Value Positions for Financial Institutions in Electronic Bill Presentment and Payment (EBPP)

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Abstract

Business to consumer (B2C) electronic commerce has led to new relationships connecting various supply chain partners via the Internet, significantly increasing the quantity and quality of inter-organizational information flows. Banks are traditionally partners in the information and financial flow elements in the supply chain, but other non-bank parties are also getting involved in these activities.

Electronic bill presentment and payment (EBPP) may be defined as technology solutions that allow billers to present their bills electronically to companies and enable companies to initiate electronic payments [3]. EBPP may be seen, therefore, to have two main components: presentation of the bill and payment of the bill. The strength of the traditional role of banks will be seen in the second component, as billers and consolidators still do not have fiduciary powers of banks to actually pay the bill. Banks are providers of trust, play a role in insuring against credit risk, and provide an infrastructure of network relations to businesses, governments, and individuals [18].

The paper advances a structural frame to explore the possible B2C value positions that banks may undertake in the area of EBPP. Banks will need to assess where the value proposition is for them in the various business models used in EBPP, and how best to leverage their position as a neutral trusted third party (TTP), so to modulate and reduce the risk for buyer, seller and the overall marketplace. Some case studies are described with the proposed frame.

Key words: B2C, value chain, e-payment, financial services, trust

1. Introduction

The process of presenting and paying bills online instead of using traditional paper-based methods, known as electronic bill payment and presentment (EBPP), is considered one of the faster growing segments in the e-commerce market. According to market analysts IDC [25], Internet-based electronic bill volume will represent about 25% of all bill volume (excluding EDI-based bills) by the end of 2005.

Achieving the kind of growth industry analysts predict will require a major shift in consumer and business acceptance of electronic statement and bill presentment services. These services will have to adapt to the global variations in statement, billing and payment practices in each unique marketplace around the world. More importantly, these services must be delivered in a way that requires fewer behavioral changes on the part of consumers and businesses. Market research firm the Tower Group [44] found that the overall movement toward EBPP has been slowed by the number of players involved, the varied objectives of those players, and the general immaturity of technology models and solutions. Billers are typically focused on reducing billing costs and speeding funds collections as the primary reasons for implementing EBPP. Consumers, however, need more compelling reasons to convert from existing manual methods of bill review and payment, which by themselves are not difficult. In order to increase consumer acceptance, billers and banks need to work closely together to concentrate on changing customer behavior via service and marketing aspects of billing and payment.

In a context of networked relationships [18], the biggest advocates of activities such as EBPP are a number of large corporations along with the commercial banking industry. Their hope is that as e-commerce becomes more of a procedural norm, customers will routinely turn to EBPP websites to pay their bills. Most appealing to both the corporations and the consumers is a greater assuredness of being paid and timely knowledge regarding when payments will be executed.

There are also changes under way in how consumers use EBPP. First generation electronic bills have been presented via a Web portal. This process requires customers to visit a biller's or bill consolidator's Web site in order to view their bills. Second generation of EBPP solutions just coming on to the market will allow multi channel delivery including SMS, WAP, Web and direct-to-desktop via e-mail for additional convenience, security and timeliness.

Successful implementation of EBPP involves adoption by consumers, who may have to change payment habits to adopt the concept. Hirschman [24] found the following attributes to be positively associated with credit card usage: security, prestige, acceptability, transaction time, documentation, leverage potential, and transaction record. The same issues may hold true for EBPP.

2. Objectives and research question

"EBPP is by far the most active part of an online banking relationship -- it transforms static documents like bank statements into an interactive dialogue between the bank and the customer." - Jim Moran, Edocs [35].

Banks have the opportunity to create value relationships with their customers using the Internet in an economically viable manner. As seen from Table 1, banks are forecasted to realize a more active role in the EBPP segment of the market, leveraging their unique intermediary abilities in the value chain to take advantage of the EBPP benefits offered and create value for both the bank and its customers.

To make this happen, banks must be able to define what value they can create in the EBPP value chain, and how best to position themselves within the EBPP value chain for maximum benefit. Value creation goes beyond the value that can be realized by the appropriate positioning of an enterprise within an industry [40] or the exploitation of firm-specific core competencies [4].

