

2001

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Recommended Citation

Motwani, Jaideep; Mirchandani, Dinesh; and Sower, Victor E. (2001) "User perceptions of the benefits of implementing an ERP system: A case study," *Journal of International Information Management*: Vol. 10: Iss. 2, Article 1.
Available at: <http://scholarworks.lib.csusb.edu/jiim/vol10/iss2/1>

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Taking payments online: A framework for selection

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ABSTRACT

Electronic bill presentment and payment (EBPP) is usually viewed as a "killer application" in e-commerce, which will fundamentally change the way customers receive and pay their bills. While many models exist, there is a dearth of information for determining which model would best fit customer characteristics and needs. This paper examines primary models, customer requirements, bill characteristics, and customer types to develop an exploratory framework for determining which EBPP model a bill-generating firm should employ.

INTRODUCTION

According to a recent report in Gartner Group (www.gartnergroup.com) 17 billion consumer bills are generated annually in the U. S. *The McKinsey Quarterly* estimated 27 billion recurring billing transactions were executed in the United States in 1998. This consisted of 15 billion consumer-to-business transactions and 12 billion business-to-business transactions (Ouren, et al., 1998). Sources of bills received on a regular basis by consumers and businesses include: electric, gas, telephone, credit card, insurance, mortgage loans, and office supply bills (Crone, 2000; Radecki & Wenninger, 1999).

Electronic bill presentment and payment (EBPP) involves the application of web technology toward the automation of the bill presentment and payment process. EBPP is usually viewed as a "killer application" in e-commerce, which will fundamentally change the way customers receive and pay their bills (Buchanan, 1998; Crone, 2000). Many companies, financial institutions, and technology service providers are developing means of employing EBPP solutions to replace paper-based billing practices. The rapidly growing interest in EBPP can also be attributed to its potential for decreasing the processing cost of recurrent billing transactions, providing better customer service, and creating a new industry for financial service providers (Crone, 2000; Radecki & Wenninger, 1999).

The vast majority of the practitioner literature has emphasized cost saving of online payment (Ouren, Singer, Stephenson, & Weinberg, 1998). Many financial institutions, such as banks,

view EBPP as an opportunity for reducing transaction costs and extending their customer base. EBPP allows banks to continue to process existing financial transactions such as clearing checks at lower cost. However, cost saving is an unsatisfying primary motivation for many reasons. First, these cost savings are easily replicated by competitors and thus unlikely to create a sustainable competitive advantage. Second, many of these cost reductions are also accompanied by reduced entry barriers or increased market transparency further intensifying competition (Benjamin & Wigand, 1995) making it even less likely that banks will benefit from cost saving from online payment. Third, given that EBPP involves substantial and frequent incremental investments in infrastructure as well as incremental service and support, it is not even clear that EBPP will lead to a net reduction in cost.

A number of EBPP models and technical solutions have been proposed and advocated by various technology service providers such as CyberCash, CheckFree, and Transpoint. These service providers have been concentrating on convincing billers and financial institutions to adopt their particular solutions. Competition is the driving force behind the EBPP market (Henschen, 1000). By delivering outbound bills, statements and other computer-generated documents via the Web, companies are improving customer service and unlocking incremental sales with one-to-one marketing messages.

In this paper, our objective is twofold. First, we would like to better understand how EBPP model is selected. This is potentially useful to aid existing strategy formulation, to assist in the development of future strategies for similar online service such as online banking. Second, we would like to integrate the existing work on EBPP models selection into a framework for online payment.

PAYMENT MODELS

EBPP involves a process that requires the participation and cooperation between several parties. These parties include the customer, billers, financial institutions, and various billing services intermediaries. There are two key "Ps" in the EBPP process. The first "P" stands for presentment. Often referred to as electronic statement presentment (ESP), this is the simplest and most proven aspect of EBPP. Parsing statement print files, adding a layer of security and converting the bills to a Web-friendly format for viewing on the Web is a straightforward process, though some vendors have added advances and value-added features such as one-to-one messaging. The second "P" stands for payment. Consumers and businesses have paid bills via preauthorized checking, such as ATMs, telephone and direct debit for years. Many firms are already using electronic bill payment options. The bills are usually debited directly from checking accounts. The second "P" must resolve how payments are integrated with the biller's accounts receivable system.

