Association for Information Systems
AIS Electronic Library (AISeL)

2007

A transaction-based Framework for Business Models in Electronic Commerce

Sabine Zumpe
The University of Queensland, s.zumpe@business.uq.edu.au

Maria Madlberger
Vienna University of Economics and Business Administration, maria.madlberger@wu-wien.ac.at

Follow this and additional works at: http://aisel.aisnet.org/pacis2007

7. A transaction-based Framework for Business Models in Electronic Commerce

Sabine Zumpe
The University of Queensland
Business School
s.zumpe@business.uq.edu.au

Maria Madlberger
Vienna University of Economics and
Business Administration
maria.madlberger@wu-wien.ac.at

Abstract

Although considerable research has been conducted into the definition and classification of business models (BM) over the past decade, not much research has focused on the characteristics of transactions with distinct phases in these BMs. Both transaction cost economics and consumer behavior research highlight the relevance of transaction phases.
We develop a seven factor framework that differentiates between the information phase, the agreement phase, and the fulfillment phase. The factors are derived from the analysis of e-commerce transactions and include the transaction partners, the information and trust they need, the type of flows between the partners, the revenue generation, and the cost for premature termination of the transaction. We apply the framework to a theoretically driven BM classification and illustrate the framework with two cases of the Australian tourism industry.
Our analysis reveals that transaction phases determine how mature a BM is and therefore how advanced the transfer of business transaction from traditional to online environment is.
According to our results, the number of transaction phases supported online is an indicator for customer satisfaction and the success of the BM.

Keywords: E-Commerce, Business Model, Transaction Phases, Framework.

Introduction

The volume of business transactions conducted over Information & Communication Technology (ICT) networks has continuously increased as evidenced by figures from the Australian Bureau of Statistics. For example, the value of Internet commerce in Australia for the year 1999-2000 was estimated at $ 5.1 billion and it has grown to $39.6 billion in 2004-05. Australia's proportion of businesses that place orders via the Internet increased from 41.8% in 2003-2004 to 45.2% in 2004-2005 (Harper 2006). This enhancement of Internet commerce was enabled through changed transaction environments. Transactions that have been conducted traditionally without ICT moved to use the emerged Internet. The transfer of transactions from an offline environment to an online one has taken place into several steps which are closely corresponding with the various phases of a complete business transaction. In the first stage, the *information phase* has been supported by many online sellers, thus providing prospective customers with product and service information as a preparation of the purchase decision. Later, online sellers also started to offer the possibility to purchase online, i.e. supporting the *agreement phase*. To enable the completion of a transaction online, the *fulfillment phase*, i.e. digital delivery and payment, has been undertaken online as well.
Profit-oriented companies digitize their business transactions to achieve benefits from them. The transfer from offline to online transactions is usually embedded in the firm' adoption of

the online business. To assist firms with the adoption of their entire business processes and strategies for online activities, e-commerce literature developed various classifications of business models (BM).

A BM in its simplest form is "an architecture for the product, service and information flows, including a description of the various business actors and their roles" (Timmers 1998, p.4).

While this definition focuses purely on the business context of the models, other definitions consider BMs as a bridge between the firm's strategies, its processes, and information systems (Pateli and Giaglis 2004). Osterwalder and Pigneur (2002) (p.78) consider a BM a "conceptual and architectural implementation (blueprint) of a business strategy and as the foundation for the implementation of business processes and information systems".

Many different BMs exist, each of which addresses different aspects and foci of internet commerce. For instance, Rappa (2002) distinguishes BMs based on their revenue and position in the value chain. Timmers (1998) focuses on the firm's degree of innovation and Lam and Harrison-Walker (2003) classify business models based upon the Internet connectivity of users and the value creation for the firm.

To assist companies, however, with the transfer from offline to online business transactions, the BM needs to provide support and mechanisms. Unfortunately prior research on BMs did not pay much attention to the characteristics of business transactions. The lack of presence of this transaction perspective in the BM literature is noteworthy because it is a core aspect in several theoretical approaches that are strongly related to BMs in e-commerce. Marketing literature has widely investigated the customer's viewpoint in a purchasing process and has empirically shown that each purchase decision takes place in several phases (Blackwell et al. 2001; Berman and Evans 1998). As Knotzer and Madlberger (2007) demonstrate, these stages can be successfully transferred to online purchasing processes. Another theoretical approach that has proven its appropriateness for explaining buying and selling processes on the Internet is Transaction Cost Economics (Williamson 1975). Transaction costs result from coordination problems between the seller and the buyer (Milgrom and Roberts 1992). To get insights into the nature of transaction costs, it is useful to separate a transaction into its single phases, as this is proposed by Schmid and Lindemann (1998) and Büyüközkan (2004).

In this paper we analyze prior research on BMs for e-commerce in respect of their transaction maturity. Therefore, we develop a framework to align existing BMs with the phases of trans-actions. Finally, we illustrate our framework with two websites from the Australian tourism industry.

Our study contributes to research by the integration of prior research on business transactions into BMs for e-commerce. The paper also contributes to practice because it enables a company to select a BM based on the companies' focus on particular transaction phases.