Table 1. Expenditure on EBPP By Financial Institutions, 1999-2003. [9]

Year	*US ($ mil)*	*Europe ($ mil)*	*Asia-Pacific ($mil)*
1999	*38*	*16*	*5*
2000	*60*	*32*	*10*
2001	*120*	*44*	*17*
2002	*150*	*70*	*38*
2003	*160*	*82*	*60*

Our discussion on bank strategy for value creation recognizes that banks work as intermediaries between customers in the value network at least three ways. Banks process financial transactions and perform standard services for a wide range of customers. Banks are also professional advisors that can solve complicated customer problems. Finally, banks are also enablers of networks of interconnected flows of knowledge and financial assets linking their customers to others in the supply chain, including customers, financial markets, and competitors. All of these three ways of working can create value in the bank-customer relationship [18]. A specific research area concerns how EBPP technologies change the bank's role as transaction processor, problem solver, and network enabler. By positioning current bank involvement in EBPP into an EBPP model framework that examines the value proposition, this paper aims to assess possible value positions for banks in this space.

The research question for this paper is the following: *What are the possible value position(s) for banks in EBPP activities?*

This paper discusses the EBPP value chain components, and explores what possible business models [48] banks can utilize in the EBPP value chain to maximize the benefit to the bank. The potential differences between the positions of first and second tier banks will be discussed, in terms of customer volume, brand name "pull" and infrastructure resources. The concept of billing "pull" versus document "push" will also be discussed, in the context of first and second generation EBPP solutions.

3. Research methodology

This paper is exploratory research into EBPP value positions for banks, with a framework for analysis based on a literature review of disintermediation, trust and risk, and value networks, combined with case studies from current usage of EBPP in the market to highlight possible value positions based on drivers and benefits to both the consumers and the banks.

Due to the contemporary, contextual and dynamic nature of e-commerce, and the lack of a cumulative research base in this particular area, a case study research design was deemed appropriate [52, 5]. The specific research design is an exploratory multiple case study design. In total, three EBPP initiatives were selected in the Financial Services Industry (see section 4 for discussion of EBPP models), with six different financial service organization offerings analyzed. The case studies were sampled across geographies to reflect variability in environmental contingencies, with the explicit purpose of analytical validation [52].

The remainder of the paper is divided into four sections. First, the theoretical background includes a review of topics that are central to the role that banks play in EBPP. Second, a framework for analysis of EBPP banking models is presented. Using current EBPP business models, the next section applies the framework for analyzing the drivers and opportunities using case study examples. Finally, discussion and conclusions briefly discusses implications for future research and practice.

4. Literature review

The review of literature includes three main areas that are deemed important in conceptualizing a framework for

EBPP in banking. First, literature in strategy, particularly about firm level value creation [47] combined with bank specific issues [10] provides a basic understanding of bank strategic issues in this area. Second, literature on trust and risk, as well as consumer behavior in adoption, allows us to discuss the bank's position in the EBPP value chain. Third, literature on media richness and information exchange [22] enables us to discuss the implications of EBPP on information enrichment, billing "pull" versus "push", and its implications on the customer relationship.

4.1 Value network model

The Value Chain [41] has dominated the modeling of firm value creation, with the product is the main carrier of cost and value. But another way of viewing value creation is the Value Network model, with firms creating value through three basic primary activities: Network promotion and contract management; Service provisioning; and Infrastructure operations [47].

The activities included in the Value Network model, model a firm that creates value through attracting and retaining nodes in the customer set, and providing the services that connect and mediate (exchange) among the customers and with those of other networks, and managing an infrastructure that allows access to services. Value Network firms are facilitators of relationships. The activities they perform are not sequential, but reciprocal and simultaneous [47]. Thus, a variety of services, e.g. payment, liquidity and risk management services, link the firm's customers. Explicit contracts determine privileges and obligations of customers and the infrastructure, e.g. branch offices, ATMs and Internet servers provide access and capacity. Both value and cost are postulated as driven mainly by network characteristics [47]. Value and costs depend on the number of access points (network size effects), nodes or users that can be reached (positive demand externalities), and the variety of links between users (services provided). The costs for the users are in terms of charges for access to and use of the network, while the value is determined by the possibility to reach a large and relevant number of nodes through a variety of links. E-business models need to address both organizational and network strategy issues [36].

