Omni-Channel Retailing
The Demand for Cross-Channel Payment Infrastructure Service

Payments Cards and Mobile Research
Omni-Channel Retailing for RBTE

Contents

1.

Omni-Channel Retailing –
The Demand for Cross-Channel
Payment Infrastructure Service

1.1 Executive Summary

Online technologies, mobile devices and new consumer demands are rapidly transforming the retail sector and the payments industry. They offer retailers and payments industry players new opportunities to generate differentiation and new revenues.

Multiple recent technological innovations have changed the way consumers consider shopping. Merchants need to embrace the omni-channel trend to cater for new customer consumption patterns and expectations.

The transition is difficult as pure e-commerce players lack in-store expertise and brick and mortar merchants are working hard to integrate and unify their online and physical entities. In practical terms, implementing omni-channel strategy requires a major effort from retailers and the supporting payments industry.

An important first step consists of significantly developing IT infrastructure to simplify systems and create a single customer database. Merchants also need to reorganize team structures and even financial and sales reporting in order to move away from the single-channel approach.

The review indicates merchants need to rework their supply chain management and logistics processes, especially to take into account inventories, orders, CRM & consumer data, loyalty, real-time stock verification to support click & collect as well as payments to restructure the whole interaction between online and offline to the customer's convenience.

At the heart of the retailer's processes, a cross-channel payment infrastructure combined with multi-payment acceptance services appears to be a business enabler, providing a basis for better customer knowledge and improving the consumer experience.

Omni-channel retailing is here to stay and will grow rapidly. Retailers need to have a strong global payment strategy to succeed. It is about creating seamless customer dialogue through every stage of the customer journey, from pre-purchase research to post-sales support and after sales care.

At the heart of this challenge is the role played by payments systems. These can provide the basis for customer identification verification, purchase validation and upstream/downstream services and support, seamlessly to the customer's convenience.

Consumer driven change, payment and technology fragmentation through innovation and market dynamics, security and their associated costs are now a CEO/Board tracked item, both in the retail sector and in the payments industry.

Chris HARRIS
Director of Sales & Marketing / Ingenico Northern Europe

1.2 Introduction

The word omni comes from the Latin word omnis, which can mean all or universal. Used in the world of retailing services and for payment services this can have various interpretations along with other categories like "multi-channel" and "cross-channel".

In order to be clear in this study, the terms "omni-channel retailing', "cross-channel infrastructure" and "multi-payments acceptance" are used for specific purposes. The objective is not to confuse interested readers by using the synonyms "omni-", "multi-" or "cross-" all over the study for different purposes:

Omni-channel retailing reflects the way modern retailers understand how consumers take their own path to purchase through any of the various consumer touchpoints offered by retailers. These may include traditional brick-and-mortar stores, but also any of the ever-increasing number of virtual channels, such as online, mobile and social networks. In addition, omni-channel retailing demands real-time stock management across all channels and a unique view on all customer data including all types of touchpoints.

In the retail market, omni-channel retailing is the term used by modern retailers when responding to the consumer driven change to their retail business and their existing payments infrastructure.

Cross-channel payment infrastructure reflects the term used by payments infrastructure providers to support the retailers' demand for channel-independent payment service processing on a single platform solution. These may include payments in-store at POS terminals, roaming mPOS terminals, online and in-app payments. As payment service transactions are technically processed separately by channel and by payment service type, single cross-channel payment infrastructure solutions allow the merchants to provide common services to achieve a flexible in-consumer experience.

Multi-payments acceptance is a term used in this study for multi-payment services acceptance cross-channel. This may include multi-channels serviced (i.e. POS terminals, online shops, payment apps) and multi-payment means accepted at all of those channels. Payments means may include cards, IBAN-based payments, online wallets, digital wallets, prepaid products.

Multiple payments acceptance includes new or emerging payment methods – we are seeing a high growth in new payment methods including Bank Transfer, Online Wallet, Digital Wallets, Account on File to name a few – these are referred to as New Payments Types as they often add services to the transaction payment.

With this in mind, Payments Cards and Mobile collaborated with Ingenico to document omni-channel retailing trends in the industry to garner insights into the level with which cross-channel payment infrastructure services and multi-payments acceptance services, including new and emerging payment methods, can support retailers' strategy to service connected consumers.

The study also sought to understand what retailers want to see in terms of functionality from vendors, plus perspectives on security, fraud, payment ecosystem responsibilities and service delivery models.

The methodology used in this study is composed of results from market research both in the retailing sector and the payments industry, and lessons learned from continuous discussions with retailers and payments industry players.
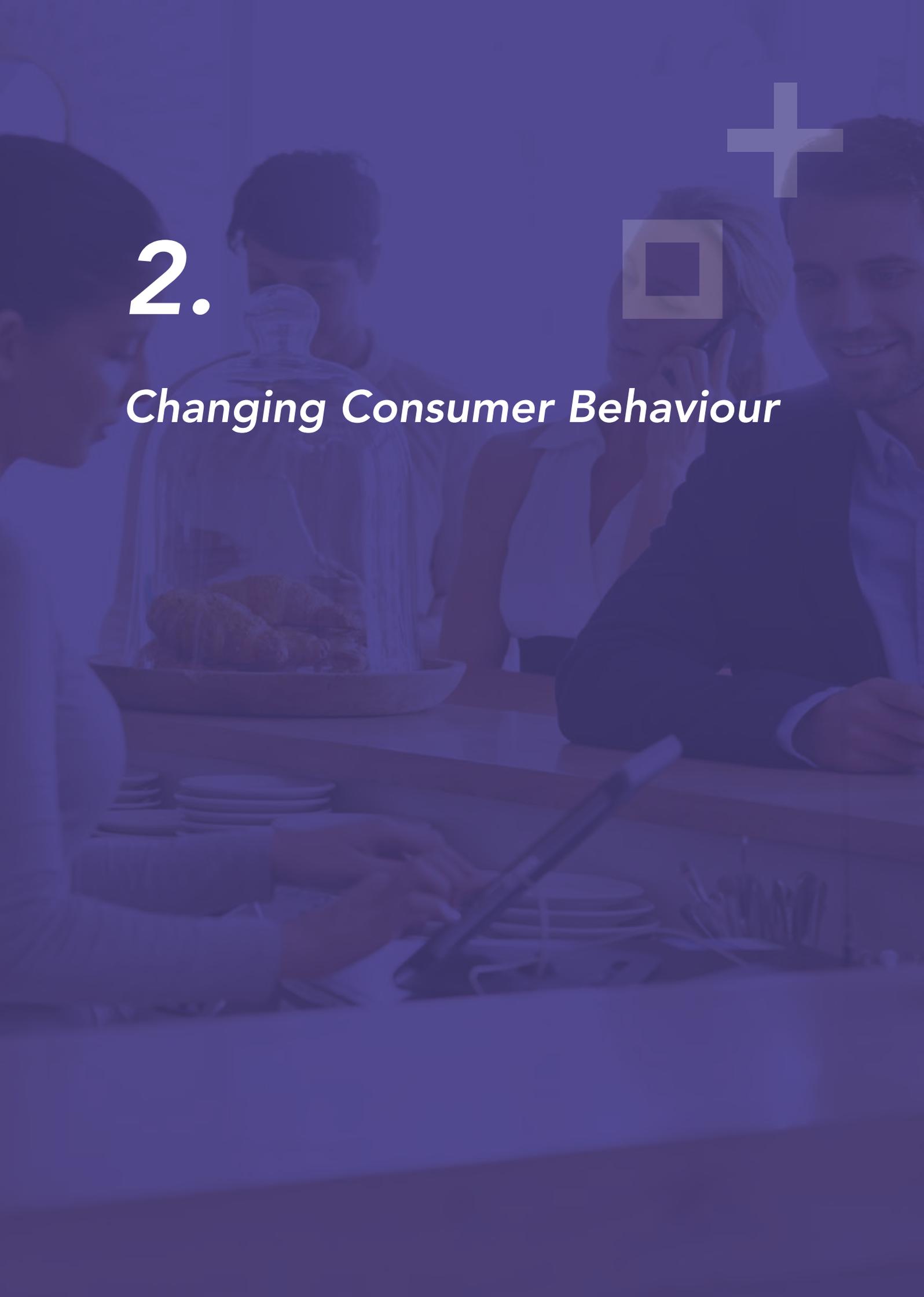
2.

