

Modeling Optimal Multichannel Strategies in Service Industries

We demonstrate how service companies can optimize their multichannel strategy by using a customer equity approach. We simulate the effect of channel choices on customer retention with a 2x3 between-subjects experimental design that varies the channel (internet vs. store) and customer decision stages (search, purchase, and after sales). We combine the experimental results with data about channel revenues and costs from a major European travel company and calculate the channel strategy for this firm which maximizes the firm's customer equity. We differentiate between three different shopper segments (online, multichannel, and store) and vary their size. Results show that the travel company can, under certain conditions, increase customer equity by up to 34 % when restricting after sales services to the Internet and motivating multichannel shoppers to enhance their online purchasing.

Keywords: multichannel management, customer equity, customer retention, service marketing

Submitted to *EMAC 2010 Conference, Service Marketing Track*

Introduction

The practice of multichannel management has become a widely used strategy in multiple service and retailing industries. Today, about 40% of companies employ three or more channels, while another 42% sell their services and products through two channels (DMA 2005). By 2011, 47% of all business transactions are expected to be Internet-enabled (Jupiter 2006). Researchers have studied multichannel topics such as drivers of channel choice (e.g., Montoya-Weiss, Voss, & Grewal, 2003), channel migration behavior (e.g., Ansari, Mela, & Neslin, 2008), and channel cannibalization (e.g., Deleersnyder et al., 2002). Still, important questions on multichannel management remain to be answered (Rangaswamy & van Bruggen, 2005).

In this research, we try to locate the optimal channel mix for distributing products to existing customers, a key question for multichannel management (Neslin et al., 2006). In practice, no common answer to this question seems to exist, as AMAZON exclusively distributes through the Internet, whereas BARNES & NOBLE uses both physical stores and the Internet, and several local book stores focus on their bricks-and-mortar business, neglecting the online channel. Research-wise, the question which channels a company should employ has received only limited research attention. Some studies have been concerned with the optimal mix of *communication* channels (e.g., radio and TV, direct marketing, Web sites) to *acquire new* customers, while our focus is on *distribution* channels to *retain existing* customers (Verhoef & Donkers, 2005; Villanueva, Yoo, & Hanssens, 2008).

Our contribution is twofold. First, we show how companies can determine optimal multichannel strategies that maximize customer equity (CE), with CE being “the total of the discounted lifetime values summed over all of the firm’s current and potential customers” (Rust, Lemon, & Zeithaml, 2004, p. 110). In our model, we differentiate between three stages of customers’ decision process (i.e., search, purchase, and after sales) and three shopper segments (online, multichannel, and store). We apply our model to a leading European travel company that distributes through physical stores and the Internet. We conduct an experimental study to estimate customer retention rates for different channel constellations and obtain information on channel revenues and costs from the company’s database.

Second, we provide evidence that customer retention rates differ between channels, decision stages, and shopper segments. No study has yet considered the impact of multiple channels on customer retention across all three customer decision stages and for different segments. Moreover, we contribute to the multichannel literature by using an experimental design that controls for possible self-selection biases. As such, our experiment enables us to understand the cause-and-effect relationship between customers’ channel choices and customer retention.

In the remainder of the paper, we proceed as follows. We first present our conceptual framework. We then present our experimental study and model optimal multichannel strategies. In the final section, we discuss implications.

Conceptual Framework

Figure 1 shows our conceptual framework for determining optimal multichannel strategies which draws from Neslin et al.’s (2006) research agenda for multichannel customer management.

-- Figure 1 about here --

When making a buying decision, customers progress through the stages of search, purchase, and after sales. In each decision stage, customers choose among available channels.