In general, billers have three options for payment model: direct model, thick consolidator model, and thin consolidator model.

Direct Model

In the direct model, the biller hosts an EBPP solution directly or through an application service provider. The biller retains control over its customers, as they must come to the biller's Web site to pay bills. In this model, the biller is in a better position to leverage its brand and keep customers at its site for cross-selling and up-selling opportunities. Examples of billers employing the direct model include American Express (www.americanexpress.com) and NUI Corporation (www.nui.com).

From the customer perspective, this model has three major advantages. First, it is similar to paper-based bill presentment and payment, in which customers receive bills from individual billers and remit payment directly to each biller. This allows customers to use electronic bill payment without changing their bill paying habits.

Second, this model allows customers to interact directly with the biller. If a customer has questions about certain bill items, the questions can be resolved at the biller's web site without having to contact customer service representatives via other means. In addition, since the biller maintains the web site, it can incorporate advanced statement analytics into bill presentation. This facilitates meaningful customer analysis of his/her bills. For instance, an electric power company may enable customers to examine the seasonal trends of their electricity usage, thus aiding customers in budgeting.

Third, the direct model enables customers to request new services or change existing services while paying their bills. For example, an advertising banner placed at a local cable company's billing site may lead customers to add a premium channel, or a switch from one premium channel to another, at the web site. This could save firms considerable expense in their customer service divisions.

The most significant disadvantage of the direct model is that it does not provide bill consolidation. That is, customers cannot view and pay all their bills at one web site. The customer must remember to visit each biller at the end of the billing cycle. This consolidation feature may prove to be very important to a large segment of customers who prefer the convenience of one-stop bill payment.

Thick Consolidator Model

In the thick consolidator model, the biller partners with one or more third-party consolidators which collect bills from a number of different billers so payers have only one place to go to pay their bills. Consolidators in turn enlist billers and customers to participate at their sites. Thus, it is very likely that a customer can access multiple bills from different billers at one consolidator's site.

This model's success largely depends upon network externalities: how many billers and customers a consolidator can attract to its web site. This addresses the question of how a consolidator can effectively market itself to both customers and billers. Some major banks and Internet portal sites are primary candidates for playing the consolidator role due to their existing customer base and/or technological infrastructure.

The thick consolidator model is attractive to customers because customers gain the advantage of being able to pay bills from a single site. Customers do not have to sign up for service at each biller's web site. They only have to sign up once at the consolidator's site and select the billers with whom they wish to interact. An added advantage of this model is that customers now only have to contend with the learning curve for one user interface. Bills rendered from different billers share the same user interface because they must all follow the technology vendor's standards.

A number of drawbacks exist with the thick consolidator model. First, the bills in this model cannot be as detailed or as customized as those in the direct model. Because billers have to follow the technology vendor's standards to present bills, they may not be able to present the bill in a way that is most desirable to their customers. Second, this model lacks the ability to provide customers with direct or interactive customer service, allow customers to request new service or change existing service in real time, or perform in-depth statement analyses. Third, it is unlikely that customers will find all their billers at a single consolidator's site. If this is the case, then customers need to sign up at multiple consolidators' sites in order to view and pay all of their electronic bills, thus obviating the advantages of consolidation.

Thin Consolidator Model

The thin consolidator model is very similar to the thick consolidator model. However, there are some important distinctions between the two. The thin consolidator model follows an industry-wide standard rather than proprietary vendor standards. By using a common standard, billers are able to present their bills to multiple consolidators using a single format. Another distinction is billers only present a bill summary at the consolidator sites and maintains bill details at their own sites. When customers log on to a consolidator's site, they not only have the ability to inspect and pay all their bills but also are able to access bill details directly from the biller by following a web link on the consolidator's site.