Changing Consumer Behaviour
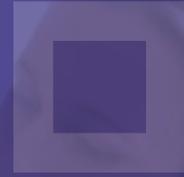
Today's consumers have embraced mobile devices - this change significantly impacts their shopping experience. Consumers are becoming increasingly connected, they have started to purchase anywhere, at any time, from any device. Consequently, pricing is now a hyper sensitive criterion in a transparent digital commerce world.

However, according to Mastercard, consumers consider that shopping experience and convenience prevails over price or rewards. In detail, the study shows that value (44 percent), track record/experience (36 percent), and convenience (34 percent) outpace loyalty rewards (26 percent) as the aspects that drive the omni-shopper back to the same merchant.

Driven by the development of social media and mobile devices, the emergence of permanently connected consumers has impacted their interactions with brands but also their expectations of how to shop using the increasing number of touch points between consumers and merchants, e.g.:

• *In outlets: with or without using mobile devices in-store to look up products or additional information*

• *Mobile in-store: using mobile devices to shop online at the same merchant or at another merchant*

• *In online shops: using PCs, notebooks or tablets to purchase at home or out and about*

• *Outdoor in-app: using apps to shop online or using QR-codes to bridge from merchant posters to its online shop*

(Figure 1: Connected consumers shop omni-channel)

Starts in

Ends in

STORE — 74%

19%

6%

WEB — 26%

60%

13%

MOBILE — 25%

40%

33%

STORE

WEB

MOBILE
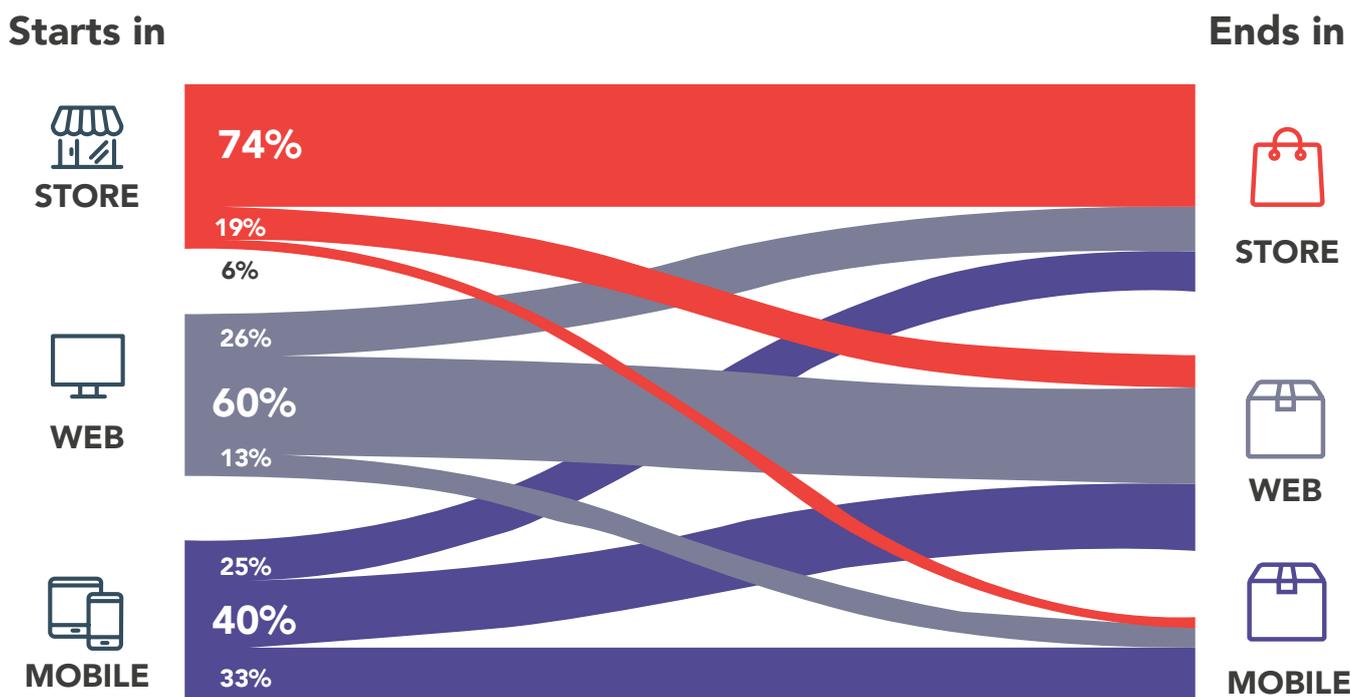
Source: PCM Research

Consumer Behaviour Evolution

Recent studies from the UN and others forecast that an increasing proportion of the population will live in urban environments (66 per cent by 2050). Urban lifestyle along with increasing choices, greater access to alternatives and time pressures, means consumers are becoming less loyal.

