |
| Payments hub         | X |
| Payments database    | X |

Fraud/risk management

Note: Revenue, employees, and clients specific to enterprise payments are shown in parentheses after the whole-company statistics.

Source: Financial Insights, 2006

**Key Clients**

Global German Bank

**Key Partnerships**

LogicaCMG, HP, Oracle, BEA Systems, IBM, Sun Microsystems

**Architectures**

J2EE Application Server (IBM WebSphere, WebLogic) running on Windows, Linux, and Sun Solaris

## Products/Product Components

- **Q5 — ENVOY:** This payments hub is aimed primarily at wholesale payments. It has a multientity structure, which supports global banks that have separate legal entities in various countries. It also supports multicurrency transactions as well as timed payments, which can be scheduled for a specific time or triggered based on another event. Also included are the following components:
  - **GUI:** A Web-based front end for entering, researching, and repairing payment transactions
  - **Party Search Engine:** Helps locate information about particular payors or payees that have used the system
  - **Fedwire and CHIPS gateways:** Process incoming and outgoing transactions using the Fedwire and CHIPS RTGS systems
  - **Messaging Gateways:** Process incoming and outgoing messages using the SWIFT messaging system as well as other networks as needed
  - **Payments Formatter:** Manages the specific payment formats and rules used by those clearing systems that employ SWIFT as the delivery network (EBA, RTGSPlus, TARGET)
- **CorpPay:** Acquired from Consise, this adds a corporate payment front end to the system, allowing corporate customers to generate payment files, check their status, and repair problems.
- **PayAssure:** Also acquired from Consise, this is a high-volume ACH processing system that the company claims can process as many as 2.5 million ACH payments per hour.

## Financial Insights Opinion

Like Clear2Pay, Dovetail Systems uses a modern service oriented architecture for better interoperability with existing legacy systems. It has a channel partnership with services firm LogicaCMG, which is integrating the Dovetail software into its own branded enterprise payments solution.

Dovetail has two clients, both multinational banks. One is based in the United States and one is based in Germany. Unlike most of the companies profiled here, Dovetail has actually been engaged to *replace* the German bank's wholesale high-value payment systems, not merely wrap them in new technology. The project was originally scheduled to have been completed by mid-2005, but only phase 3 of the multiphase project was completed by then. Phase 1 (June 2004)

brought up the Liquidity Management and Fedwire gateway components; phase 2 (September 2004) brought up the Party Search Engine component, and phase 3 (June 2005) added the SWIFT interface, the payment scheduling engine, and automation of direct debit processing.

For the United States-based international bank, Dovetail has implemented a complete U.S. dollar clearing system covering both Fedwire and CHIPS.

Although these clients are certainly evidence that Dovetail can provide a scalable, robust solution for high-value payments, Dovetail will need to add many more to compete with more established firms such as ACI Worldwide and Fundtech. Its problems are similar to those of Clear2Pay, although Clear2Pay has a more comprehensive solution. (The Consize acquisition narrows the gap somewhat.) It has technology that is superior to the more established competitors, but lacks enough of a customer base to give banks confidence in its ability to deliver. Are two major banks about all it can handle, or can it do more? How much more? How well does its software function in a heterogeneous environment?

We question whether Dovetail can succeed for long on its own, and we suspect it will end up being acquired by a company such as LogicaCMG or Oracle that is seeking to penetrate the enterprise payments market.

**Fundtech (www.fundtech.com)**

Figure 7 gives a brief overview of Fundtech.

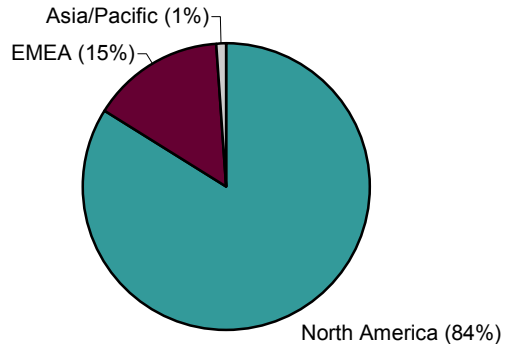
**FIGURE 7**

Fundtech at a Glance

**Firm Profile**

|                       |                         |
|-----------------------|-------------------------|
| # of employees        | 620 (125)               |
| # of clients          | 700 (200)               |
| # of clients non-U.S. | 30 (30)                 |
| Headquarters          | Jersey City, New Jersey |
| Revenue (FY05, \$M)   | 72 (35)                 |
| Ownership             | Public                  |
| Date founded          | 1993                    |