The thin consolidator model still provides customers with a consolidated point of bill payment. In addition, it enables billers to control the content of bill presentment, incorporate interactive customer service into the billing process, and cross-sell related products and services. Implementing this model, however, implies the development of an industry-side standard. Such a standard must satisfy the diverse needs and requirements of the parties involved in EBPP. Thus, the development and adoption of this kind of standard will not be an easy task.

A FRAMEWORK FOR SELECTION

The following framework for EBPP selection integrates customer concerns, bill characteristics, and customer type to EBPP model selection.

Customer Concerns

Customer acceptance of EBPP is crucial for billers and financial institutions to provide

EBPP services successfully. However, customers may not be as enthusiastic about EBPP as billers and financial institutions wish. There are several reasons customers may be reluctant to adopt EBPP. First, though the direct costs of bill collection and processing have traditionally been borne by billers and financial institutions, recovery of these costs are implicit in the bill amount the customer pays. The financial incentives for billers and financial institutions to adopt EBPP are obvious and rather significant. On the other hand, it is not apparent to customers that they will reap significant benefits. Second, customers are used to paper bills and have few complaints about existing bill payment procedures (Campbell, 1999). These represent notable obstacles to the adoption of EBPP by customers.

Incentives for adopting EBPP are needed to entice customers to abandon their old habits and switch to a new and unfamiliar way of handling financial transactions. In addition, customers will need to overcome certain technological hurdles and their fear of doing business over the Internet, before EBPP can become ubiquitous. Therefore, identifying and understanding customer concerns is a major procedure in evaluating existing EBPP models and alternatives. Customer concerns for acceptance of EBPP involve three elements: value added, ease of use, and familiarity, trust and risk.

Value Added. As with billers and financial institutions, customers require that EBPP offer added value. This value may take the form of cost savings, convenience, and/or added functionality. Cost savings may provide an important incentive for customers to subscribe to EBPP. This is vitally important for business customers paying large numbers of recurring bills. EBPP can cut the cost of check production and processing, postage, interest lost from reduced float, and, perhaps most importantly, time spent on bill payment.

The convenience of EBPP may also be perceived to add value for customers through one-stop shopping, continuous access to billing information and efficient customer service. Customers enjoy the convenience of one-stop shopping. Customers want to take care of the maximum possible shopping needs in the minimum amount of time. Thus, it is likely that customers will evaluate EBPP systems, at least partly, based on the number of bills (a form of one-stop shopping) which can be paid in one sitting. The more web sites customers have to visit in order to pay their bills, the less convenient the system may appear. Customers will also expect to have continuous access to their bills and billing information. Customers want to be able to query the billing system on both an ad hoc and 24/7 basis.

Convenience may also take the form of archiving customer bills. Customers seek confirmation that their bill has been paid. This is currently done via bank statements with canceled checks. To handle any discrepancies with billing firms, customers maintain copies of the paid bill (to show the amount owed) and copies of the canceled check, as confirmation that the payment was received. Customers would no longer be required to maintain copies of canceled checks. The EBPP site could maintain confirmation of the amount owed, the amount paid and the payment date. Thus, customer paper retention would be reduced.

Another source of customer convenience would be the immediate feedback that a bill was paid. Currently, customers must wait until the next billing cycle to see if there were any problems in the posting of their payment. These discrepancies between what they think has been paid versus what has been credited by the billing firm must then be addressed in writing, by e-mail, in person or over the phone. This may require additional calls to the bank to verify the cashing of checks and current checking account balances. Regardless of the form of resolution chosen, the customer must spend time after paying the bill to determine if it was paid, and if not, what happened to the funds. EBPP has the potential to save the consumer time and anguish by confirming instantly (or by a delayed confirmation via e-mail) that a payment has been successfully credited.