Research Background

Transaction Phases

A business transaction consists of interaction processes between market participants in different roles, e.g. seller and buyer. Transactions aim to initiate, arrange, and complete a contractual agreement between the trading partners (Schmid and Lindemann 1998). Typical transactions are the purchase of goods or services, money transfer or the settlement of contracts. Transactions can be analyzed from a process view because process orientation allows the investigation of dynamic aspects of transactions. The distinction of processes in transaction phases can ease this dynamic viewpoint. Any kind of transaction consists of phases. Although each type of transaction shows particular features (e.g. concerning the selection of alternatives or the kind of information exchanged), there are some fundamental

issues all transactions have in common. These generic characteristics are referred to as transaction phases. The most frequently used transaction phases in literature are the information phase, the agreement phase, and the fulfillment phase (Schmid and Lindemann 1998; Chen and Chang 2002; Holzmüller and Schlüchter 2002; Yu et al. 2002; Hansen and Neumann 2005). Other researchers identify a fourth phase, i.e. the after-sales phase (Büyüközkan 2004; Di Noia et al. 2004). The after-sales phase is integrated into the fulfillment phase by some researchers (e.g. Schmid 1995; Kim and Lee 2002; Hansen and Neumann 2005). In contrast, Selz and Schubert (1997) identified a communication phase. Kim and Lee (2002) elaborated the environment phase as a fourth phase and argue that several characteristics of a transaction can occur at different stages.

Apart from these process-oriented approaches, there are also classifications that focus on certain aspects of transactions. Jelassi and Leenen (2003) investigate e-commerce BMs for manufacturers and use a supply chain-oriented classification. For manufacturers that sell products directly to consumers over the Internet they propose six phases: research & development, pre-online-sales, online sales and manufacturing, inbound logistics and assembling (built to order), order fulfillment, and online after sales service. Strictly speaking, the first phase does not belong to a transaction but is rather a prerequisite of it. Essler and Whitaker (2001) stress the role of interactivity in e-commerce systems. They compare Internet-based transactions with offline transactions and distinguish (1) poremptive, (2) emptive, and (3) abemptive phases. Although these phases correspond with the information, agreement, and fulfillment phase, their understanding of transaction phases is related to both the seller and the buyer.

Our further understanding of transaction phases follows the widely used distinction between the information phase, agreement phase, and fulfillment phase. This approach is chosen because it is generalizable, independent from industries or supply chain members, and shows a sound basis for investigating theoretical grounding. Although the transaction phases can be applied for e-commerce in b2c as well as in b2b, we focus on the b2c sector only.

The three transaction phases are characterized as follows (Selz and Schubert 1997; Schmid and Lindemann 1998; Kim and Lee 2002; Büyüközkan 2004):

(1) The *information phase* comprises an overview over the market to gather information about the potential trading partners as well as the products and services offered. This phase starts when a prospective customer enters the e-commerce system (Kim and Lee 2002). Customers may look for comparison possibilities and check the availability of products. Information gathering can take place in two ways. First, customers can become more sensitized for relevant information, which corresponds to passive information search. This behavior makes them particularly receptive for push-based information. Second, customers can actively undertake efforts to obtain information, which is characterized by active information search. This concept is related to pull-based information retrieval. In this context, Kim and Lee (2002) distinguish between browsing and searching. As soon as an offer is submitted, the information phase is terminated and the transaction moves forward to the agreement phase.

(2) The *agreement phase* (also referred to as negotiation phase) is the part of a transaction in which the trading conditions are agreed upon. Also this transaction phase is characterized by an intensive and mutual exchange of information. The most important issues of negotiation are prices, product characteristics, delivery conditions or payment methods. In e-commerce systems, the agreement phase can be designed by applying shopping carts or Web forms where the customer can enter personal information. In contrast to the information phase, the agreement phase is more specific to individual conditions, such as product categories or payment habits. If the customer accepts the seller's offer, a legal-

binding contract is established. At the end of the agreement phase, both parties are obliged to fulfill their promises.

(3) The *fulfillment phase* (also referred to as settlement phase) covers the fulfillment of the obligations that result from the agreement phase. This phase is even more specific to the situation as it may comprise sub-functions which are related to the product or service in question, but also to the mode of payment. Typical tasks in the fulfillment phase are transportation, storage, packaging, insurance, and payment. As Schmid and Lindemann (1998) point out, the fulfillment phase often initiates secondary market transactions, such as the use of financial or logistic services. If all tasks of the fulfillment phase are completed, the transaction is terminated.