**Distribution of Clients by Region, 2005**



**Market Coverage**

|                       |   |
|-----------------------|---|
| Payments acquisition  | X |
| Payments hub          | X |
| Payments database     | X |
| Fraud/risk management | X |

Note: Revenue, employees, and clients specific to enterprise payments are shown in parentheses after the whole-company statistics.

Source: Financial Insights, 2006

**Key Clients**

Citigroup, HSBC, HVB Bank Austria, Wachovia, Bank Atlantic, Regions Bank, Commerce Bank

**Key Partnerships**

Sun, BEA, IBM, Microsoft, Prime Associates

**Architectures**

- Windows (PAYplus USA and OmniPAY) and Unix variants (Global PAYplus) running on Sun, IBM, HP, and Wintel
- Supports J2EE, IBM WebSphere, and BEA Tuxedo

**Products/Product Components**

- **Global PAYplus:** This multicurrency, real-time back-office payments system for wholesale payments handles clearing and settlement, FX pricing, payments scheduling, liquidity

management and funds control, and regulatory compliance. A rules engine provides flexibility for changes in business requirements and also supports fee determination. A notification engine provides customers and bank staff with notices of events that have completed.

- **PAYplus USA:** Despite sharing a brand name with Global PAYplus, this is a separate product, geared specifically toward the demands of the U.S. market. It focuses primarily on corporate payments, with support for Fedwire, SWIFT, CHIPS, book transfers, and Fedwire Securities Transfers. Intraday liquidity management is supported, including bilateral and multilateral positions. It is designed to integrate directly with other back-office systems, tying them together in a single user-friendly Windows or browser-based interface. It does not replace the back-office systems, as does Global PAYplus.
- **PAYplus RTGS:** This multicurrency, rules-based payment system is specifically designed to manage a bank's SWIFT, cross-border, central bank RTGS, and net settlement payment activity. Like PAYplus USA, it is designed to be easy to use, with a Windows NT-based user interface sitting on top of a three-tier, Unix-based client-server architecture. Intraday liquidity is a primary focus of the system, which allows the bank to manage its euro positions at networks such as TARGET, EBA, EURO1, and CHAPS. It is focused on the European market.
- **OmniPAY:** This Web-based front end is focused on payments acquisition from corporate clients. Primary functions include receipt of bulk payment files, routing of payment instructions to the appropriate back-office system, payment scheduling, and workflow.

### **Financial Insights Opinion**

Fundtech has a broad client base, with more than 200 banks using the firm's products for some sort of enterprise payments activity. Most of this is with PAYplus USA at midsize banks, although the company is experiencing rapid growth in Europe with its Global PAYplus product.

Fundtech is somewhere in the middle of the pack with regard to technology — not as advanced in its use of J2EE and SOA as Clear2Pay or Dovetail but more advanced in its use of a multitiered architecture than ACI Worldwide.

Although Fundtech's support for corporate payments is excellent, its lack of retail payments coverage makes it less suitable for a bank that is seeking to place all of its payment systems, both retail and wholesale, on a single integrated platform.

## TietoEnator ([www.tietoenator.com](http://www.tietoenator.com))

Figure 8 gives a brief overview of TietoEnator.