Saving time is a recurring rationale for shopping online but it is also a reality in-store as well. In order to shorten the checkout queue, 43 per cent of consumers would appreciate being able to pay using a tablet or another mobile device in-store. (source: Les comportements d'achat des Français: An Opinea study)
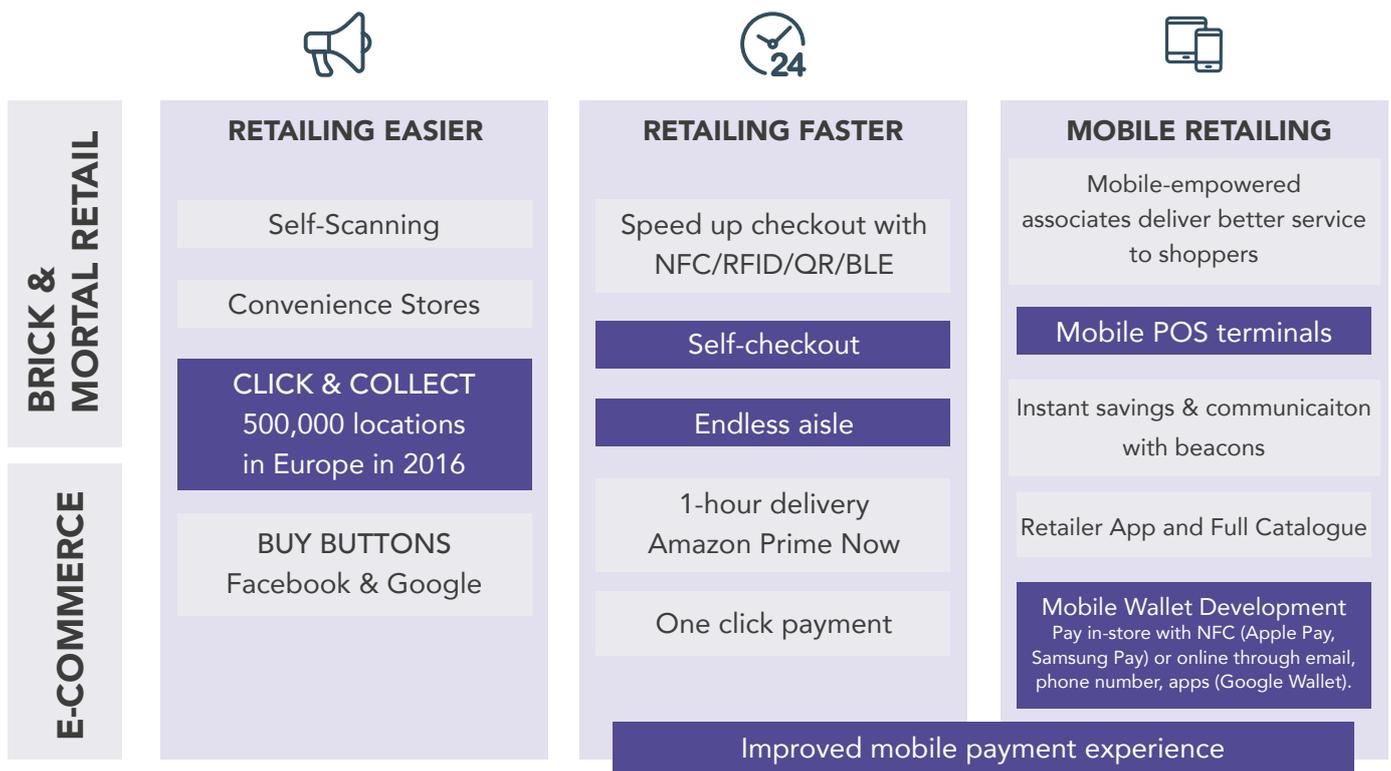
Time is valuable and shoppers perceive it as precious and therefore do not want to waste any. Consequently, they expect absolute efficiency from retailers at every stage of the purchasing process.

With the advance of contactless and internet technologies in combination with mobile apps, smartphones and tablets, many consumers are now expecting greater shopping convenience both in outlets and on the internet. In a digitally connected shopping world, consumers expect no more barriers between face-to-face outlets and e-commerce.

Encouraged by market players like Amazon, Facebook and Google and as reported by many retailer associations, more and more consumers demand more convenient shopping with access to a global retailing market place, and their preferred payment services to be offered by merchants, independent of the channel they purchase from.

However, a high level of convenience does not satisfy all consumers' requirements. Retailers are also expected to provide responsive services, knowledgeable assistance and customisation options, whether customers shop in-store or online, they will no longer accept perceived overpricing and poor standards of customer service and are likely to switch to alternatives.

(Figure 2: A changing shopping marketplace – The new Consumers' View)

	RETAILING EASIER	RETAILING FASTER	MOBILE RETAILING
BRICK & MORTAL RETAIL	Self-Scanning	Speed up checkout with NFC/RFID/QR/BLE	Mobile-empowered associates deliver better service to shoppers
	Convenience Stores	Self-checkout	Mobile POS terminals
	CLICK & COLLECT 500,000 locations in Europe in 2016	Endless aisle	Instant savings & communicaiton with beacons
E-COMMERCE	BUY BUTTONS Facebook & Google	1-hour delivery Amazon Prime Now	Retailer App and Full Catalogue
		One click payment	Mobile Wallet Development Pay in-store with NFC (Apple Pay, Samsung Pay) or online through email, phone number, apps (Google Wallet).
		Improved mobile payment experience	

Source: PCM Research.

2.1 Connected Consumers

Mobile devices permanently connected to the internet are seen as a game changer for merchants and the supporting payments industry. In the last decade, consumers have embraced these new technologies. It is estimated that the number of devices connected to the Internet will explode from 10 billion today to 50 billion by 2020 (source: PCM Research).

The individual use of mobile devices and internet technology is giving consumers access to unlimited digital information, allowing them to make more informed decisions. Embraced by the consumers, the demand for a unique omni-channel sales consumer experience has gained significant momentum e.g.:

• Research Online Purchase Offline: Worldwide, 88 per cent of consumers are seeking information online before buying in-store or in-app (source: VivaKiAdvance: Connected Commerce 2016)

• Cross-channel behaviour: 91 per cent of consumers get goods information online before buying in-store. (source: PCM Research)

• Mobile in-store: 75 per cent of French people already used their smartphone in-store to compare prices. (source: PCM Research)

• Connected: 54 per cent of smartphone owners use their mobile to look up merchant information on the go. (source: PCM Research)

• Service: 59 per cent of consumers think that "bricks & mortar" merchants are providing the best advice. (source: PCM Research)

• Pricing is the most sensitive criteria: 50 per cent of users will move for a 5 per cent difference. (source: PCM Research)

• Loyalty: Satisfied mobile consumers report being 40 per cent more likely to buy from other channels at the same merchant. (source: PCM Research)

• Showrooming: In France, 67 per cent of clients think that having the ability to compare and get more information about products via their mobile devices in-store might influence their purchasing decision (source: VivaKiAdvance: Connected Commerce 2016)

• Omni-Channel sales experience: 36 per cent of shoppers consider that experience & convenience prevails over price or rewards (source: MasterCard, The OmniShopper Projects, 2015)

• Social media: The influence and role of social networks and chatrooms on consumers seeking for information is increasing. Also, consumers communicate their shopping experience and their sales recommendations for products and services in social media

Looking into the specific data of major European countries shows that connected consumers are the new normal for retailers and the payments industry.