Easy access to customer service may also be important when customers evaluate the convenience of EBPP systems. EBPP should not reduce customer access to human service representatives; customers often prefer to have human contact when dealing with billing problems. If EBPP requires all inquiries to be answered via electronic media, EBPP may appear less attractive to potential adopters. Additionally, customers will expect to be able to easily subscribe to, or unsubscribe from, EBPP services.

EBPP also has the capability to provide higher-order functionality than is available with traditional paper-based bill presentment systems. For example, an EBPP service may allow customers to track resource usage at any point between billing cycles, to perform what-if analyses based on billing history, and to review a bill with a customer service representative in real time.

Ease of use. It is likely that EBPP usage will mimic overall Internet usage patterns. Thus, while most initial adopters of EBPP may be computer literate, they will be followed by an influx of less technologically savvy subscribers, as EBPP gains popularity and enters the "mainstream" of on-line activities. This requires that EBPP service should be easy to set up, easy to access and use, and preferably be compatible with technologies with which customers are already familiar. A user-friendly interface should permit users with minimal computer skills to pay bills on-line. Furthermore, the time needed to set up and learn about the EBPP service should not be an imposition on customers. Some degree of continuity should exist between traditional paper-based bill presentment and its electronic counterpart to assist users in adapting to EBPP service.

Liquidity is another important factor. Liquidity is the ability to readily convert digital money to real money. This convertibility allows online digital money to be used offline. Liquidity reinforces the credibility of these new payment options. Moreover, the payment method should be simple and convenient enough to facilitate impulse buying. No additional hurdles should be placed in order to use it.

Familiarity, trust, and risk. As in e-commerce, such as that on selecting EBPP model, forces customers to deal with the complexity of interacting with organizations and thus face the necessity to reduce the uncertainty before taking part in the interaction (Genfen, 2000). Familiarity is an understanding, often based on previous interactions, experiences, and learning of what,

why, where and when others do what they do (Luhmann, 1979). While trust deals with beliefs about the future actions of other people (Luhmann, 1979). Familiarity in the context of e-commerce is a specific activity-based cognizance based on previous experience or learning of how to use the particular interface. Trust in online payment, on the other hand might entail providing credit card information based on the guaranty-less favorable belief that the information will not be inappropriately used in some, even unknown, way in the future. Trust is the willingness to rely on another party to take action in circumstances where such action makes one vulnerable to another party (Doney et al., 1998).

Accordingly, familiarity and trust complement each other as uncertainty-reduction methods. Familiarity reduces uncertainty by establishing a structure; trust reduces uncertainty by letting people hold relatively reliable expectations about other people's favorable future actions. Trust and familiarity, however, are not of equal importance, since trust relates to the unknown future actions of others, and these are inherently more dynamic, complex, risky and less specific. Increasing e-commerce through familiarity and trust may yet prove to be an option the industry may wish to consider. Indeed, many online retailing industry has recognized the importance of increasing website recognition, and is investing extensively in advertising in order to increase familiarity and trust of their website (Kaufman, 1999).

Three major elements of risk that exist in EBPP include uncertain privacy in transactions, the potential for electronic transaction errors, and the possibility of fraud. Each of these risks makes EBPP less attractive to customers. Billers must convince customers that these risks are minimal and that systems are in place to deal with them. For example, customers expect their transactions to be secured by some means of encryption or electronic signature. The precise method by which e-commerce related risks are reduced has not been raised by customers as an immediate concern; the fact that risk is reduced seems to be the important determinant (Sager, 2000).

Customers want to trust the parties with whom they deal. Trust may be engendered in a number of ways. Large or recognized companies are often equated with organizations a customer can trust. An organization's reputation can also help a customer decide whether to trust the company. An organization's reputation can be enhanced via the media, word-of-mouth, past experience, etc.