Customers behave heterogeneously with respect to available channels from a company (Keen et al., 2004; Neslin et al., 2006). Based on customers' prior channel behavior, most studies distinguish between single channel and multichannel shoppers, with the latter being defined as customers that purchase from a particular company in more than one channel (Ansari, Mela, & Neslin, 2008; Thomas & Sullivan, 2005). We allow shopper segments' behavior to differ in each decision stage. As part of their channel strategy, companies have to decide which channels to employ. Customers' channel choices affect CE via their influence on customer retention (and, subsequently, channel revenues) as well as costs. Extant research has shown that channels affect customer retention, but results are mixed: While some report higher loyalty when the Internet and stores are offered (Danaher, Wilson, & Davis, 2003; Shankar, Smith, & Rangaswamy, 2003; Wallace, Giese, & Johnson, 2004), others suggest that increased Internet usage may erode loyalty (Ansari, Mela, & Neslin, 2008).

Experiment and Modeling

To measure the effect channel strategies have on customer retention, we conduct a role-playing experiment. We use the fictitious travel company ABC-Travel, which allows us to control for previous experiences customers might have with a particular company and thus to generalize our findings.

Method and sample

A total of 4,796 consumers (being at least 18 years old) were invited to participate in the experiment via email, using age and gender as quota criteria. 1,574 consumers responded, 679 of which were excluded based on either missing data or a too short (i.e., < five minutes) or too long (i.e., > 60 minutes) response time. This resulted in a final sample size of 895 (response rate = 18.7 %) and corresponding group sample sizes between 138 and 154. Gender was divided roughly equal with 46.7 % males. Age ranged from 18 to 77 years (mean = 46.1; SD = 14.7).

The experimental design was a two (channel: internet or store) by three (decision stage: search, purchase, or after sales) between-subjects design (i.e., six conditions). Each of the six conditions relates to a hypothetical role-playing exercise that asks participants to envision themselves as long-term customers of the fictitious travel company ABC-TRAVEL. We assign respondents randomly to the six scenarios. We report our manipulations in Appendix A.

Measures, manipulation checks, and experimental results

After presenting the scenarios, we measured repeat purchase intentions with two reflective items ("Prefer ABC-TRAVEL in the future"; "Consider ABC-TRAVEL my first choice"; Zeithaml, Berry, & Parasuraman, 1996) using a seven-point scale (1 = "disagree completely", 7 = "agree completely"). Prior channel behavior was measured by asking "In the last 5 years, what percentage of your vacations have you booked through an online travel agent". Our repeat purchase intentions measure was highly reliable ($\alpha = .95$; mean = 4.89; SD = 1.70).

The questionnaire included manipulation checks to test if participants perceived the channels as we anticipated. The results show that our channel manipulation was successful. To ascertain external validity, we measured the perceived realism of the scenarios using three reflective items (e.g., "I think the description of the situation is very realistic"; $\alpha = .91$). The average score was 5.7 out of 7 (1 = "not realistic at all", 7 = "absolutely realistic"; SD = 1.37).

We conduct a two-way ANOVA to examine the effects of channel and decision stage on repeat purchase intentions. We find that both channel ($M_{\text{internet}} = 5.03$; $M_{\text{store}} = 4.77$; $F_{(1,894)} = 5.88$, $p < .05$) and decision stage ($M_{\text{search}} = 4.81$; $M_{\text{purchase}} = 4.69$; $M_{\text{after sales}} = 5.18$; $F_{(2,893)} = 7.35$, $p < .05$) have significant main and interaction ($F_{(2,893)} = 23.48$, $p < .05$) effects on customers' repeat purchase intentions.

Modeling optimal channel strategies

In modeling optimal channel strategies, we first obtain the model input by using our experimental results on repeat purchase intentions and prior channel behavior to determine customer retention rates and shopper segments. Information on channel revenues and costs was obtained from the travel company's databases. Based on this data, we calculate customer lifetime values (CLV) for each shopper segment and each channel setting. In the final step, we determine CE of optimal and probable channel choices for shopper segments of varying size. Whereas the optimal channel setting corresponds to the CLV maximizing setting for each shopper segment, each segment's most probable channel setting is given where the retention rate is highest.

The three segments of store, multichannel, and internet shoppers are identified by splitting our sample into three groups according to their prior channel behavior, with cutoffs at the 33.33th and 66.66th percentiles (store: $n = 308$, $M = .06\%$, $SD = .25\%$; multichannel: $n = 257$, $M = 15.65\%$, $SD = 11.66\%$; internet: $n = 314$, $M = 75.51\%$, $SD = 19.17\%$).