(Table 1: Connected Consumers in 2015)

CONNECTED CUSTOMERS	🇦🇹	🇧🇪	🇨🇭	🇨🇿	🇩🇪	🇪🇸	🇳🇱	🇮🇹	🇫🇷	🏴	🇸🇪	🇬🇧	SOURCES
Population (in million)	8.70	11.29	**8.33**	10.54	**82.16**	46.44	66.66	60.67	16.98	37.97	9.80	65.34	Eurostat
Households (in million)	3.82	4.70	**3.61**	4.64	**40.26**	18.38	28.92	25.79	7.62	14.11	5.10	28.22	Eurostat
Households with internet access	82%	82%	92%	79%	90%	79%	83%	**75%**	**96%**	76%	91%	91%	Eurostat
Last internet use (individuals, 12 months)	85%	86%	92%	83%	89%	80%	87%	**68%**	**94%**	70%	92%	93%	Eurostat
Internet users who bought online	68%	64%	75%	54%	82%	53%	75%	**38%**	76%	53%	77%	**87%**	PCM research
Last online purchase (individuals, 12 month) (EU: 53%)	58%	55%	69%	45%	73%	42%	65%	**26%**	71%	37%	71%	**81%**	Eurostat
Mobile phone subscriptions per capita	**157%**	116%	142%	119%	117%	108%	**103%**	151%	124%	149%	130%	125.7%	ITU. Int
Smartphone user penetration of mobile phone users	57%	59%	73%	59%	64%	63%	61%	57%	**76%**	**52%**	**76%**	74%	eMarketer
Mobile internet user penetration of mobile phone users	**59%**	61%	76%	79%	66%	66%	64%	61%	**80%**	78%	76%	74%	eMarketer
Tablet user penetration of internet user	22%	23%	22%	**19%**	49%	51%	50%	49%	63%	21%	47%	**64%**	eMarketer
Total B2C Commerce value (€bn)	80.60	183.10	193.90	45.15	524.10	504.20	**842.60**	638.50	180.90	143.40	153.49	752.10	E-Commerce Europe
Online B2C eCommerce value (€bn)	7.50	8.24	8.53	**4.29**	59.70	18.15	64.90	16.61	16.07	7.60	9.67	**157.15**	E-Commerce Europe
B2C e-commerce growth rate GR14/15	14.3%	34.2%	12.3%	23.4%	13.3%	11.6%	14.3%	15.6%	16.1%	17.8%	12.0%	**11.0%**	PCM research
Ø B2C e-commerce amount per eShopper per year	€1,498.5	€1,336.4	€1,492.6	€904.9	€1,001.2	€930.8	€1,501.4	€1,052.1	€1,336.7	**€534.4**	€1,279.2	**€2,979.7**	PCM research
Cross-Border B2C Purchases of individuals (EU: 16%)	**44%**	35%	37%	9%	13%	18%	21%	18%	35%	**4%**	32%	20%	E-Commerce Europe
Online B2C e-commerce share in B2C Commerce	9.3%	4.5%	4.4%	9.5%	11.4%	3.6%	7.7%	**2.6%**	8.9%	5.3%	6.3%	**20.9%**	E-Commerce Europe
Market share of country in European B2C e-commerce	1.65%	1.81%	1.87%	**0.94%**	13.11%	3.99%	14.25%	3.65%	3.53%	1.67%	2.10%	**34.52%**	E-Commerce Europe

Note: eShoppers from 16-74 in % of capita. Data of sources are 2015 figures. Italic figures are estimated.

Note: Figures from 2015. B2C commerce values are for goods & services. Table sorted by commerce value from left to right by

Sources: Eurostat, eCommerce Europe, ITU.int, eMarketer, PCM Research.
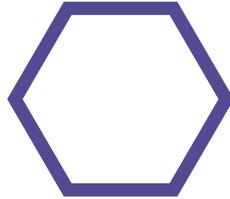
2.2 Consumer Demands drive the Change

According to large retailers, consumer expectations for retailing services will be a seamless omni-channel shopping and payments experience combined with added-value services for consumers across all retail channels, regardless of the challenges this poses the retailer.

Selected omni-channel retailing key criteria reported of consumers' point of view include:

• *Faster Shopping: 52 per cent gave up their purchase due to waiting time at checkout*

• *Flexibility: 92 per cent would appreciate out of stock items being shipped to their home*

• *Flexible delivery options: postal services, in-store at retail outlets and, in the case of digital goods, download*

• *Cross-channel payments: same payment service options independent from the type of touchpoint*

• *Multi-payment services: 71 per cent of the consumers want more payment options at the touchpoint of choice*

• *Connected services & payments in-store and online: expected by 43 per cent consumers*

• *Cross-Border: Consumers are no longer limited by physical or geographic boundaries while purchasing goods and services*

Driven by the development of social media and mobile devices, the emergence of permanently connected consumers has impacted their interactions with brands but also their expectations of how brands interact with them. The increasing number of touch points between consumers and merchants has led to the need to redefine the position of every sales channel: from a siloed organisation to a global brand experience.

As connected consumers shop using more and more touchpoints and sales channels, it has become more difficult for the merchants to analyse the consumers' purchase and payment patterns at an individual level in order to understand how to improve their respective sales strategy accordingly.

It is about creating seamless customer dialogue through every stage of the customer journey, from pre-purchase research to post-sales touches.

Modern retailers are expected to be able to offer the answer to these evolving consumer preferences and deliver seamless omni-channel consumer experiences.

3.

Disruptive Technologies

Shopping and payment services in retail outlets have been pretty straightforward for a long time. The advent of online shopping did not make things more complicated as e-commerce was seen as a separate additional channel for many years.

The innovation of contactless technologies, online communication, mobile devices and mobile apps has significantly changed the customer landscape. Proliferation of channels and fragmentation of payment services has made the channels landscape increasingly complex.

Online technologies and the demands of connected consumers drive the changes that are rapidly transforming the retail sector and the payments industry offering retailers and the payments industry new opportunities to generate differentiation and additional revenues or gain market and customer share, through better customer engagement.

Mobile technologies have changed the way consumers consider shopping. Retailers embracing the omni-channel retailing trends to cater for new customer consumption patterns and expectations that are far more impulsive, immediate and integrated are emerging as market share winners.