### FIGURE 8

#### TietoEnator at a Glance

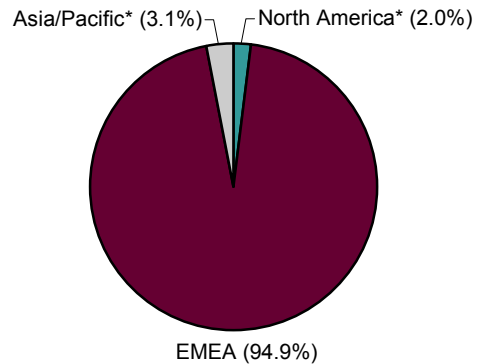
##### Firm Profile

|                              |                |
|------------------------------|----------------|
| # of employees (est.)        | 2,119 (1,060)  |
| # of clients (est.)          | 350 (175)      |
| # of clients non-U.S. (est.) | 350 (175)      |
| Headquarters                 | Espoo, Finland |
| Revenue (FY05, \$M)          | 303 (151)      |
| Ownership                    | Public         |
| Date founded                 | 1968 (Tieto)   |

##### Market Coverage

|                       |   |
|-----------------------|---|
| Payments acquisition  | X |
| Payments hub          | X |
| Payments database     | X |
| Fraud/risk management | X |

##### Distribution of Clients by Region, 2005



\* The percentage of clients in North America and Asia/Pacific is estimated based on 5% of total revenue being outside of Europe.

##### Notes:

Clients, employees, and revenue are for financial services business only. Financial Insights estimates 50% of financial services business is related to enterprise payments.

Revenue, employees, and clients specific to enterprise payments are shown in parentheses after the whole-company statistics.

Source: Financial Insights, 2006

##### Key Clients

Royal Bank of Scotland, Sampo Bank, Nordea, DnB NOR, BHF-Bank, Swedbank, Svenska Handelsbanken, Dexia BIL, Banesto

##### Key Partnerships

IBM, BEA Systems for technology

##### Architectures

Developed in Microfocus Workbench; original platform was MVS; now platform independent; will run on z/OS, OS/390, MVS, Unix (AIX, HP-UX, Solaris), Linux, and Windows 2000/2003 Server; clients may be Windows, J2EE, or .NET; database is DB2

## Products/Product Components

ProPay was developed in the late 1990s and supports high-value payments, a SWIFT interface, and file transfers. Multibank capability permits multientity implementations throughout an international network. The core payment system runs on CICS or IMS and DB2, while auxiliary components operate on a J2EE architecture. The development environment may enable portability to Unix platforms, but it is untested. ProPay has Web-based user interfaces and handles inward, outward, and standing orders.

Additional modules:

- **ProDirectory** (must be run with ProPay): Provides essential processing rules, product definitions, fee schedules, and so on
- **ProSwitch**: The messaging and file-handling communications interface; can be installed (as at ING-BHF) independent of ProPay
- **ProRepair**: An automated tool to examine inbound and outbound messages for potential repair to improve straight-through processing rate (This application runs in Windows.)
- **ProScan**: A tool for scanning transactions and accounts to detect potential terrorist financing
- **ProLiquidity and ProMatch**: Tools for banks to provide servicing to corporate customers; include intraday liquidity management and automated matching

## Financial Insights Opinion

TietoEnator has a major strategic objective to break out of the Scandinavian market. Its important new customer base in the United Kingdom, Italy, and Eastern Europe shows progress toward this goal, but the company is still dominated by its Scandinavian revenue (90%) and clients. TietoEnator appears to have a particular strength in longer-term transformation engagements with major banks involving a significant amount of migration and integration with legacy systems. Its collaboration with Nordea and others in implementing East European M&A strategies provides evidence of the company's openness to a more proactive partnership approach. It has paid particular attention to performance and scalability issues and should be well placed to offer cost-effective solutions. However, TietoEnator's targeted approach and limited client base mean that most engagements involve a different set of modules and integration activities in a mix-and-match, best-of-breed environment rather than a standard offering. The number of new signed deals has been consistent but fairly small, and TietoEnator needs to scale up its strategy.

**Wall Street Systems (www.wallstreetsystems.com)**

Figure 9 gives a brief overview of Wall Street Systems.