A customer's relationship with the organization is also a factor in trust. If the organization is one with whom the customer has had positive past experiences, the customer is more likely to trust the organization in an EBPP situation. If the customer has no experience with the organization, trust will have to be earned.

Customers also want to be certain that all parties consider the transaction valid. Thus, with a signed canceled check, the party cashing the check is acknowledging payment of the face amount of the check. Before transferring funds, customers will want to be assured that the payment will be considered legally binding before electronically transferring funds. This is not a trivial matter. While a fax is a legal document, e-mails are not considered legally binding. If the information on

an EBPP system is not considered legally binding, customers will continue to pay using checks, which are binding.

Bill Characteristics

As we see from the discussion above, EBPP models have advantages and disadvantages, from the customer's perspective. For billers and financial institutions interested in selecting EBPP solutions, the type of customers served and the nature of the recurring bills rendered to customers must be considered.

In EBPP, bill characteristics determine how often customers will visit the EBPP site, what kind of activities customers will perform, and what kind of information customers will most likely wish to see presented. The following bill characteristics would seem to play an especially important role in this regard: bill frequency, regularity, and complexity.

Bill frequency. Bill frequency refers to how often a bill is presented to the customers. For some bills, the frequency may be once a month or once a year. While for other bills, customers may need to check their billing status on a daily basis. Low frequency bills include most bills received by customers, e.g., telephone and electricity bills. An example of high frequency bills is the office supply bills for a large business customer.

For bills with low frequency, the biller does not have to update the bill very often, resulting in fewer interactions between the biller and its customers. Therefore, the thick consolidator model can provide adequate service. On the other hand, if the bill frequency is high, then the direct model or the thin consolidator model may be more appropriate.

These models allow customers to contact the biller directly and the biller can easily update the bill contents. Currently, an error in a bill requires the customer to contact the biller, usually by phone, and correct the error. Unfortunately, the biller does not have time to send a correct bill out in the current billing cycle, although the information may have been corrected in the customer's record in the biller's database. Thus, the biller will receive a payment amount that is not in sync with the amount due on the face of the bill. With EBPP, corrections to the bill can be made in the customer's record in the biller's database, and be immediately reflected in the amount due on the EBPP system. Thus, the amount due and the amount paid will be in sync, reducing future errors that may arise because of differing values on the bill and the check.

Bill regularity. Bill regularity refers to whether bills are presented to customers in a regular cycle. Customers are accustomed to receiving such bills as telephone, insurance, and mortgage at defined time intervals. However, not all billers provide regular services to their customers. Hospitals, for example, only send bills to patients after they visit the hospital. A bill from an automobile repair shop may also be unforeseeable. Such irregular or unforeseeable bills may require the biller to subscribe to an unsustainable number of intermediaries for the thin or thick consolidator model.

Since customers could belong to any one of a number of EBPP providers, billers such as hospitals, mechanics, and plumbers would have to belong to the universe of provider services.

Thus, the direct model would be more efficient for such billers. The customer would only need to provide the biller with a valid e-mail address. The biller could then e-mail the customer when the bill was ready with a URL for payment remittance information.

The direct model seems to be more appropriate for irregular bills because customers cannot predict when the bill will arrive. For regular bills, where the customer expects the bill, the thin and thick consolidator models seem to be well positioned to provide electronic billing services. Customers and billers can subscribe to a consolidator's service in advance. With cyclic bills, customers can expect bill presentment in a known time interval. Customers can visit the consolidator's site on a regular basis to view and pay multiple bills at once. Billers, knowing to which consolidators customers are subscribed, will have sufficient lead-time to format their data so that it is acceptable to the appropriate consolidator, if they have not previously subscribed to that consolidator.

It is most likely that the customer needs to be notified that their bills are ready. However, in the thick or thin consolidator model, the consolidator can handle the responsibility of alerting the customer that a bill has been presented. Thus, the consumer and consolidator can work out agreeable schedules on which the consumer will be alerted of bills. This would reduce the probability of an e-mail notification being mistaken for spam or being overlooked in a flood of e-mails.