Each transaction phase is characterized by different flows of information. Particularly in e-commerce systems, the flow of information usually is digitized and transferred via the Internet. Hence, e-commerce systems are appropriate for supporting the flows of information resulting from the transaction phases. Furthermore, firms have many degrees of freedom concerning the design of the information flow in each of the transaction phases. In Figure 1, the intensity of the information flow in each transaction phase is depicted.
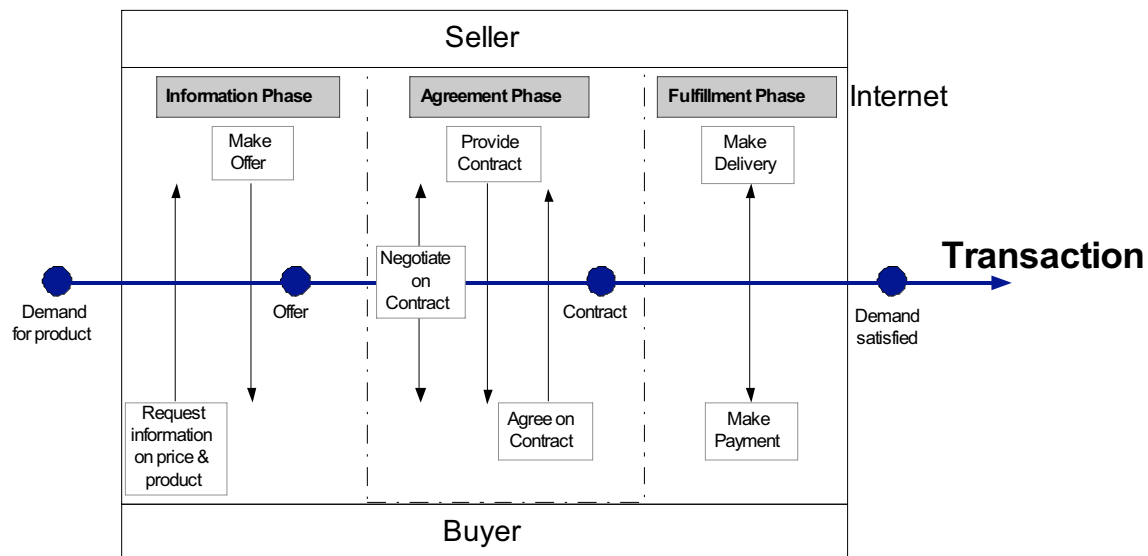

Figure 1: Decomposition of a Business Transaction into Three Phases

Business Models

Although considerable research has been conducted into the structure, functioning, and impacts of BMs over the past decade (Afuah and Tucci 2001; Applegate and Collura 2001; Hedman and Kalling 2003; Lam and Harrison-Walker 2003; Timmers 1998), the findings are characterized by a variety of methods, classifications, frameworks, and components. While the BMs are described as the most discussed but least understood concept of e-commerce (Alt and Zimmermann 2001), the various definitions of BMs reflect this diversity. A definition that includes components of different BMs comprises nine building blocks (Osterwalder et al. 2005) and we believe this broad definition is beneficial for analyzing BMs in terms of their transaction foci: "A BM is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating, marketing, and delivering this value and

relationship capital, to generate profitable and sustainable revenue streams" (Osterwalder et al. 2005, p.3).

Further, we need to point out that prior research was not able to develop a unified tradition for BMs. Progress towards an improved understanding of BMs is made by the analytic framework that provides cognitive organization of BM concepts (Pateli and Giaglis 2004). The decomposition of prior research of BMs into eight sub-domains provides structure to the field but also illustrates the gaps in BM research. Pateli and Giaglis (2004) present an agenda for future research on BMs where they emphasize the need for clarification on BMs and related concepts, in particular processes. The definition of eight propositions about the link between BMs and IS provides clarity of future research and existing challenges of BM research. The benefits of BMs and how to apply them are illustrated, for example to reduce the distance between the IS domain and the business world (Osterwalder et al. 2005).

As stated earlier, business processes represented by purchasing transactions are core components of e-commerce. BMs should consider the concept of transactions otherwise the business logic of a firm is imperfect. Therefore we argue that BMs which lack the discussion of transactions are incomplete and thus less supportive for the guidance of firms to transfer their transactions to an online medium. Connecting existing BMs to the relevant phases of business transactions is an application of them to the field of IS. The five stage evolution model for BMs by Osterwalder et al. (2005) refers to this application as the ongoing fifth stage towards more rigor BM research. The other four stages illustrate the growing coverage of identified BMs.

The first stage aims to give definitions and classifications for BMs. The second and third stage of the BM evolution focus on the description of elements a BM should contain. Earlier work in the second stage provided unstructured listings of BM elements while the third stage is characterized by a more careful and deeper description of the BM elements. In stage four, BM research becomes more mature as evidenced by an increased abstraction level. This development is associated with conceptual representation of the BM components, for example ontologies (Osterwalder et al. 2005).

Prior research developed BMs that root in disparate streams of research, for example in the fields of strategy, IS, management, and e-commerce (Pateli and Giaglis 2004). The focus of BMs and how they include business transactions is analyzed for a selection of the most influential BMs for e-commerce BM research. We distinguish the transaction focus between a direct focus and an indirect focus. The direct focus points out the existence of purchasing transactions and breaks down the transaction in phases. BMs that include an indirect transaction focus, however, assume only the existence of the transactions phases and understand them as the underlying need for the BM. Table 1 illustrates the extent to which prior research on e-commerce BMs includes the concept of business transactions and identifies the transaction-related constructs in each of the BMs.