We use different functions to transform repeat purchase intentions into retention rates and compare our modeling results between them (Equations 1 to 3):

$$(1) \quad r(RPI) = a + b * RPI$$

$$(2) \quad r(RPI) = a + b * \exp(RPI)$$

$$(3) \quad r(RPI) = \begin{cases} 99.99 & \text{if } RPI \geq 6 \\ .01 & \text{if } RPI < 6 \end{cases}$$

where RPI stands for repeat purchase intentions, r for customer retention rates, and a and b are constant parameters, with $r_{\text{max}} = 99.99$ and $r_{\text{min}} = .01$, and RPI values ranging from 1.00 to 7.00.

Table 1 includes retention rates for each segment and channel setting. For the online shopper segment, customer retention is maximized when customers use the Internet across all three decision stages. For both store and multichannel shoppers, customer retention is highest when they use the Internet for search and then make purchases in the store. In the after sales stage, store shoppers' retention increases when they visit the store, whereas multichannel shoppers' prefer using the Internet.

-- Table 1 about here --

As Table 1 shows, average yearly revenues and costs per customer differ between each decision stage and both channels (i.e., store and internet). Using revenues and costs, average yearly profits per customer are calculated.

Based on customer retention rates and channel revenues and costs, we calculate CLV for each shopper segment and each channel setting. We first calculate average customer retention rates for the six experimental conditions and each shopper segment. A full channel setting can then be represented by the mean of three customer retention rates, one for each decision stage. CLV for each shopper segment and channel setting is computed using Equation 4:

$$(4) \quad CLV_{cs} = \bar{P}_{cs} \sum_{t=1}^{\infty} \frac{r_{sc}^t}{(1+d)^t},$$

where r is the retention rate for each shopper segment s and channel setting c per period t , \bar{P} is the average yearly profit per customer, and d is the discount rate (.15 in our case).

CLV for each shopper segment and channel setting are illustrated in Table 1. For the online shopper segment, the CLV maximizing channel setting is also the most probable, that is, online shoppers should use the Internet in all three decision stages. The same channel setting maximizes CLV for the multichannel shopper segment. Store shoppers' CLV is highest when they search online, purchase in the store, and use after sales services in the Internet. Results show that online shoppers are the most valuable segment.

We calculate CE according to Equation 5:

$$(5) \quad CE = \sum_{s=1}^S w_s * CLV_{cs},$$

where CLV for each shopper segment s is weighted by the size of the segment w . In our analysis we compare CE for both the optimal and the most probable channel settings and vary segment sizes.

Results show that CE increases with the size of the online shopper segment. The worst case scenario is a customer base with 100 % store shoppers that follow their preferred channel setting (search = internet; purchase = store; after sales = store). In our case, the travel company can improve CE for both the multichannel and the store shopper segment when customers are steered to the optimal channel setting. For instance, CE can be increased by 33.63 % (for the linear function) when all store shoppers use the Internet for after sales instead of visiting the store. Detailed results are provided in Appendix B.

Implications

In this research, we have shown how service companies can determine optimal multichannel strategies that maximize CE. Our approach can be used by other service companies that want to identify a CE maximizing multichannel strategy. Travel companies planning to implement our approach have to gather data on channel revenues and costs, while companies from other service industries also have to collect information on channel choices and customer retention rates generated here through a role-playing experiment.

This study also adds to our understanding of multiple channels' impact on customer retention. While prior research has only compared customer retention for channel choices in the purchase stage (e.g., Shankar, Smith, & Rangaswamy, 2003), we investigated channel choices across all three decision stages and for different shopper segments. While internet shoppers' retention is highest for using the Internet in all three decision stages, store and multichannel shoppers also search in the Internet but purchase in the store. Store shoppers keep on using stores for after sales services, whereas multichannel shoppers return to the Internet.