To provide greater value, value networks can increase their range of services offered by layering new services on top of the contract set and the infrastructure, (vertical expansion of service range) or increasing access to a larger pool of users (horizontal expansion of network scope). New service layers can be introduced internally by extending the range of services provided e.g. a bank may introduce trusted third party services for internet transactions over its own network. New services can further be introduced by layered multi-firm co-production [20], e.g. by joint ventures between a telecom service provider and a bank to create new mobile payment services. Horizontal expansion of network scope happens through acquisition of new customers and access points, and through inter-connect agreements, e.g. inter-bank transaction contracts and alliances.

Applying a network oriented model of value creation rather than a product oriented model has a number of implications that follow from a focus on value and cost being associated with the network of inter-customer relations rather than product characteristics. Of particular interest to management and government regulators alike are implications for firm strategy associated with decisions pertaining to market segmentation and positioning, innovation, scale and scope, and inter-firm cooperation.

4.2 Transaction cost, trust and risk

Banks are financial intermediaries that mediate financial exchanges in the economy. Financial transactions, with their associated risks and costs, arise in the support of real economy transactions. The motivation for insurance against risks is closely linked to ownership, changes in ownership or performance of hazardous activities. In other words, the customer context consists of network relations to businesses, governments, and individuals [18].

In terms of risk and trust, the bank as an institution has a solid track record in providing dispute mechanisms, prepayment liquidity, and transaction instruments for electronic payment. Trust and risk are closely interrelated [31]. Trust can be seen as the coordinating mechanism which binds the relationship together, provides the necessary flexibility [7, 21 28], reduces transaction costs [43, 11, 21] and reduces the complexity of the relationships. Zucker [54] discusses three forms of trust: institutional-based trust that flows from legal and financial systems that feature safeguards against and punishments for malfeasance; process-based trust that flows from past interactions and reputation; and characteristic-based trust that is tied to ethnicity or familial ties, or in this case, to corporate ties to a particular banking institution.

To explain why individuals cannot do the asset transformation (maturity, denomination, risk and liquidity) activities by themselves, Benston and Smith [6] introduce transaction costs. Transaction costs include fixed costs such as operation of the branch network, variable costs such as the administrative costs of 'processing paperwork', the determination of risk, monitoring costs, search costs and the customer costs of time and convenience. Thus, they attempt to explain why individuals do not perform asset transformation themselves as a function of the transaction costs incurred in conducting such activities. It follows that the exploitation of economies of scale and scope in the asset transforming technology justifies the existence of financial intermediaries.

4.3 Consumer behavior

Consumers have expressed a growing desire to streamline personal financial management systems, making the electronic delivery channel an attractive solution. But this desire is of a select demographic of consumers, and to widen usage to reach critical mass, education on EBPP must occur.

Kennickell and Kwast [27] analyzed the use of various types of payment instruments by households. They found that income, assets, age, and education affect consumers' choice of payment instrument. Mantel [29] investigates consumers' decisions about whether to use paper checks or direct debit for bill payments and also found some demographic characteristics important in influencing consumers' choice of payment instruments. Daniels and Murphy [13], for example, found that ATM usage increases with education and income, while the usage of transaction accounts decreases with age.

To create a level of adoption that makes for critical mass in e-billing, one must create a change in consumer behavior, either to visit the web portal to pay, or to appropriately react to e-mailed bills. Consumers will decide what the best payment option is for them, but there are some things banks can do to influence consumer behavior. These things can include rebates and other incentives, including reduced transaction fees. Informational initiatives are also possible, for example MasterCard Remote Payment and Presentment Service (MasterCard RPPS) launched a new campaign to raise public awareness of electronic bill payment and presentment (EBPP) services [30].

4.4 Implications of EBPP on information enrichment

Daft and Lengel [12] apply media richness theory to organizations. They state that [p. 194] "organizational success is based on the organization's ability to process information of appropriate richness to reduce uncertainty and clarify ambiguity." How presentment / delivery of the billing information is able to be utilized by the consumer and the biller is important for acceptance and preference of EBPP versus the traditional postal methods. And this is important for banks in how they utilize media richness in their electronic delivery of bills.

Where this is important, in concert with the possibility of disintermediation, is in the next generation of EBPP solutions. The first generation of EBPP solution required a consumer to visit a biller or bank website to view their statement. This has not always been seen as a success, as it requires the website to have some "pull" mechanism (e.g. access to all a consumer's online accounts at myciti.com) to interest the consumer into making it a habit. The second generation of EBPP solutions is "push" oriented, towards a multiple channel approach, to create a convenience for the consumer to adopt the mechanism.