The majority of the e-commerce BMs neglect the importance of business transactions. Generally speaking, transactions are summarized as flows of products, information and money (Weill and Vitale 2001) or business processes (Alt and Zimmermann 2001). The three distinct flows only describe transactions that occur after the agreement phase; hence they do not consider activities in the information phase. Explaining the rationale for BM components the objective of making money on long term is presented and all components have to support

that objective. But transactions themselves are not understood as a source of profit generation (Afuah and Tucci 2001).

Early BMs of the first and second/third evaluation stage described the trading participants as seller and buyers. However, the later ontology-based BMs increase the abstraction level and the trading partners correspond with the concept of value actors (Gordijn and Akkermans 2001). Thus, the ontology of the fourth stage presents transactions as the exchange of values of objects among the actors. The exchange is conceptualized as a chain of value activities that requires the integration of information available in various steps of the chain. Timmers (1998) refers to this integration as the value chain re-construction. If processes are used to replace the concept of business transaction, this element covers a broader definition than the actual purchasing transaction. It includes also the mission and structure of the BM (Alt and Zimmermann 2001). The definition and introduction of certain BMs applies the concept of transactions. For example, the brokerage model that guides the link between buyers and sellers, and thus facilitates transactions, includes the BM of marketplace exchanges. In this particular BM brokers offer a variety of goods and services along the entire transaction. Rappa (2002) describes this transaction as a number of steps, "from market assessment to negotiation and fulfillment".

Table 1: Identification of the Transaction Concept in E-Commerce Business Models

(Osterwalder et al. 2005; Pateli and Giaglis 2004)

Study	Evolution Stage	Direct Transaction Focus	Indirect Transaction Focus	Transaction-Related Constructs
Timmers, 1998	1 :: Definition and Classification		✓	Value chain re-construction
Rappa, 2001	1 :: Definition and Classification	✓		Transaction as part of the BM description
Afuah and Tucci, 2001	2-3 :: Element Description	---	---	
Alt and Zimmer-mann, 2001	2-3 :: Element Description		✓	Processes as a generic element of BMs
Weill and Vitale, 2001	2-3 :: Element Description		✓	Flow of products, information, and money
Gordijn and Akkermans, 2001	4 :: BM ontologies & reference models		✓	Business value viewpoint: value exchange among actors

The evolution stage of a BM illuminates less the transaction focus and firms tend to combine several models as part of an overall e-commerce strategy. Although prior research recommends this BM mixture (Rappa 2002) it makes it more difficult to design the relevant BM components. The combination of BMs enables the firm to have entire transactions supported by the model, but for this purpose the transaction coverage of the BM needs to be identified. Otherwise the BM can overemphasize a certain transaction phase or totally ignore phases, which can result in unbalanced transaction processes.

Framework Development

Factor	Transaction Phases		
	Information Phase	Agreement Phase	Fulfillment Phase
Number of partners involved	≥ 2	restricted group of 2-n	2
Type of flows	price & product characteristics information	contractual information	payment and delivery information, product and payment
Type of relationship	no contract	binding intention leads to contract	based on contract contract fulfillment
Type of trust required	no or little trust	medium level of trust	high level of trust
Type of information	various sources	limited sources	restricted source
Type of revenue generation	no direct generation	contractual fees	service fees for payment and delivery
Type of cost for cancellation	opportunity costs	opportunity costs and/or contractual penalties	opportunity costs and contractual penalties

Table 2: A Transaction-Based Framework for Classifying Business Models

In this section, we develop a framework that allows the mapping of prior research BMs into the three transaction phases. We believe that a transaction-based framework allows the assessment of transaction success because the number of transaction phases supported online impacts the performance of the firm. Hence, with the framework one aspect for a successful e-business BM can be controlled. The framework includes seven factors that characterize a business transaction, i.e. (1) the number of trading partners, (2) the type of flows between the partners, (3) the type of relationship between them, (4) the trust and (5) information they need, (6) the type of revenue generation, and finally (7) the cost for premature termination of the transaction. The definition of the seven factors for each phase is presented in Table 2.

The *number of partners* involved covers the sellers and buyers. During the transaction this number decreases. In the third phase two fixed partners are identified. The *type of flows* describes the information and items exchanged during the transaction. These flows are strongly aligned with the conceptualization of the transaction phases, therefore this factor supports in particular the distinction of the phases. In each phase the partners establish different *types of relationships*. In the information phase the relationship is loose and non-binding. In the agreement phase, there is a strong will to fix the relationship which results in the conclusion of a contract. Relationships in the fulfillment phase base on this contract. The maturity of the relationships goes along the *required trust* between the partners. In the e-commerce environment a higher degree of trust is necessary, because trust is a main driver for success in re-tailing (Walczuch and Lundgren 2004; Gefen et al. 2003). The information phase requires only little trust, but with the increasing mutual commitment the degree of necessary trust augments.

The buyers require various *types of information* in the first transaction phase about product and price. This information is needed to decide about products, but also about the choice of the seller. Additional information is delivery time and service, warranty, and payment methods. In the later phases, specific information should be provided to the buyers to allow the realization of the transaction. In long-term business relationships the first phase can be left out because the partners know each other. Thus, they are familiar with the conditions of the transaction and can negotiate about contractual details in the agreement phase.