References

- Ansari, A., Mela, C.F., & Neslin, S.A. (2008). Customer Channel Migration. *Journal of Marketing Research*, 45 (February), 60-76.
- Danaher, P.J., Wilson, I.W., & Davis, R.A. (2003). A Comparison of Online and Offline Consumer Brand Loyalty. *Marketing Science*, 22 (Fall), 461-76.
- Deleersnyder, B., Geyskens, I., Gielens, K., & Dekimpe, M.G. (2002). How Cannibalistic Is the Internet Channel? A study of the Newspaper Industry in the United Kingdom and The Netherlands. *International Journal of Research in Marketing*, 19 (December), 337-48.

- DMA (2005). *2005 Multichannel Marketing Report*. The Direct Marketing Association, NY.
- Jupiter Research (2006). *Jupiter Research Internet Shopping Model*. New York.
- Keen, C., Wetzels, M., de Ruyter, K., & Feinberg, R. (2004). E-Tailers versus Retailers. Which Factors Determine Consumers Preferences. *Journal of Business Research*, 57 (July), 685-695.
- Montoya-Weiss, M.M., Voss, G.B., & Grewal, D. (2003). Determinants of Online Channel Use and Overall Satisfaction with a Relational Multichannel Service Provider. *Journal of the Academy of Marketing Science*, 31 (Fall), 448-458.
- Neslin, S.A., Grewal, D., Leghorn, R., Shankar, V., Teerling, M.L., Thomas, J.S., & Verhoef, P.C. (2006). Challenges and Opportunities in Multichannel Customer Management. *Journal of Service Research*, 9 (November), 95-112.
- Rangaswamy, A. & van Bruggen, G. (2005). Opportunities and Challenges in Multichannel Marketing: An Introduction to the Special Issue. *Journal of Interactive Marketing*, 19 (Spring), 5-11.
- Rust, R.T., Lemon, K.N., & Zeithaml, V.A. (2004). Return on Marketing: Using Customer Equity to Focus Marketing Strategy. *Journal of Marketing*, 68 (January), 109-127.
- Shankar, V., Smith, A.K., & Rangaswamy, A. (2003). The Relationship between Customer Satisfaction and Loyalty in Online and Offline Environments. *International Journal of Research in Marketing*, 20 (June), 153-175.
- Thomas, J.S. & Sullivan, U.Y. (2005). Managing Marketing Communications with Multichannel Customers. *Journal of Marketing*, 69 (October), 239 - 251.
- Villanueva, J., Yoo, S., & Hanssens, D.M. (2008). The Impact of Marketing-Induced vs. Word-of-Mouth Customer Acquisition on Customer Equity Growth. *Journal of Marketing Research*, 48-59.
- Wallace, D.W., Giese, J.L., & Johnson, J.L. (2004). Customer Retailer Loyalty in the Context of Multiple Channel Strategies. *Journal of Retailing*, 80 (Winter), 249-263.
- Zeithaml, V.A., Berry, L.L., & Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. *Journal of Marketing*, 60 (April), 31-46.