5. Framework for value position

As well as billers, in its simplest form, the EBPP value network [53] consists of bill consolidators and consumer service providers (CSPs). Bill consolidators act as intermediaries between billers and consumers, as a bill solution provider (BSP), aggregating bills from a number of billers and providing a gateway to the payment processing network. The consolidators will still need to get bills to customers and here there is an emerging role for CSPs. CSPs are the end-consumer interface for EBPP services, providing large numbers of online customers. EBPP will be one of many services the CSP will offer to its customers, alongside, for example, travel and entertainment and financial services.

Weill and Vitale [49] argue that e-business models can be systematically analyzed to understand their revenue, potential profitability and competencies need for implementation. In viewing EBPP, companies with the most to gain from EBPP are those with the highest volumes of bills and large numbers of Internet-enabled customers. Such companies can approach EBPP in three different ways: they can bill customers directly or they can use an aggregated service, based either on the 'thick' or 'thin' consolidation model. Each of the emerging EBPP models, as described in Table 2, has implications for the players in the billing value chain:

Table 2. Three EBPP Business Models [53]

Billing Direct	This model allows the biller to retain control over its customer relationships. Consumers go directly to the biller's site to pay their bill - but obviously they can only pay bills for the goods and services they have bought from that biller.
Thick Consolidation	One organization acts as a bill aggregator, acquiring billing details from a spectrum of companies and consolidating them on a single site. It lowers the cost of implementing an EBPP solution to the billers.
Thin Consolidation	Only bill summaries are provided on the consolidator's or CSPs' sites. For detail, customers are taken back to the biller. This is a compromise that enables billers, consolidators and CSPs to share the bill's 'stickiness', while providing consumers with a high level of convenience and billing organizations with maximum reach to their customers. Thin consolidation may suit bill presentment on a WAP phone, for example, where consumers will not want to download the full detail of their bills.

The key issues to consider when selecting an EBPP approach are control of the customer relationship, infrastructural cost of implementing the EBPP, and creating many alternatives for customers to use the EBPP infrastructure.

From case study research, we can identify in Table 3 four different value models for bank activity in EBPP:

Table 3. Possible EBPP Value Positions for Banks, Adapted [53, 49]

Model	Characteristics	Value Proposition
Branded Portal	Unique bank brand strength Leverageable bank technology infrastructure Multiple EBPP vendor partners Global or regional bank network Multiple bank distribution channels	Differentiation, Competitive Advantage
E-Document Model	Creating unique e-presentment to enhance adoption	"Push" delivery channel alternative
Alliance Partnership	Specific arrangement to leverage respective strategies	Cost-effective, investment protection
Infrastructural Network Solution	Provides a ubiquitous infrastructure for seamless connection for all parties Open, interoperable switch for financial institutions to exchange online bills and payments between billers and consumers.	Open standards, unique niche

Banks have the potential to play multiple roles in the billing value chain [53]. Banks are billers in their own right; they could also become bill consolidators, already have the role of payment processors, and many are also setting up as Consumer Service Providers. Banks have much to gain from EBPP, both because it is an added-value means of attracting and retaining customers, and because it can help them generate additional revenues from third-party bill consolidation and payment processing services.

Banks have a position as a neutral trusted third party (TTP), given their longstanding reputation of trust with customers with their fiduciary responsibility. Trust can be defined various ways, such as "the willingness of a party to be vulnerable to the actions of another party" [31]. Studies of trust have identified it as a critical factor in stimulating e-commerce transactions[42].

5.1 Branded Portal: Citibank

MyCiti.com is the branded portal, where Citibank leverages its various consumer products and services to create its own EBPP portal for payments of its various products [38]. Citibank has joined Spectrum, and also works with Master Card's RPPS and with Paytrust. Citibank's dual EBPP strategy approaches billers mainly through its strong cash management services capability, although it also has strengths in outsourcing, software, and consolidation. Citibank uses proprietary banking software and has chosen to use TransPoint for electronic bill presentment and end - to - end EBPP. Its strategy for retail EBPP is to increase the number of retail banking clients who receive and pay bills online and to increase the number of bills they can pay.