3.1 Mobile Devices and Internet Communication

Contactless, mobile apps and mobile devices are going to be increasingly the new normal for consumers, for retailers they offer the potential for competitive differentiation.

In the last decade, innovation of disruptive technologies has started to change the shopping infrastructure, key amongst these are:

• Connected mobile devices allowing consumers to shop at outlets, in-store, in-app and in online shops, thus enabling consumer journeys that start in one channel and completed or fulfilled using another

• Bridging technologies that connect consumers' mobile devices with physical instore e.g.:

  • Proven technologies: contactless NFC/RFID, QR-codes, Bluetooth Low Energy (BLE)

• QR-codes are used to connect consumers to product information, the merchant's online shop and offers

• Most payment accepting POS terminal devices installed are now contactless capable

• Contactless payments using NFC capable smartphones with card credentials stored in the cloud are widely accepted by contactless POS terminals

• Mobile devices with retailer apps in combination with mobile POS terminals (mPOS) can be used by retailer staff in-store. In addition, small and mobile merchants may replace traditional ECR devices with POS terminals by tablet solutions with mPOS terminals

• Retailers can communicate with the individual consumer through retailer-issued mobile apps offered for free download. Typical app functions offered include location finder, QR-code scanning, couponing, special offers/discounts, loyalty, news, shopping lists, purchase e-receipts, and optionally a payment function
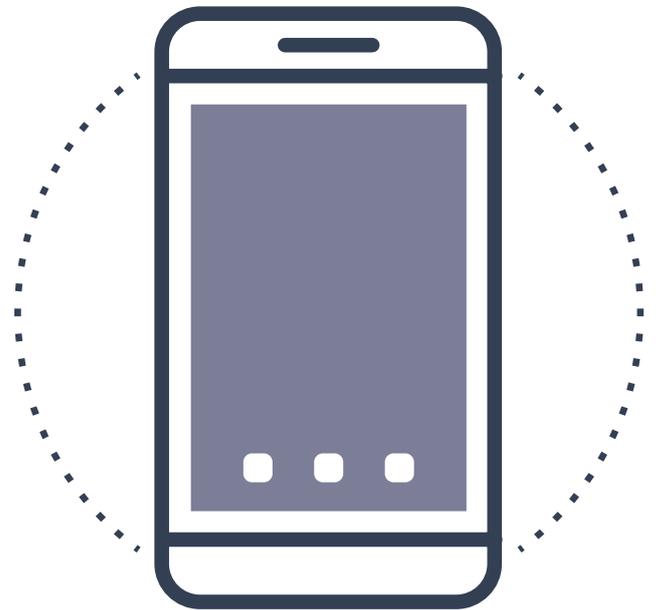
Consumers have embraced mobile technologies and connected mobile devices that enable them to shop cross-borders and cross-channels. Retailers see them as enabler for more consumer convenience and the latent demand consumers have for seamlessly integrated mobile based journeys into their shopping experiences.

Always connected devices are a significant game changer for merchants and the supporting payments industry, an example of this is where a retailer can push a promotion through their mobile app to consumers within a radius at a particular store, offering incentives if the consumer is in store during a specific time window.
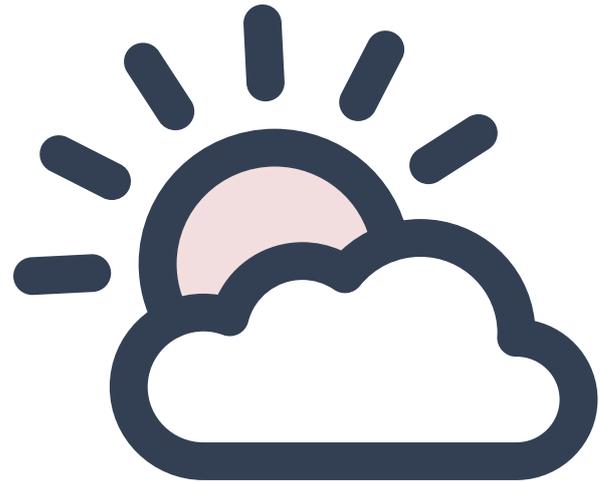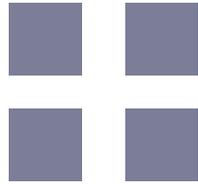
3.2 A Reshaped Payments Landscape

Like retailing systems, payments have traditionally been channel based, POS payments in outlets and payments for e-commerce purchases being a separate, additional payments acceptance channel for many years.

The technology-driven cross-channel payments approach aims to enable customers to search, buy and pay seamlessly across multiple touch points. Card payments in outlets and Card Not Present payments (CNP) for online and mobile transactions are usually identified as two separate payment channels with different security and authentication solutions – they also have differing obligations for the retailer. In order to support consumer demands for a seamless and convenient payment experience, retailers need to combine both channels enabling shopping and card payments cross-channel.

Where this is achieved, merchants acknowledge the value of having traditional card payments combined with new and emerging payment options for consumers – ideally at all consumer touchpoints. Providing a consistent omni-channel shopper experience initially involves development of tokenised acceptance points cross-channel. Tokenisation enables using digital payment types and contactless form-factors like NFC stickers, wearables, Apple Pay, Samsung Pay, Android Pay and digital scheme wallets, without having to store sensitive card data.

In the last decade, innovation of disruptive technologies has started to reshape the payments landscape. In 2017, non-cash payment service types for most European merchants include contactless cards, credit transfers, direct debits, credit cards, digital wallets and prepaid products. In many instances, these payment types are applied to specific use cases in an omni-channel retailing environment.

Outlook: From end-2018, immediate payment services (e.g. Instant SEPA Credit Transfer – SCTinst) may add another cash-less payment service type. In parallel, the card schemes have started to introduce digital wallets and new security levels, tokenisation of card credentials, with the objective of fighting card fraud by removing static card data from merchant systems.

To date, cards have not only dominated POS payments but in many markets, they have been the primary means of online payment, however, account-based bank payments and online wallets (e.g. PayPal) play an increasingly significant role in the e-commerce space. In addition, merchants may accept traditional after-purchase payment means in their online shops and in their outlets:

- Payment on invoice
- Cash-on-delivery, card-on-delivery
- Payment in advance
- Instalments

Based on retailer information and payments industry player reporting, in 2017, we are seeing an increasingly fragmented set of cashless payment services that are relevant for omni-channel merchants from a European point of view.

(See Table 2 on the next page).