Figure 1: Framework for Determining Optimal Multichannel Strategies

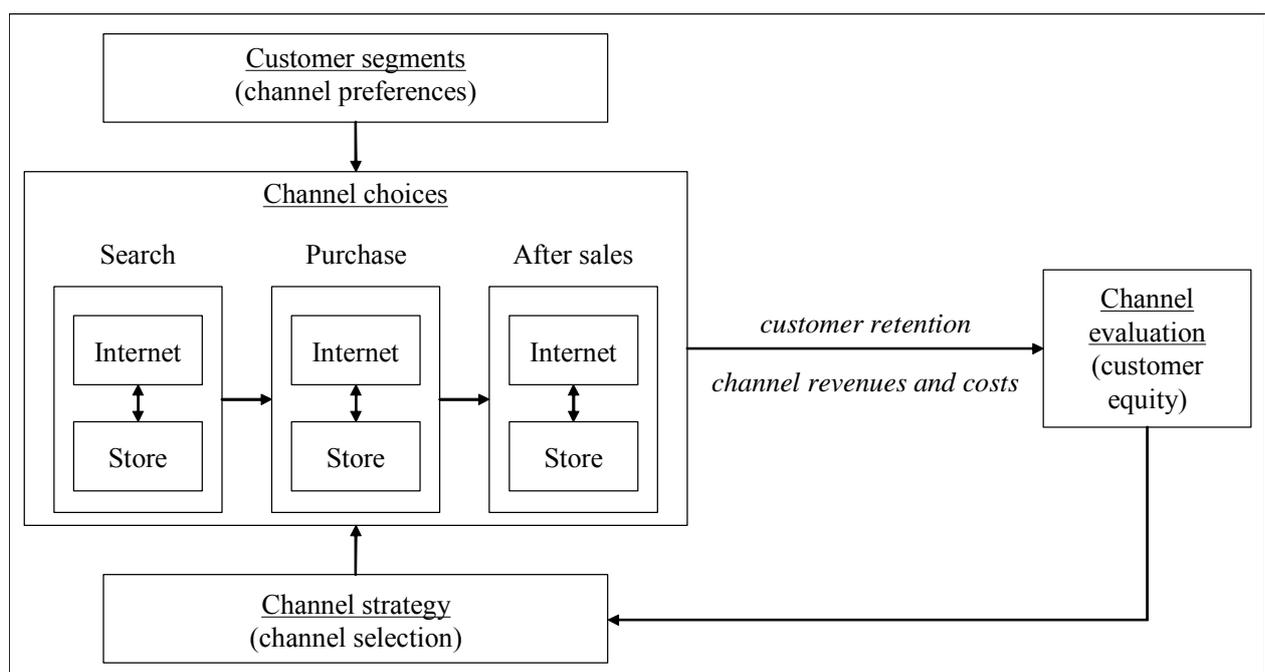


Table 1: CLV for Different Channel Choices and Shopper Segments

Channel choice setting	Shopper segments	r_1	r_2	r_3	\bar{R}_S	\bar{R}_P	\bar{R}_{AS}	\bar{C}_S	\bar{C}_P	\bar{C}_{AS}	\bar{R}_{total}	\bar{C}_{total}	\bar{P}	CLV_1	CLV_2	CLV_3	CLV_{1-3}
1: $I_S + I_P + I_{AS}$	<i>Online</i>	.73	.37	.68										€209.17	€56.00	€176.34	€147.17
	Store	.58	.25	.44	€10.00	€1,186.00	€0.00	€52.74	€1,015.76	€7.70	€1,196.00	€1,076.20	€119.80	€121.26	€33.66	€74.34	€76.42
	Multichannel	.69	.34	.67										€180.69	€49.60	€166.77	€132.35
2: $I_S + I_P + St_{AS}$	Online	.66	.31	.57										€106.35	€28.33	€78.08	€70.92
	Store	.63	.33	.53	€10.00	€1,186.00	€9.03	€52.74	€1,015.76	€58.29	€1,205.03	€1,126.79	€78.24	€95.72	€31.14	€66.17	€64.34
	Multichannel	.68	.34	.63										€114.59	€32.62	€95.73	€80.98
3: $I_S + St_P + I_{AS}$	Online	.68	.35	.63										€130.71	€39.05	€110.90	€93.55
	Store	.70	.37	.61	€10.00	€1,716.63	€0.00	€52.74	€1,575.52	€7.70	€1,726.63	€1,635.86	€90.78	€138.98	€43.61	€103.86	€95.48
	<i>Multichannel</i>	.71	.35	.69										€148.30	€40.50	€135.72	€108.17
4: $I_S + St_P + St_{AS}$	Online	.61	.29	.52										€55.60	€16.23	€40.90	€37.58
	Store	.75	.45	.70	€10.00	€1,716.63	€9.03	€52.74	€1,575.52	€58.29	€1,735.67	€1,668.45	€49.22	€92.24	€31.45	€76.60	€66.76
	Multichannel	.70	.36	.65										€78.04	€22.11	€64.59	€54.91
5: $St_S + I_P + I_{AS}$	Online	.62	.28	.51										€141.69	€38.81	€97.33	€92.16
	Store	.55	.21	.42	€81.31	€1,186.00	€0.00	€121.85	€1,015.76	€7.70	€1,267.31	€1,145.31	€122.01	€113.47	€27.52	€71.17	€70.72
	Multichannel	.63	.29	.59										€149.42	€41.12	€128.29	€106.28
6: $St_S + I_P + St_{AS}$	Online	.55	.22	.40										€73.54	€18.70	€42.87	€45.04
	Store	.61	.29	.51	€81.31	€1,186.00	€9.03	€121.85	€1,015.76	€58.29	€1,276.35	€1,195.90	€80.45	€90.39	€26.72	€64.16	€60.42
	Multichannel	.63	.29	.59										€98.52	€27.12	€84.59	€70.08
7: $St_S + St_P + I_{AS}$	Online	.56	.26	.44										€89.90	€26.77	€61.49	€59.39
	Store	.67	.33	.53	€81.31	€1,716.63	€0.00	€121.85	€1,575.52	€7.70	€1,797.95	€1,704.96	€92.98	€130.40	€37.82	€100.37	€89.53
	Multichannel	.65	.31	.61										€122.99	€34.01	€104.77	€87.26
8: $St_S + St_P + S_{AS}$	Online	.50	.20	.35										€39.09	€10.60	€22.25	€23.98
	Store	.72	.41	.68	€81.31	€1,716.63	€9.03	€121.85	€1,575.52	€58.29	€1,806.98	€1,755.55	€51.43	€87.92	€28.25	€75.34	€63.84
	Multichannel	.65	.31	.57										€66.10	€18.95	€51.04	€45.36