5.2 E-Document Model

5.2.1 Eosbank, ACI eosbank, formerly Acacia Bank in California, has become one of the few online banks to provide customers with second generation EBPP paperless statements and notices, on a "push" basis or via the web portal on a "pull" basis [1]. Customers can receive the e-mailed statements at one or multiple locations, depending upon their preference. The statements and notices then can be easily organized and stored on a PC to maintain personal financial records. Customers can view these same documents by logging on to the bank's secure Web site.

eosbank has partnered with software solution provider ACI as an appropriate choice for eosbank's target niche market, Gen-I, people defined as leading an Internet-based lifestyle. ACI e-Statement Courier securely delivers encrypted statements to customers' e-mail inboxes, and includes customer relationship management (CRM) tools, direct links to customer service features, cross-selling and marketing opportunities, and the ability to invoke actions from within the actual message. Statements are archived for future access and cannot be altered by issuer or recipient after delivery.

5.2.2 EPOST and Bank of Montreal EPOST, is a joint venture partnership between Cebra and Canada Post (Cebra is subsidiary of Bank of Montreal)[14]. EPOST provides Canadian consumers the ability to receive bills and other documents and to conduct financial transactions -- all in a secure electronic environment. Each message carries a digital electronic postmark. That creates a "virtual seal" around the transaction so that any alteration of its contents is immediately apparent to the recipient, it is the web-based digital equivalent of first-class mail.

5.3 Alliance Partnership

To deliver EBPP services, today's strategy involves partnerships on a multitude of levels. Larger banks use a variety of vendors, including CheckFree, Paytrust, Princeton eCom, Avolent, YourAccounts.com, Bottomline Technologies and Derivion, to name only a few.

5.3.1 Bank of America and CheckFree In April 2000, Bank of America (BofA) signed a strategic agreement with CheckFree [46]. The two companies also announced they are collaborating to further lead the industry in developing and launching new electronic commerce initiatives, including a next generation payments platform architected specifically for banks to extend payment services on the Internet.

Bank of America customers are able to access electronic billing and payment services by seamlessly linking to CheckFree through bankofamerica.com -- delivering the familiar Bank of America branded website. In February 2001, BofA launched a $45 million, two-year campaign to promote online banking and EBPP products. Customers also utilize an integrated billing and payment infrastructure, the CheckFree Guarantee that protects against fraud and late payments and provides advanced customer care capabilities such as call center web access and payment history. The benefit to the bank is one partner in EBPP, with a wide range of billing opportunities for the customer base. There is only one set of standards that the bank has to adhere to, and only one partner for expanding new e-commerce payment platforms.

5.4 Infrastructural Standard: BBS, BPAY, Spectrum

Each country or region has shown different approaches to creating a consolidation infrastructure mechanism. The key difference between what is going on in certain geographic regions, versus what is happening in the U.S. is that, in Norway and Australia for example, a biller can post billing information at the participating home bank sites of all banks involved in the agreement. In the U.S., billers traditionally have a cash management relationship with only a handful of banks, while in certain countries in Europe and Australasia, entities like BPAY and BBS, sit in the middle between the billers and the banks and act as payment processors.

5.4.1 BBS Norwegian ACH company Bankenes Betalingssentral (BBS) has developed a unique national consolidator system to provide EBPP on behalf of the five largest Norwegian banks to a range of billing companies including utilities and telcos [53]. BBS delivers billing information electronically to the billers' Internet-enabled customers via 'Net banks', online banks acting as consumer service providers that want 'sticky' content to attract people to their sites. Under the agreement, participating Norwegian banks have agreed to provide all consumers with access to the online bill presentment and payment system, independent of their bank affiliation.

5.4.2. BPAY In Australia, BPAY launched in November 1997 with nine banks [8]. Today more than 130 Australian financial institutions offer the BPAY service as a feature of phone banking and Internet banking. BPAY View launched in January 2002 with 19 major billers participating in the Internet bill viewing service. Billers are able to present summary bills at the consumer's online banking site, and the user can then choose to pay the bill directly to BPAY or through their billing service provider. To set up the service, users log on to their online banking site, decide what bills they want to receive through BPAY's system and register the details of their selected billers.

5.4.3. Spectrum Spectrum is a bank-centric solution; the bank owns the relationship with both consumer and biller customers [45]. The Spectrum platform is unique in that it helps member banks leverage and expand these customer relationships, rather than compete with the bank for billers and consumers. Participation in the Spectrum Network is a subscription service for financial institutions. Biller service providers (BSPs), customer service providers (CSPs) and other processing services may participate when a Spectrum member financial institution sponsors them. Spectrum seeks to provide value to its participants by providing superior service and reducing overall bill presentment and payment costs. Spectrum does not host any bills, nor does it retain any bill details.