Important for the success of the BM is the *generation of revenue*. We argue that none BM can generate direct revenue in the information phase. Indirect revenue generation is possible though, for example the increase of product sales through an online promotion. Direct revenue is generated by fees for the contract, financial, and logistic services. These revenues emerge directly from the use of the BM, however the revenue for products sold is not included.

Various *costs* can occur for buyers and sellers if a transaction is terminated prematurely. In the information phase, opportunity costs occur to the buyer, for example costs of searching for another supplier. In contrast, the supplier bears presentation costs. These presentation costs are fixed costs and are part of the seller's online presence. In the agreement and fulfillment phase, each partner must bear costs. At least in the fulfillment phase, the seller is likely to assure with contractual penalties against the cancellation.

Application of the Transaction-Based Framework

In this section we apply the transaction-based framework to map existing BMs to the relevant transaction phases. Thus, we illustrate how different e-commerce BMs incorporate the concept of transaction phases. The classification of BMs by Lam and Harrison-Walker (2003) is used as an example for two reasons.

First, their classification framework builds on the most influential prior researches on BMs and hence, we understand it as a comprehensive BM classification. Second, the dimensions of this classification represent the core characteristics for online business. The first dimension, referred to as relational objectives, centers on the Internet connectivity. The connection of buyers and sellers regardless of geographical distances is crucial for this type of business. This dimension distinguishes between direct access, network development, and corporate communication. The second dimension focuses on the value generation. Firms will not apply a BM if they do not believe that the BM can add value to the existing business; financial or non-financial benefits. BMs that add value through membership fees or commissions provide direct financial benefits. Prior research, however, has demonstrated that non-financial benefits are also attractive and strategically important (Srivastava et al. 1998).
Table 3 presents the eight BM types by Lam and Harrison-Walker (2003) and their emphasis on phases of the business transaction. We conducted the allocation of transaction phases to BM by analysing the elements of BMs presented in the literature, e.g. the type of products and services offered, the relationship between sellers and buyers, and the methods of obtaining financial revenue. The combination of these elements then indicated the emphasis on a particular transaction phase. The next sections explain the allocation further.

User-paid Internet merchants and portals include BMs that either exclude traditional intermediaries or the firms sell their products or services on demand. In both scenarios the entire transaction is supported. A special case of user-paid Internet merchants and portals are

voluntary-based and supportive BMs. Payment for products or services is not based on a contract, but rather on the good will of the customers. Hence, only the information and the fulfillment phases are supported. Provider-paid Internet sites function as promotion portals for firms that advertise on these portals. Customers get free products or services, because the Web site aims at a high traffic that is important for the advertising firms. Sometimes the data collected about the customers is sold to third parties. Hence, no transaction phase is supported. BMs that support *virtual product differentiation* introduce the Internet as a further channel for bricks-and-mortars to sell their products and services. All transaction phases are carried out offline and can also be conducted online. Post-purchase supporting BMs allow firms to offer services for a lower price than they could do offline.

Brokerage networks include all three phases and in particular auctions focus intensively on the agreement phase to define the best price for sellers and buyers. Online exchanges represent virtual marketplaces that cover the entire transaction, however for the fulfillment phase the exchange uses value-added services offered by third parties.

Purchase assistance networks support the entire transaction although the firms aim to achieve better deals for the customers through the Internet. For example, the BM "buyer cooperative model" aggregates the demand of many individual buyers to enlarge the order quantity. Thus, the group can use its increased market power to get better prices.

Table 3: Allocation of the Lam and Harrison-Walker (2003) BM Taxonomies to the Transaction Phases

Business Model Type	Examples	Transaction Phases		
		Information Phase	Agreement Phase	Fulfillment Phase
Internet merchants and portals – *User Paid*	Manufacturer, subscription, pay-per-use	✓	✓	✓
Internet merchants and portals – *User Paid*	Voluntary contributor, public support	✓	--	✓
Internet merchants and portals – *Provider Paid*	Content sponsorship	--	--	--
Virtual product differentiation	Online product enhancement, bundling, post-purchase support	✓	✓	✓
Brokerage networks	Auctions, online exchanges	✓	✓	--
Purchase assistance networks	Buyer cooperative, shopping agent	✓	✓	✓
Retail networks	E-tailer, virtual mall, retail alliance	✓	✓	✓
Interactive networks	Collaborative design, community-building	✓	--	--
Internet promoters	E-coupons, e-contest	✓	--	--
Image building	Category- and brand-building models	✓	--	--

Retailer networks support the entire transaction, because various kinds of information about products and prices are offered online. Customers can conduct all transaction phases virtually. Online fulfillment, however, is limited to payment if delivery has to take place physically.

Interactive networks focus on the relationship between the network participants. Those BMs rather focus on short-term collaboration and partnership support than on purchase transactions. In the long run, the improved relationships will increase satisfaction with the seller, customer loyalty, and business interaction. These outcomes are all requirements for a healthy business, but in regards to the transaction phases only phase one is supported.