NOTE: I = internet channel; St = store channel; S = search, P = purchase, AS = after sales, 1 = Equation 1, 2 = Equation 2, 3 = Equation 3, 1-3 = average of Equations 1 to 3; r = customer retention rate; \bar{R} = average yearly revenue per customer; \bar{C} = average yearly cost per customer; \bar{P} = average yearly profit per customer. Maximum customer retention rates for each shopper segment are printed in italics. Maximum CLV for each shopper segment are printed in bold.

Appendix A: Scenarios (translated)

(1) Internet / search

Together with a good friend you want to go on a weekend break to a European capital city. After having agreed on a weekend that suits both of you, you start planning the trip. Since recently, your travel agent ABC-Travel only provides travel information concerning your chosen destination via Internet. ABC-Travel is a big travel agent that offers a full range of travel services through which you already booked various trips in the past. You inquire about your travel options:

- ABC-Travel's Internet site is available any time and from any computer with an Internet connection. The web page is well-designed, it works without any problems, and it loads quickly.
- On ABC-Travel's Internet site, you search for flights to the city of your choice and appropriate hotels there without any assistance. You decide that your search for flights is arranged by airline company and travel date, whereas your hotel search is listed according to different hotel categories. The Internet page then displays different offers for your travel destination.
- For every hotel, information concerning its location, its facilities, and its rooms are available. For many hotels, ratings can be consulted of guests who have stayed there already.

For your travel destination, you identify both offers for flight and hotel. The hotel has been assessed very positively by other guests. You compare the prices of your offers with those made by two other online travel agencies. In both cases, the prices are superior to ABC-Travel. You decide to talk about ABC-Travel's offers with your friend as soon as possible.

(2) Internet / purchase

You have planned a weekend break to a European capital city with a good friend of yours. Together with him, you opted for an offer made by the travel agent ABC-Travel. ABC-Travel is a big travel agent that offers a full range of travel services through which you already booked various trips in the past. Since recently, trips to your chosen travel destination can only be booked via Internet. You book your trip on ABC-Travel's Internet site:

- ABC-Travel's Internet site is available any time and from any computer with an Internet connection. The web page is well-designed, it works without any problems, and it loads quickly.
- For booking, you first introduce travel destination and travel dates. Then you enter your personal information and that of your friend.
- The Internet site has an SSL-secured connection. In order to pay for your trip, you enter your credit card number and the three-digit security code that is on the back of your credit card. Before finalizing the payment, all information regarding your trip is displayed again. You confirm your booking by mouse click.
- Your trip, together with the respective booking code is displayed in a new window. The code also serves as the electronic plane ticket that you have to present when checking in for the flight at the airport. A few minutes, later, you receive the confirmation of your trip via email. This concludes the booking process.