6. Value framework and value positioning

In this section of the paper, we assess the benefits of the three bank activity business models to a bank in adding value to its participation in EBPP. Using the research of Weill and Vitale [49], we address the value positioning the bank can take, based on the bank's objectives in participation.

6.1 Value framework for consumer

In a slight deviation of the work of Han and Han [23], a customer value framework can be viewed in Table 4 that compares the value improvement for the customer to the value components in the value proposition. Instead of the Han and Han use of the term 'context', we use a discussion of the infrastructure as a value component, highlighting the use of the Internet for EBPP as an alternative contextual channel for bill delivery and payment. Not only is the role of trusted provider addressed in the infrastructure quality and both cost reduction components, but this framework can assist in explaining the relationship between three different value creation positions for the bank in its different roles in the market and the associated customer value creation.

Table 4. Customer Value Framework, based on Han and Han [23]

Role of Bank	Value Improvement	Value Components - Examples	
		Content	Infrastructure
Network Enabler	Quality Enhancement	Content Quality: Richness [19] Accuracy, timeliness and relevance [2] Detail and accuracy of informational content[51]	Infrastructure Quality: Transaction security reassurance Reduction of economic, privacy, performance risk [26] Degree of easiness in the process of transaction [15]
Processor	Cost Reduction	Content Cost: Reduction in transaction uncertainty, reduction in agency costs; reduction in asset specificity [16, 19]	Infrastructure Cost: Transaction infrastructural cost efficiencies due to volume [50]
Advisor	Customization	Content Customization: Differentiating the complexity of content of the transaction to the need of the customer Creates "stickiness" of EBPP website for return visits	Infrastructure Customization: Utilizing established infrastructure to provide a personalized transaction environment. Provides alternative channel for cross-selling activities

One outcome of this framework is to look at the possible difference of value position for first and second tier banks. A first tier bank (e.g. Citibank, ABN AMRO) already historically focuses electronic efforts on processor and network enabler activities for consumers, and are currently addressing advisor roles more actively. A second tier savings bank or building society tends to focus on the advisor and network enabler role for content quality. An alternative for a second tier player, with EBPP, would be to address the infrastructure quality in the network enabler role, with a focus on ease of transaction, and additional aspects of the advisor role with cross-selling activities.

One critical issue in the framework, only briefly mentioned before, is the cost trade-off between the desired value position and the investment and risk associated with EBPP by the bank. Economides [17] discusses in network economics the issues of compatibility and market structure, focused on interoperability between complimentary products. In this case, payment systems could have additional cost if there are not compatible to market standards used by alternative payment methods. This is a bank-specific issue, based on their tolerance of risk.

6.2 Value positioning for bank

In viewing the framework above, we can see the value given to the customer by the bank in its different roles, and can therefore explore possible ways to leverage that from a first or second tier bank's perspective. In extending the view of the bank in participating in EBPP, it was previously mentioned that key issues to consider when selecting an EBPP approach include control of the customer relationship and cost issues. This is also true for banks, which consider the additional value to the customer relationship and to the revenue stream.

Weill and Vitale [49], in their book "Place to Space", discuss the different critical success factors in electronic business models. Extrapolating their factors into a value position for the bank, Figure 1 shows what value position each of the four business models can provide to the bank.

	Ownership for the Bank		
	Relationship	Data	Transaction
Branded Portal	√√	√	√
E-Document Model	√	√	N
Alliance Partnership	√	√	N
Infrastructural Network Solution	N	√	√

Legend:

√√ Exclusive ownership
√ Shared ownership
N Neutral ownership position

Figure 1. Value Positions of the Four EBPP Bank Activity Business Models, Adapted from Weill and Vitale [49]

The strongest position is held by the Branded Portal, having ownership of all three assets, and a particularly strong and intimate customer relationship. The success factors for this model hinge on forming strong customer relationships and creating a value proposition based on the brand and breadth of offerings.

Both the Branded Portal and Alliance Partnership have strong customer relationships, but the extra revenue generation from owning the transaction (more immediately tangible than owning the data) makes the Branded Portal model more effective in terms of profitability. The Alliance Partnership model focuses on the platform serving the customer need, and achieving the level of service completeness. The same can be said for the E-Document Model. Data analysis is a key factor, to utilize information to better focus product and service offerings.