The BM type *Internet promoters* focuses on the information phase, because promotional instruments, such as e-coupons can influence the customers' attitude and behavior towards a product or service. Benefits offered by the e-coupons to the customer can direct his/her search focus and promote certain products. Firms are using *image building BMs* to focus on the reputation of the company, its brands, and its products. Their long-term objective is to generate a demand for the firms' products. Like the interactive networks, the Internet promoters include the offer of information through the education of customers about certain products and brands but do not want to trade products online.

Allocation of transaction phases to a business model case

In the following, we illustrate the transaction-based framework by investigating two cases from the Australian tourism industry. Both cases apply the same BM type "purchase assistance networks", however, contradictory to our allocation the two cases differ in their extent of transaction support.

The first case, wotif.com, is an online hotel booking service provider that supports nearly all transaction phases. The second case is EscapeTravel, an online travel agency that arranges flights, hotels, rental cars and other travel services. In contrast to wotif.com, EscapeTravel does not support all transaction phases for all its products.

Case One

Wotif.com sells hotel accommodation in 38 countries for both business and leisure travelers. During the *information phase*, the customer can access a listing of hotels by entering a city and country name into a simple search menu. However, further information, such as specific types of accommodation (e.g. hotel, motel, B & B), room types, number of guests, maximum price, and various amenities (e.g. pool, Internet, spa) can further define the search. The search results are displayed in a matrix which lists the price for each room in calendar format, making comparison between options easy. A click on the accommodation name reveals a detailed description about amenities, check in and check out time, transportation and car parking, and rates of alternative rooms. An eye-catching red flame icon, which indicates special price offers, provides additional decision support for users. Once the customer selects their desired option, the information phase gives way to the booking process.

In the *agreement phase* the customer is required to enter information into a Web-based dialog in three steps: (1) selection of dates, (2) review of selected dates and room to ensure correctness, and (3) entering personal information and payment details. In the review step, the total price for the chosen dates is displayed, including all taxes and booking fees. In the *fulfillment phase* the customer is given the option of saving the master data for later visits. If customers use the wotif.com online booking service, they have to pay a small, non-refundable fee that is added to the hotel price. As soon as the customer has paid via credit card, the reservation is confirmed and payment finalized.

In contrast to competitors, wotif.com supports each transaction phase to the optimum. There is a high degree of interaction and personalization in each step of the booking process. This BM became be very successful in practice. In 2006, the number of rooms booked via wotif.com totaled between 50,000 and 70,000 per week. This amounted to a yearly figure of 2.74 million nights of hotel room accommodation, an increase of 40%. Growing brand recognition is measured at 38% in Australia and 25% in New Zealand. In the second half of 2006, wotif.com generated a before tax profit of A$17 million. Profit increased by almost 38% from 2005 to 2006 (Wotif 2006).

The benefits of wotif.com's BM lie in its reduced transaction costs well as a comprehensive booking process. Another benefit lies in the fact that customers are able to complete the entire transaction via a single interface. This case illustrates that user benefit can be directly proportional to the number of supported transaction phases.

Case Two

EscapeTravel, a subsidiary of Australia-based Flight Centre, offers a wider range of travel services, such as flight and tour bookings. EscapeTravel allows travel agencies to participate

in its franchising system. We would expect that booking international flights would entail a similar process as booking hotels with wotif.com. However, since these booking mechanisms are only partially supported, customers are disadvantaged.

In the *information phase* the interaction begins with online forms where the customer enters required information (destination, number of passengers, dates). These activities are similar to those in information phase of wotif.com. After the search, the system lists the airlines that provide the desired flight together with the best prices. To obtain more information about a particular flight, the customer accesses airline-specific information. The subsequent dialog requires the user to enter an e-mail and postal address. After submitting this information, the customer is informed that s/he will be contacted shortly. However, there is no indication of the time frame involved in waiting to receive an answer.

The BM of EscapeTravel in the international flights section is not fully automated - it requires human interaction by affiliated travel agencies. Hence, the transaction is dependent on the operative hours of the travel agencies, which undermines the 24/7 accessibility of the Internet.

As a result, the EscapeTravel information phase cannot be completed during the customer's initial visit. Furthermore, the customer is not immediately informed about the price of the selected flight, which is an essential component of the decision making process.

Aside from compromising the decision process, this BM leads to several adverse consequences for the customer: First, s/he is forced to wait an indeterminate amount of time for the price information. During this period the customer cannot make a decision unless s/he is prepared to use other sources (such as the airline direct) where price information can be provided immediately. Second, customers face the risk of missing out on the best prices during the waiting period. Since the cheapest flights are usually obtained by booking as early as possible, this delay is logically an undesirable attribute. Third, the customer is presented with a dilemma. The only way the customer is able to make price comparisons is to re-enter the information multiple times. This not only causes inconvenience to the customer but also increases site operating costs. Finally, the customer may be forced to wait for an extended amount of time to make their decision whilst different airlines potentially provide price information at different times.

EscapeTravel's financial figures are included in those of Flight Centre Limited (FLT). In their Jul-Dec 2006 summary report FLT achieved an after tax profit of A$37 million. EscapeTravel receives more than 210,000 visitors per month. However the firm identified key issues related to increasing online presence such as "investments required to improve informational and transactional capabilities." FLT has expressed dissatisfaction with sales growth (Flight Centre Limited, 2007).