You call your friend and inform him that you finished booking the trip.

(3) Internet / after sales

Together with a good friend of yours, you have booked a weekend break to a European capital city using your travel agent ABC-Travel. ABC-Travel is a big travel agent that offers a full range of travel services through which you already booked various trips in the past. Today, one week before the planned departure date, your friend calls you and lets you know that he has to postpone the getaway because of a business trip at short notice. You decide to realize the trip in three months' time. Since recently, changes in booking can only be made on ABC-Travel's Internet site. You therefore visit the travel agent's web page:

- ABC-Travel's Internet site is available any time and from any computer with an Internet connection. The web page is well-designed, it works without any problems, and it loads quickly.
- After briefly touring the site, you find the form in which you have to enter your trip's booking code that is indicated on your ABC-Travel invoice.
- Your travel data is then displayed on screen. You now have the opportunity to make changes to your booking. In order to do this, you enter the new travel dates in the designated fields and confirm by mouse click.
- A new window opens, informing you that for the entered dates, seats are available for both the outbound flight, as well as the return trip. You are able to change your booking paying a 50 Euro service charge that is passed on in its entirety to the airline company.
- For paying the service charge, you enter your credit card number and the three-digit security code that is on the back of your credit card. The Internet page has an SSL-secured connection. You confirm your changed travel dates by mouse click.
- The new travel dates are subsequently displayed, together with the respective booking code. The code also serves as the electronic plane ticket that you have to present when checking in for the flight at the airport. A few minutes, later, you receive the confirmation of your changed travel dates via email. This concludes the process of changing your booking.

You call your friend and inform him that you managed to change the travel dates for your getaway.

Scenarios (continued)

(4) Store / search

Together with a good friend you want to go on a weekend break to a European capital city. After having agreed on a weekend that suits both of you, you start planning the trip. Your travel agent ABC-Travel only provides travel information concerning your chosen destination in its travel agencies (not via Internet). ABC-Travel is a big travel agent that offers a full range of travel services through which you already booked various trips in the past. You inquire about your travel options:

- You reach the nearest ABC-Travel agency in 30 minutes by car or by bus. Opening hours are Monday to Friday from 9am to 7pm and Saturday from 9am to 2pm.
- The travel agency is well-designed. You don't have to wait, Mrs. Miller, ABC-Travel's customer service agent immediately greets you with a smile.
- Mrs. Miller is very helpful and asks you about your requirements in terms of airline companies, hotel category, and travel dates. Based on your conversation with Mrs. Miller, she prepares a selection of alternatives for your travel destination for you.
- For every hotel, Mrs. Miller provides you with information concerning its location, its facilities, and its rooms. Additionally, she informs you about what other clients have told her about the various hotels.
- Mrs. Miller is keen to respond to questions you have concerning the different alternatives. Mrs. Miller is friendly to you and highly motivated.

Mrs. Miller identifies both offers for flight and hotel to your travel destination. She tells you that the hotel has been assessed very positively by other guests. Since there are no other travel agencies in the area, you trust that the offers ABC-Travel made you cannot be found cheaper elsewhere. You decide to talk about ABC-Travel's offers with your friend as soon as possible and begin your 30-minute way home.

(5) Store / purchase

You have planned a weekend break to a European capital city with a good friend of yours. Together with him, you opted for an offer made by the travel agent ABC-Travel. ABC-Travel is a big travel agent that offers a full range of travel services through which you already booked various trips in the past. Your travel agent ABC-Travel only lets you book trips to your chosen travel destination in its travel agencies (not via Internet). You book your trip with ABC-Travel:

- You reach the nearest ABC-Travel agency in 30 minutes by car or by bus. Opening hours are Monday to Friday from 9am to 7pm and Saturday from 9am to 2pm.
- The travel agency is well-designed. You don't have to wait, Mrs. Miller, ABC-Travel's customer service agent immediately greets you with a smile.
- You talk to Mrs. Miller and tell her which offer you would like to book. Mrs. Miller is very helpful and carries out the booking for you.
- Using your credit card that you give to Mrs. Miller, you pay for your trip in the travel agency. You then sign the respective receipt for confirming the payment.
- Mrs. Miller then compiles your travel documents, and also gives you the booking code that serves as the electronic plane ticket you have to present when checking in for the flight at the airport. This concludes the booking process.
- Mrs. Miller is keen to respond to questions you have concerning the booking. Mrs. Miller is friendly to you and highly motivated.