**FIGURE 9**

Wall Street Systems at a Glance

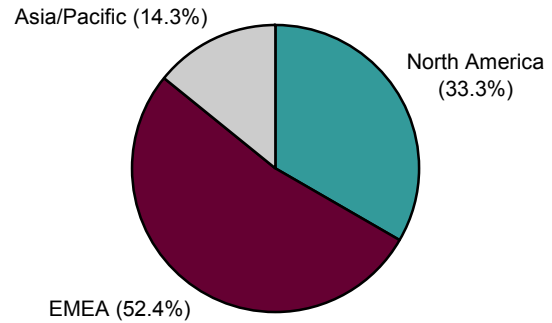
**Firm Profile**

|                               |                    |
|-------------------------------|--------------------|
| # of employees                | 270 (40)           |
| # of clients                  | 43 (32)            |
| # of clients non-U.S.         | 28 (21)            |
| Headquarters                  | New York, New York |
| Revenue (FY05, \$M)<br>(est.) | 75 (15)            |
| Ownership                     | Private            |
| Date founded                  | 1986               |

**Market Coverage**

|                       |   |
|-----------------------|---|
| Payments acquisition  |   |
| Payments hub          | X |
| Payments database     | X |
| Fraud/risk management | X |

**Distribution of Clients by Region, 2005**



Note: Revenue, employees, and clients specific to enterprise payments are shown in parentheses after the whole-company statistics.

Source: Financial Insights, 2006

**Key Clients**

Global tier 1 banks, regional tier 2 banks, multinational corporations

**Key Partnerships**

Sun, IBM, HP, Oracle

**Architectures**

- Windows XP Client, Linux, Sun Solaris, HP-UX, VMS running on Sun, IBM, or HP
- Supports .NET, J2EE, IBM WebSphere, webMethods, MQ, Mint, and Minerva

## Products/Product Components

The Wall Street System is an integrated, multicurrency global system supporting payments and securities trading. There are four major modules, or "hubs":

- **Internet Extensions Hub:** A Web-based corporate front end supporting cash management, CLS payments, order management (for securities trading), and other custom interfaces (It does not provide full support for payment generation.)
- **Global Trading Hub:** Trading, pricing, and position management tools for foreign exchange and money market trading and sales (From the enterprise payments standpoint, the most relevant component here is the foreign exchange trading.)
- **Global Risk Hub:** Manages various types of risk, including operational risk, market risk, and credit risk (It also assists with liquidity management by enabling the bank to net payments across products and value dates.)
- **Global Operations Hub:** Cash management platform for the bank (It includes components for cash management, general ledger updating, securities clearance, cash settlement, CLS, reconciliations, and confirmations.)

## Financial Insights Opinion

Wall Street Systems, as its name implies, has its roots in the securities industry and is strongest in the corporate cash management area. It recently adapted its flagship product, The Wall Street System, for bank use and has had fairly good market penetration around the globe. The company's strengths are its strong installed base and technology that is designed around open standards for high-volume processing.

Wall Street Systems does not, however, provide a complete enterprise payments solution. In particular, it does not support cards or ACH, focusing solely on corporate payments (e.g., wire and check). In addition, its front-end system is oriented more toward cash management than payments, and it lacks the features of many of the competitors' offerings. As such, Wall Street Systems is challenged to fill the gaps, and may do so through partnerships or acquisitions. None of the other companies profiled in this report considered Wall Street Systems a competitor, which suggests that its wins so far have been mainly on the cash management side of the bank, rather than in payment operations. To become a recognized competitor in the enterprise payments market, Wall Street Systems will need to sharpen its marketing focus on enterprise payments.

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## **Synopsis**

This Financial Insights report profiles the major software vendors serving the enterprise payments market. *Enterprise payments* is an umbrella term for a wide variety of initiatives aimed at centralizing control and reporting for a bank's payment systems. The enterprise payments market is complex and rapidly evolving, with a diverse set of vendors approaching it from many different angles. The market has not been growing as fast as it might because vendors have had difficulty positioning their products in a way that provides banks with a clear and compelling ROI.

According to Aaron McPherson, research director for Payments at Financial Insights and the author of the report, "The thinking of both bank executives and vendors with regard to enterprise payments tends to be constrained by past experience in particular payment silos. This leads many to miss potential opportunities for gains in revenue and cost savings. Retail payments and checks are a particular blind spot, especially in the United States, where enterprise payments has been slow to take off."

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