The Infrastructure Network Solution is motivated by shared costs via economies of scale, and the need for critical mass of users involved to make the adoption a success. They may not have the brand name or volume of users to start a EBPP activity on their own. Participants may not gain customer intimacy, but will require less investment in the infrastructure, and will have a higher degree of interoperability in the solution.

6.3 Role of trust and consumer control

In examining the value propositions, one of the major aspects of the framework is the control element. Control over the customer relationship, the data, the transaction, and, to some extent, the trust in the relationship is vital for a dominant value position.

This is true not only for the bank. Research has found that consumers' concerns about control and security are the most important factors affecting the use of electronic bill payment options. One-quarter of households believe that the Internet is not secure, and 65 percent are not certain about Internet security. For nearly half of all households, retaining control of payment timing is important [37]. Consumers also want control of how and when they can utilize the information, and that is what is driving the second generation of EBPP solutions, with multiple delivery channels for the information to suit the consumer's choice.

Given its established role in payment operations, banks offer the control mechanisms of audit trails and routing control as part of their own transaction infrastructure. Banks also have a traditional role as a neutral third party in payment activities, a trusted role the bank holds with consumers and billers alike. Building trust in the transport mechanism will be key to success, and the inroads being made in e- commerce could have a considerable positive impact on the acceptance of EBPP. Banks have a key role in the secure transport as part of their normal bricks and mortar operations. Banks are always concerned about the risks of fraud, operational failure, and other liquidity and credit risks because their success depends on maintaining a system that is useful to customers and protects the provider from fraudulent withdrawal of funds from the system. This means banks focus on a secure transaction infrastructure to mitigate risk, based on positive network effects [32], which accrue when an increase in the number of users of a good makes the individual user better off. Banks already use trusted mechanisms for transactions in the use of the systems of the credit card associations, the Automated Clearing House, and the electronic fund transfer networks to clear and settle payments [33]. The bank can also bring trust with an accepted customer interface based on its own branding, and by reassuring the customer about the control of the data and of the transaction, as they are used to the bank's level of transaction security to-date for traditional electronic transactions – ATM, pay by phone, electronic debits, etc.

7. Summary and opportunities for further research

EBPP is becoming an integral component of electronic commerce, and with second generation solutions such as secure e-mail EBPP and bill aggregation, consumers will find many choices to suit their payment needs.

Banks are considered trusted providers of financial infrastructure in today's economy. Banks bring many value elements to the EBPP value chain, such as a profitable automated clearing house (ACH) organization, guaranteed funds, and established commercial relationships. Banks have the necessary market reach [49] to gain the benefits from EBPP, such as personalized marketing, customer service, financial gain on float, controlling accuracy of information, and gaining cost savings. In participating in EBPP, banks are protecting their assets by controlling fee pricing and offering cash management to the billers and by maintaining the close relationship with the consumer. Banks of all sizes have the opportunity to start into this market with their own consumer billing (credit cards, mortgage, pension schemes, insurance, etc), and build a level of trust and timeliness into the activity with their own business before expanding to incorporate other billers.

EBPP technologies have the ability to impact the banks' role in their customer relationship. Creating value in the Bank-Customer relationship depends not only on the bank's position in the market, but the perception of the bank's role in creating value for the customer. The specific customer relationship strategy will depend on the bank's approach and position in the EBPP value chain, but the important point is that electronic billing enables billers to establish dynamic and influential relationships with their consumers. Financial institutions performing consolidation cannot only push money from customer accounts to merchants, but also control the flow of valuable customer information. For example, they can offer bill analysis that helps the consumer get the most out of their service and its associated rates and tariffs; they can suggest complementary products and services at discount rates; they can facilitate the transfer to other services that may offer better value [34].

Banks will benefit over time as their processing costs are lowered, but they will have to be proactive in offering value-added services if they are to mitigate the risk of being relegated to a secondary relationship with their customers, or, worse, having their customers move to another institution. Banks with associated volume and infrastructure in the first tier can create value positions with personalization and content richness of the information. Second tier banks can still create a value position, based on the role of advisor and value added network enabler.

Future possibilities for this research include testing the customer value framework with qualitative and quantitative data to test propositions about the four EBPP business models to determine key success factor characteristics for banks.

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