Once you reach home after 30 minutes, you call your friend and inform him that you finished booking the trip.

(6) Store / after sales

Together with a good friend of yours, you have booked a weekend break to a European capital city using your travel agent ABC-Travel. ABC-Travel is a big travel agent that offers a full range of travel services through which you already booked various trips in the past. Today, one week before the planned departure date, your friend calls you and lets you know that he has to postpone the getaway because of a business trip at short notice. You decide to realize the trip in three months' time. Changes in booking can only be made in ABC-Travel's travel agencies (not via Internet). You therefore visit ABC-Travel's nearest agency:

- You reach the nearest ABC-Travel agency in 30 minutes by car or by bus. Opening hours are Monday to Friday from 9am to 7pm and Saturday from 9am to 2pm.
- The travel agency is well-designed. You don't have to wait, Mrs. Miller, ABC-Travel's customer service agent immediately greets you with a smile.
- You talk to Mrs. Miller and tell her that you would like to change the travel dates for your getaway. Mrs. Miller is very helpful. After a brief enquiry, she informs you that for the new dates you requested, seats are available for both the outbound flight, as well as the return trip. For a 50 Euro service charge that is passed on in its entirety to the airline company, Mrs. Miller is immediately able to change the dates of your trip.
- Using your credit card that you give to Mrs. Miller, you pay the service charge for changing your travel dates in the travel agency. You then sign the respective receipt for confirming the payment.
- Mrs. Miller gives you the booking code that serves as the electronic plane ticket you have to present when checking in for the flight at the airport. This concludes the process of changing your booking.
- Mrs. Miller is keen to respond to questions you have concerning the change of your booking. Mrs. Miller is friendly to you and highly motivated.

Once you reach home after 30 minutes, you call your friend and inform him that you managed to change the travel dates for your getaway.

Appendix B: CE for Optimal and Probable Channel Choices

Shopper segments	Segment size	Optimal channel choice				Probable channel choice				% Δ (CE _{optimal} – CE _{probable})			
		CE ₁	CE ₂	CE ₃	CE ₁₋₃	CE ₁	CE ₂	CE ₃	CE ₁₋₃	% Δ ₁	% Δ ₂	% Δ ₃	% Δ ₁₋₃
Online	33.33 %	€59,935,20	€16,910,467	€50,656,600	€42,500,000	€50,967,133	€14,501,000	€44,048,133	€36,504,667	-14.96	-14.25	-13.05	-14.11
Store	33.33 %	0											
Multichannel	33.33 %												
Online	100 %	€71,117,80	€19,040,000	€59,955,600	€50,037,800	€71,117,800	€19,040,000	€59,955,600	€50,037,800	.00	.00	.00	.00
Store	.00 %	0											
Multichannel	.00 %												
Online	.00 %	€47,253,20	€14,827,400	€35,312,400	€32,463,200	€31,361,800	€10,693,000	€26,044,000	€22,698,400	-33.63	-27.88	-26.25	-30.08
Store	100 %	0											
Multichannel	.00 %												
Online	.00 %	€61,434,60	€16,864,000	€56,701,800	€44,999,000	€50,422,000	€13,770,000	€46,144,800	€36,777,800	-17.93	-18.35	-18.62	-18.27
Store	.00 %	0											
Multichannel	100 %												

NOTE: 1 = Equation 1, 2 = Equation 2, 3 = Equation 3, 1-3 = average of Equations 1 to 3; % Δ = Difference between CE_{optimal} and CE_{probable} in percentages. Maximum CE is printed in bold. Maximum differences between CE_{optimal} and CE_{probable} are printed in italics. The company currently has about 340,000 customers.