(Table 2: Selected relevant Payment Services for European Merchants)

Payment Service Types	Selected Relevant Payment Service Brands
Account-based Bank Payments	**Channels: online, mobile in-app, also: POS**
Direct debits:	IBAN-based SDD bacs ELV paydirekt
Credit transfers:	IBAN-based SCT SOFORT Überweisung MyB iDEAL pingit MobilePay vipps
Immediate payments:	Faster Payments from end-2018: SEPA
Cards, including contactless and prepaid cards	**Channels: POS, online, mobile in-app**
Credit cards:	Mastercard VISA American Express Diners Club International DISCOVER JCB UnionPay
Debit cards:	Mastercard DEBIT VISA DEBIT Maestro VISA Electron V PAY
Digital wallets:	Mastercard VISA Checkout American Express serve
Card form-factors:	Apple Pay SAMSUNG pay Android pay
Airline cards:	UATP AirPlus
Domestic credit cards (accepted on demand, e.g. cross-border)	CartaSi CB
Domestic debit cards (accepted on demand, e.g. cross-border)	Bancontact CB DK VISA bank axept euro 6000 ServiRed 4D MB POS only: girocard BANCOMAT
Advanced Payments	**Channels: POS, online, mobile in-app**
Online-wallets:	PayPal Skrill amazon payments Alipay.com
Prepaid products:	paysafecard
Instalments:	Klarna Mastercard

Source: PCM Research

In addition, more and more consumers expect their preferred payment service options cross-channel, independent of the type of touchpoint they want to purchase from. Based on the technologies existing already today, connected consumers believe that mid-term all relevant payment services can be used cross-channel, including new and emerging payment services beyond cards.

With consumers becoming increasingly connected, the line between online and offline payments continues to blur, the need for a multi-payment acceptance service strategy – in combination with a cross-channel payments infrastructure that bridges the gap between their online activity and bricks-and-mortar points of sale – is vital for merchants.

Furthermore, the implementation of a multi-payment acceptance strategy – supporting the availability of all relevant payment options in any given channel – is a significant challenge for merchants. Solving this challenge will enable merchants to enhance the payment experience for consumers and ultimately contribute to their long-term omni-channel retailing success.

Modern retailers are expected to be able to offer these evolving consumer payment preferences and deliver seamless multi-payment consumer experiences cross-channel.

Payment Use Cases for Omni-Channel Retailing - Merchants' View in 2015

Use Cases	Cashless Payment Service Types									
	Immediate Payments	credit cards	debit cards	domestics debit cards	IBAN-based credit transfers	IBAN-based direct debits	digital wallets	online wallets	prepaid products	Instalments
POS payments in outlets		Mastercard, VISA, American Express, Diners Club International, DISCOVER, JCB, UnionPay, UATP, AirPlus, CartaSi, CB	Mastercard DEBIT, VISA DEBIT	Bancontact, CB, DK VISA, bank axept, 6S, ServiRed, 4B, MB, girocard, BANCOMAT		ELV				
Payments in online shops	Faster Payments	Mastercard, VISA, American Express, Diners Club International, DISCOVER, JCB, UnionPay, CartaSi, CB	Mastercard DEBIT, VISA DEBIT, VISA, V PAY	Bancontact, CB, DK VISA, bank axept, 6S, ServiRed, 4B, MB	native SCT: SOFORT Überweisung, MyB, iDEAL	native SDD: bacs, ELV	Mastercard, VISA Checkout, American Express serve	PayPal, Skrill, amazon payments, Alipay	paysafecard	Klarna, Mastercard billpay
QR-code initiated payments										
BLE initiated payments in-store										
mobile payments in-store										
mobile payments in-app	Faster Payments	Mastercard, VISA, American Express, Diners Club International, DISCOVER, JCB, UnionPay, CartaSi, CB	Mastercard DEBIT, VISA DEBIT, VISA, V PAY	Bancontact, CB, DK VISA, bank axept, 6S, ServiRed, 4B, MB	native SCT: SOFORT Überweisung, MyB, iDEAL, pingit, MobilePay, vipps	native SDD: bacs, ELV	Mastercard, VISA Checkout, American Express serve	PayPal, Skrill, amazon payments, Alipay	paysafecard	
Payments-on-delivery in outlets			Mastercard DEBIT, VISA DEBIT, VISA, V PAY	Bancontact, CB, DK VISA, bank axept, 6S, ServiRed, 4B, MB, girocard, BANCOMAT	pingit, MobilePay, vipps					
Payments on invoice	Faster Payments				native SCT: SOFORT Überweisung, MyB, iDEAL, pingit, MobilePay, vipps	native SDD: bacs, ELV				Klarna, Mastercard billpay

Note: merchants' view on cards includes contactless form-factors like NFC stickers, NFC wearables, Apple Pay, Samsung Pay, AndoidPay.

Note: In this Table, payment use cases are matched with selected payment services relevant for European merchants,

Note: Immediate payments like SCTinst from 2018. Cash in outlets and P2P payments between consumers are not included here.

Source: PCM research..

Payment Use Cases for Omni-Channel Retailing - Consumers' and Merchants' Expectations in 2020

Use Cases	Cashless Payment Service Types									
	Immediate Payments	credit cards	debit cards	domestics debit cards	IBAN-based credit transfers	IBAN-based direct debits	digital wallets	online wallets	prepaid products	Instalments
POS payments in outlets					native SCT	native SDD				
Payments in online shops					native SCT	native SDD				
QR-code initiated payments / BLE initiated payments in-store / mobile payments in-store / mobile payments in-app					native SCT / native SCT	native SDD				
Payments-on-delivery in outlets					native SCT	native SDD				
Payments on invoice					native SCT	native SDD				

Note: merchants' view on cards includes contactless form-factors like NFC stickers, NFC wearables, Apple Pay, Samsung Pay, AndoidPay.

Note: In this Table, payment use cases are matched with selected payment services relevant for European merchants,

Note: Immediate payments like SCTinst from 2018. Cash in outlets and P2P payments between consumers are not included here.

Source: PCM research..

4.

Omni-Channel Retailing

4. Omni-Channel Retailing

Many retailers have been focusing on big store networks for decades and have underestimated the potential of new sales channels, treating them as separate businesses.

Retail was once defined by bricks & mortar stores; however, over the last decade the retail industry has fully embraced online shopping to help satisfy increasing consumer demand for speed and convenience.

Consequently, the retail merchant environment is experiencing change at a faster pace than ever before. Adapting to this change is a sizeable undertaking involving profound restructuring of the retailer's organisation.

Nowadays, the increasing number of mobile connected consumers, the growing penetration of new technologies and a purchasing path reinvented through social collaboration mean merchants are confronted with a more challenging and dynamically complex environment.

It is reported that 50 per cent of merchants are eager to tailor sales offers to connected consumers (e.g. source: Retail digital mutation, 2015, LSA/ Oliver Wyman). However, the challenge of tailoring is significant.

Moving towards omni-channel may now appear mandatory for most retailers and the process of going through fundamental changes not only to avoid disappointing customers but also to harness new opportunities from new technologies is challenging. A powerful customer experience is not just about maintaining consistency, relevance and convenience at any cost; it is about creating seamless customer dialogue through every stage of the customer journey, from pre-purchase research to post-sales touches and often requires embracing social media.