BM classifications like that described by Lam and Harrison-Walker (2003) show a fine granularity, however, fail to differentiate between wotif.com's and EscapeTravel's BMs (Table 4).

But from the consumers' point of view it is important whether the booking transaction can be finished in one step (as offered by wotif.com) or whether it is interrupted due to an intermediate e-mail conversation (as this is the case for international flights searched via

EscapeTravel). By integrating transaction phases, however, it assists to address the fundamental differences between wotif.com's and EscapeTravel's BM approaches.

Table 4: Application of the transaction-Based Framework on Australian Tourism websites

Conclusion and Implications

In this study, we investigated how transaction phases differentiate e-commerce BMs. We defined three distinct phases of a business transaction, such as information phase, agreement phase, and fulfillment phase, and allocated prior research BMs to these phases.

Therefore, we developed a seven-factor framework that was used in two cases to demonstrate

Factor	Transaction Phases					
	Information Phase		**Agreement Phase**		**Fulfillment Phase**	
Company	Wotif	Escape Travel	Wotif	Escape Travel	Wotif	Escape Travel
Number of partners involved	>2	>2	= 2	--	= 2	--
Type of flows	Price & Product	General, not all information	Contrac-tual	--	Payment and product	--
Type of relationship	No contract	No contract	Contract	--	Payment online, accommodation offline	--
Type of trust required	No trust	No trust	Medium trust	--	High trust	--
Type of infor-mation	Various available	Limited available	Specific available	--	Contractual and restricted	--
Type of revenue generation	No	No	--	--	Yes	--
Type of cost for cancellation	Opportunity costs	Opportunity costs	Opport. costs	--	Administration charge	--

how firms with the same BM achieved different level of online transaction support. The results show that the number of online transaction phases might influence the customer satisfaction and hence, are an indicator for the success of the BM.

Our transaction-based framework contributes to existing BM research in several respects. First, it is pioneering in introducing transaction phases as a highly relevant dimension in the interaction with consumers. Although consumers do not necessarily perceive single transaction phases as discrete steps in a purchasing process, they follow different phase models of decision making. If firms want to customize their BMs to the consumers' needs, they have to take transaction phases into account.

Second, transaction phases help to reduce the complexity of a BM. Extant literature has shown that the number of proposed BMs in e-commerce is constantly growing. This development is typical as firms develop and test more and more different models. Instead of determining an increasing number of potential alternatives, the application of transaction phases allows a systematic classification of a large number of BMs used in practice. The use

of transaction phases as a dimension allows focusing on approved elements of BM research, such as revenue and value generation instead of trying to create another BM. With increasing relevance of mobile and ubiquitous technology, the complexity of BM taxonomies is very likely to increase further. Transaction phases could be a helpful dimension concerning BMs that comprise more than one single technology.

Third, the framework furthermore assists in analysing multi-channel strategies that play a key role in e-commerce (Grosso et al. 2004). Transaction phases can be used for analysing why customers switch between channels of distribution or why they prefer certain channels for specific purposes. Thus, transaction phases assist in the analysis of competing BMs. Similarly to the "cross-company switch" between distribution channels of one seller, consumers tend to switch among competing sellers. Yet, transaction phases provide valuable insights and better understanding of how firms can build up trust and perceived competence among customers.
It is important to acknowledge the limitations of the study. The application of the framework is based on content analysis of the related websites and no direct contact with the website firms took place. Hence, we could use only public available data that can be a source for bias. In addition, the study reveals conceptual and descriptive findings. A causal relationship between the support of transaction phases and performance indicators could not be investigated with this study design. A deeper analysis of existing BMs in a quantitative study is essential.

Overall, the study shows that transaction phases are an important concept in BM research and in future research we will elaborate on how transaction phases relate to financial performance of the firms' BMs.

References

Afuah, A., and Tucci, C. (ed.). *Internet Business Models and Strategies*: *Text and Cases,* McGraw-Hill, Boston, 2001.

Alt, R., and Zimmermann, H. "Preface: Introduction to Special Section - Business Models," *Electronic Markets* (11:1), 2001, pp.3-9.

Applegate, LM., and Collura, M. (ed.). "Emerging networked business models: lessons from the field," *Harvard Business School* No. 9-801-172 *Harvard Business School*, Boston, 2001.

Berman, B., Evans, J. (ed.). *Retail Management,* MacMillan, New York, NY, 1998.

Blackwell, R.D., Miniard, P.W., and Engel, J.F. *Consumer Behavior*, Thompson, Mason, OH, 2001.

Büyüközkan, G. "A success index to evaluate e-marketplaces," *Production Planning and Control* (15:7), 2004, pp. 761-774.

Chen, S.-J., and Chang, T.-Z. "A Descriptive Model of Online Shopping Process," *International Journal of Service Industry Management* (14:5), 2002, pp. 556-569.