Bill complexity. The third bill characteristic is complexity. It is difficult to define bill complexity; however, the amount of information included in a bill may serve as a surrogate measure of complexity. A simple bill may contain only a few pieces of important information. For example, a fixed-rate mortgage bill is rather simple in the sense that the only important pieces of information are the principle outstanding, bill amount, and date due.

An office supply bill for a large business would have more complexity. This bill may contain a long list of items purchased by different employees working for the company, and each item may carry different payment terms. Unlike the other two bill characteristics that are often determined by the nature of business practices, bill complexity is largely controlled by the biller. It is the biller who decides what information to include in a bill and how to organize that information.

Generally speaking, the thick consolidator model is well suited for simple bills while the direct model and the thin consolidator model can be used with more complex bills. The thick consolidator model, with its reliance on individual consolidator standards (as opposed to industry-wide standards) would require the formatting of very complex billing data for a possibly infinite number of consolidator sites. This would not only make for extremely involved programming, but would needlessly complicate helping users review their bills.

The direct model places the billing information directly on the biller's site, thus requiring only one format for the highly complex data. The thin consolidator model requires minimal information on the consolidator's site. However, it has a link to the biller's site that can provide explanations for more complex bills.

Business Type

Two distinct types of business model in EBPP can be identified: business-to-consumer (B2C) presentment and business-to-business (B2B) presentment.

B2C presentment: Brokerage firms are delivering customer statements, confirmation notices and year-end dividend notices on the Internet. Many banks are presenting account and 1099 interest statements. Insurance companies are posting policies and bills online.

B2B presentment: Many financial firms are providing vendors and partners 24/7 access to statements such as invoices, credit memos and purchase orders.

The EBPP needs of consumers are quite different from those of business customers. The convenience of being able to pay multiple bills at once is often one of the reasons for consumers to sign up for EBPP services. With electronic banking, this reduces the need to balance check-books against canceled checks to determine which bills have been paid. EBPP can also reduce per check charges some banks charge (Orr, 1998).

Business customers often already have their accounts in electronic form, so the advantage of being able to pay multiple bills electronically provides only marginal value to them. It is more important to business customers that their bills are accurate because business bills tend to be higher, and more complex, than consumer bills. Therefore, the consumer-centric notion of convenience may not apply to business customers as a decision criterion for adopting an EBPP solution.

While both consumers and business customers may have questions about their electronic bills, the frequency of help each needs in a particular area may differ. Consumers may need more frequent assistance dealing with such issues as how to use the browser, how to open electronic bills, how to select a payment method, and so on. The questions with which business customers are frequently concerned may be more bill-specific. Business customers may also have to deal with the biller more often than consumers do. Thus, consumers may prefer consolidated models of EBPP while business customers want the direct model, as exemplified in the proliferation of business-to-business Internet services.

Billers should carefully evaluate their existing customer base and the nature of their bills. The three bill presentation models are not mutually exclusive. It is conceivable that a biller may want to target different customer segments with different EBPP models. It is also possible that a biller may start with the thick consolidator model and then switch to the direct model as technology matures.

CONCLUSIONS

This article presented an integrated framework for selecting an EBPP solution based upon three factors: customer concerns, bill characteristics, and business type. A little investigation into model selection can generally greatly reduce the investment of time and money in online payment business.

EBPP gives billers an opportunity to enhance their interactions with customers and generate additional revenue streams by cross-selling other services and products. Many bill generators have outsourced the printing and distribution of their paper bills (Radecki & Wenninger, 1999). This increases their lead-time to produce inserts to the bills, which inform customers of collateral goods and services. Thus, to correspond with a specific customer via mail on an ad hoc basis, billers must have a parallel mailing system, since they may not be able to insert the specific communication in the customer's bill. With EBPP, a single distribution system to the customer will suffice for mass mailings and individual correspondence.

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