Transforming to an Omni-Channel Retailing business model, in which all the channels are seamlessly integrated and function harmoniously, is no small feat for the merchant community and the supporting payments industry.

Transformation Challenges

Historically, bricks & mortar merchants fought against pure online merchant players (e.g. Amazon). In the last decade, many merchants developed new sales channels as separated retailing businesses. Accordingly, they have operated retailing systems and payments infrastructure separated by channel.

But the consumers see online sales in reality as complimentary to physical sales, and stores continue to be key to consumers as 80 per cent of purchases are finalized in-store. Therefore, many merchants have started improving customer experience, offering convenience by individual channel and bringing digital in-store.

For both brick & mortar merchants and online merchants, the omni-channel retailing transformation is a long and expensive process. Despite their investments, the challenging split between online and in-store remains strong with common problems being:

• Different customer knowledge by channel. There are many tools to understand and track online consumer behavior but not so prevalent in-store.

• Separate stock and order management by channel. How to support click & collect?

• In-house competition between online and physical sales channels (cannibalism). How to sell omni-channel?

• Different after-sales service by channel. How to support an omni-channel consumer experience?

• In-store evolutions are more complex to implement as operational costs are way heavier than online. Separate payments infrastructures and/or payment service partners by channel. How to get cross-channel support?

4.1 The Retailers' View

Retailers in Europe are aware of the changing shopping environment. According to interviews with merchants made in 2016 by the retailer association EHI Retail Institute, German merchants, like other European merchants, believe that the most important technology trends for retailers include:

- Omni-Channel: 52%
- Digital Store: 34%
- Digital Transformation: 32%
- Mobile Communication: 27%
- Data Analytics: 27%
- Personalized consumer information: 18%
- Cloud: 16%
- Mobile Payment: 16%

Apart from core business activities like supply chain management and merchant ERP systems, important IT projects planned for roll-out by German retailers in 2017/2018 include:

- Omni-channel 57%
- Renewal of ECR devices 54%
- Data Analytics 46%
- CRM 38%
- Digital Infrastructure 23%
- Mobile devices in-store for staff 18%
- Mobile apps for clients 14%

Examining the highest ranked IT project above, omni-channel - the most important elements include:

- Diversification of consumer touchpoints to sell and take payments when the consumer is ready:
  - Add missing touchpoints: outlet, in-store, in-app, online, self-service kiosks
  - Add advanced bridging technologies like contactless, QR-code, Bluetooth BLE
  - "Click and collect": Buy online and pick-up in-store
  - Digital purchases in-stores supported by connected sales assistants
  - Mobile point of sale in-store (i.e. tablet and mPOS terminal)
  - "On the spot" purchase outdoor or in-store
  - In-store self-service kiosks
  - Mobile apps for in-store and outdoor purchases: in smartphones, tablets and wearables
- Offer value-added services to customers at the touchpoints, including delivery service option.
- Implementation of customer journey mix – from store to online/mobile and from online/mobile to store
- Track and monitor consumer behaviour with both purchase data and payment data
- Accept payment services beyond cards – more payment service types
- Accept the same payment services expected by the consumers across all channels and touchpoints
- Focus on payment security as one key to the retailer's brand image = no trust, no purchase!

According to a study of European retailers conducted by Edgar Dunn, 79 per cent of retailers believe that seamless cross-channel interaction is the key to great customer experience with 69 per cent of retailers

agreeing that data integration is a key challenge for omni-channel strategy implementation.

It should be noted that, a high level of convenience does not satisfy all consumers' requirements, retailers are also expected to provide responsive services, knowledgeable assistance and customisation options, whether they shop in-store, in-app or online. Customers will no longer accept perceived overpricing and poor standards of customer service and are likely to change retailers.

Based on discussions with retailers and retailer associations, in 2016, 65 per cent of retailers have implemented or are implementing an omni-channel strategy to offer a new kind of digital shopping

experience as they embrace the omni-channel trend for new customer consumption and engagement patterns.

According to continuous discussions with retailers in Europe, many merchants understand the payment device integration of POS terminals, mobile POS terminals (mPOS) and payment pages of online shops in one single cross-channel payment infrastructure platform as a significant challenge.

In addition, these merchants are aware that they need to manage all the different payment use cases (incl. mobility in-store) and payment services accepted ideally supported by a single cross-channel infrastructure service.

Figure 3: The Store Is the Center of Gravity in the Omni-shopper's Universe

E-commerce as a percentage of total retail sales has yet to break 10% globally

Where in-store is better than online?

Don't worry about this; understand it. In truth, the penetration of pure-play e-commerce at 7.5% or 8% globally, coupled with the fact that digital devices play a part in 80% of all paths to purchase, is a sign of the new shopping ecosystem, not a danger signal.

The omni-shopper goes to physical locations for the entertainment value of shopping, superior inventory levels and social interaction.

Good customer service overall	42
Personalized experience	43
Good customer service after sale	45
Social experience	53
Receive good recommendations from merchants	54
Receive the product quickly	59

Figure 4: Omni-shoppers Are Comfortable with the Retailers They Know
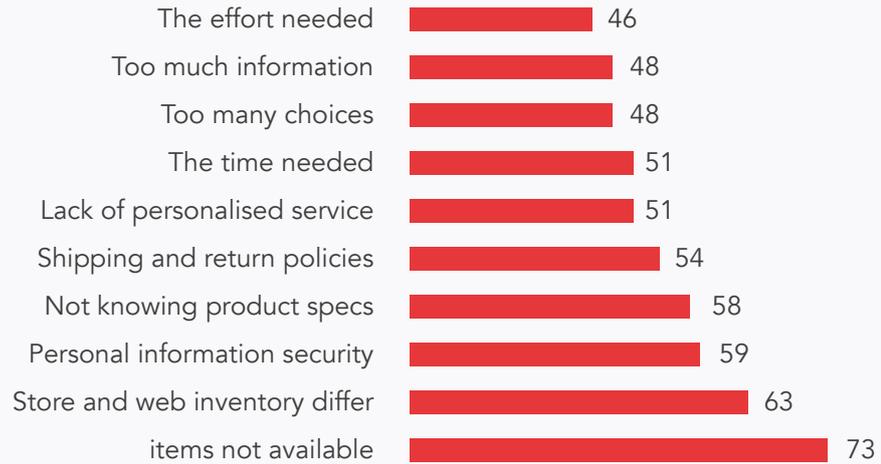
In general, do you...?

The data show that value (44%), track record / experience (36%) and convenience (34%) outpace loyalty rewards (26%) as the aspects that drive the omni-shopper back to the same merchant.