Chen-Yu, H. J., and Kincade, D.H. "Effects of Product Image at Three Stages of the Consumer Decision Process for Apparel Products," *Journal of Fashion Marketing and Management* (5:1), 2001, pp. 29-43.

Di Noia, T., Di Sciasio, E., Donini, F.M., Mongiello, M. "A System for Principled Matchmaking in an Electronic Marketplace," *International Journal of Electronic Commerce* (8:4), 2004, pp. 9-37.

Flight Centre Limited (2007) "Statement to Australian Stock Exchange", www.flightcentre. com.au, February 22, 2007.

Essler, U., and Whitaker, R. "Re-Thinking E-Commerce Business Modelling in Terms of Interactivity," *Electronic Markets* (11:1), 2001, pp. 10-16.

Gefen, D., Karahanna, E., Straub, D.W. "Trust and TAM in Online Shopping: An Integrated Model," *MIS Quarterly* (27:1), 2003, pp. 51-90.

Gordijn, J., and Akkermans, JM. "Designing and evaluating EBusiness models," *IEEE Intelligent Systems* (16:4), 2001, pp. 11–17.

Grosso, C., McPherson, J., and Shi, C. "Retailing: What's Working Online," *McKinsey Quarterly* (3), 2005, pp. 18-20.

Hansen, H.R., and Neumann, G. *Wirtschaftsinformatik 1,* Lucius & Lucius, Stuttgart, Germany, 2005.

Harper, P. "Australian Bureau of Statistics Business Use of Information Technology – 2004/05," 812 9.0, Canberra, MA, 2006.

Hedman, J., and Kalling, T. "The Business Model Concept: theoretical underpinnings and empirical illustrations," *European Journal of Information Systems* (12:1),2003, pp. 49–59.

Holzmüller, H., and Schlüchter, J. "Delphi study about the future of B2B marketplaces in Germany," Electronic Commerce Research and Applications, (1:1), 2002, pp. 2-19

Jelassi, T., and Leenen, S „An E-Commerce Sales Model for Manufacturing Companies: A Conceptual Framework and a European Example," *European Management Journal*, (21:1), 2003, pp. 38-47.

Kim, J., and Lee, J. "Critical Design Factors for Successful E-Commerce Systems," *Behaviour and Information Technology* (21:3), 2002, pp. 185-199.

Knotzer, N., and Madlberger, M. "Consumers' Interest in Personalized Recommendations. The Role of Product-Involvement and Opinion Seeking". *Proceedings of the 40th Hawaii International Conference on System Sciences (HICSS),* Waikoloa, HI, January 2007.

Lam, L., and Harrison-Walker, L "Toward an objective-based typology of e-business models," *Business Horizons* (46:6), 2003, pp. 17-26.

Milgrom, P., and Roberts, J. *Economics, Organization, and Management,* Prentice Hall, Englewood Cliffs, NJ, 1992.

Osterwalder, A., and Pigneur, Y., and Tucci, C "Clarifying business models: Origins, present, and future of the concept," *Communications of AIS*, (16), 2005, pp.1-25

Osterwalder, A., and Pigneur, Y. "An eBusiness model ontology for modeling eBusiness," *Proceedings of 15th Bled eCommerce Conference*, Bled, Slovenia, 06/17-19, 2002.

Pateli, A., and Giaglis, G. (2004) "A research framework for analysing eBusiness models," *European Journal of Information Systems* (13:4), 2004, pp. 302–314.

Rappa, M. Business Models on the Web. http://digitalenterprise.org/models/models.html, 2002.

Schmid, B. *Electronic Mall: Banking and Shopping in Globalen Netzen,* Teubner, Stuttgart, Germany, 1995.

Schmid, B., and Lindemann, M. "Elements of a Reference Model for Electronic Markets," *Proceedings of the 31st Hawaii International Conference on System Sciences,* Blanning R. and King D., (eds), pp 193-201, Hawaii, HI, January 1998.

Selz, D., and Schubert, P. "Web Assessment: A Model of the Evaluation and the Assessment of Successful Electronic Commerce Applications," *Electronic Markets* (7:3), 1997, pp. 46-48.

Srivastava, R., and Shervani, T., and Fahey, L. "Market-based assets and shareholder value: A framework for analysis," *Journal of Marketing* (62: January), 1998, pp. 2-18.

Timmers, P. "Business models for electronic markets," *Electronic Market* (8:2), 1998, pp.2–8.

Walczuch, R., and Lundgren, H. "Psychological antecedents of institution-based consumer trust in e-retailing," *Information and Management* (42:1), 2004, pp. 159-177

Weill, P., and Vitale, M.R. (ed.). *Place to Space: Migrating to eBusiness Models*. Harvard Business School Press, 2001, Boston.

Williamson, O.E. (1975): *Markets and Hierarchies: Analysis and Antitrust Implications. A Study in the Economics of Internal Organization,* The Free Press, New York, NY.

Wotif (2006) "Half Year Report", www.wotif.com.au, Period Ended 31 December 2006, February 13, 2007.

Yu, H.-C., and Hsu, C.-S., and His, K.-H. "Setting up an E-Marketplace: A Three-Stage Approach," *Technology in Society* (24:4), pp. 473-482.