Like to try new merchants	30
Like to buy from merchants that you know and have bought from before	70

Source: Mastercard - The Omnishopper Project

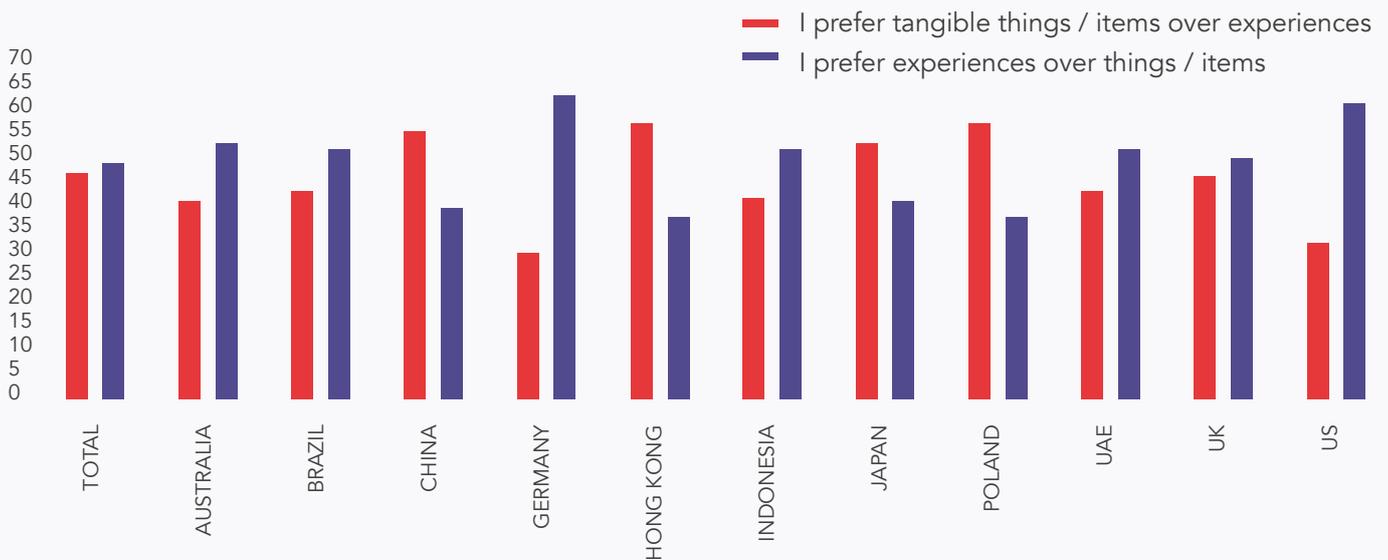## Figure 5: Inventory Converts Shoppers into Consumers at the Last Mile

What frustrates me about shopping today

It's not shipping policies or pricing that frustrates omni-shoppers the most. It's inventory. It is more important (73%) than information security (59%) and characterizes three of the top four frustrations omni-shoppers cite.

The effort needed	46
Too much information	48
Too many choices	48
The time needed	51
Lack of personalised service	51
Shipping and return policies	54
Not knowing product specs	58
Personal information security	59
Store and web inventory differ	63
items not available	73

Figure 6: Consumers Prefer Experiences to Things

Strong experience preference in Germany (67%), the US (65%) and Australia (57%); China, Hong Kong and Poland buck the trend

Legend:
- I prefer tangible things / items over experiences
- I prefer experiences over things / items

(Categories: TOTAL, AUSTRALIA, BRAZIL, CHINA, GERMANY, HONG KONG, INDONESIA, JAPAN, POLAND, UAE, UK, US)

Figure 7: Consumers Appreciate the Value Technology Adds to the Shopping Experience

Do you agree with the following statements about using technology for shopping?

Over 75% of consumers cite technology as an enabler for a better shopping experience. Security and safety remain major concerns: They are also worried about merchants' access to their personal information.

Technology for shopping is too complicated	43
It gets in the way of a real conversation with merchants	54
I love to use the latest technologies for shopping	68
	69
It impedes my privacy	78
It makes me a smarter shopper	
It improves product search	85

Source: Mastercard - The Omnishopper Project

5.
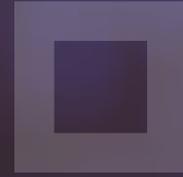
Cross-Channel Payments Infrastructure Service Demands

5. Cross-Channel Payments Infrastructure Service Demands

Traditionally, many retailers use separate payments infrastructure service solutions for POS outlets, online-shops and mobile apps. While large retail groups may operate in-house solutions, small and medium merchants usually outsource to their payments industry partners:

• *POS terminal network processors and POS terminal management to POS network service processors (NSPs)*
• *POS terminal maintenance services to POS terminal vendors or their local partners*
• *The payment functions of online shops are managed by Online-Payment Service Providers (PSPs) and payment gateways*

The line between digital and physical worlds is being blurred by the wide range of new technologies at point of sale but also within retail business processes. Cross-channel payments infrastructure is a pre-requisite and is increasingly common as the starting point for omni-channel retailing as it provides many exciting opportunities for merchants to enrich their interactions with consumers.

The need for a single platform that bridges the gap between their online activity and brick & mortar points of sale is obvious for most merchants.

At the heart of the omni-channel process, investments in Information Technology (IT) will allow retailers to unify their multiple platforms from a user's point of view but also to make both online and physical shopping easier.

Both large merchants and innovative small and medium merchants have identified that they lack an advanced retail payments infrastructure supporting cross-channel POS outlets, online-shops and mobile apps, resulting in increasing demand for these services.

Large retailers especially are demonstrating an appetite for new technologies that will help them to deliver quality, differentiated service to their customers, which they see as central to their retail strategies.

According to the EHI Retail Institute, multi-payments offered cross-channel are one of the key applications of a powerful and efficient omni-channel strategy. Having a global approach across all points of sale is now becoming a major asset for merchants and will help them significantly improve the customer experience, increase sales and minimize costs.

It appears that a pre-requisite for omni-channel retailing is a fully integrated cross-channel payments infrastructure with integrated services focused on delivering a new level of consumer experience. According to leading retailers and payments industry players alike, the cross-channel payments infrastructure service demands include:

• *Improved cross-channel payment use cases: click&collect, web to store, mobile in-store, mobile in-app, store to web*
• *Supporting contactless payments initiated at POS terminals and in-store tablets with mPOS terminals*
• *Supporting online payments initiated from the retailer's online shops and from self-service kiosks*
• *An ability to support digital payments and digital wallets in combination with tokenization security*
• *Enabling retailer's payment network processing with in-app payments within retailer apps*
• *Cross—channel processing of relevant payment services types and transactions from any channel*
• *Technical support of payment collection services, refund services, DCC services and tax refund services on demand*
• *Scheme compliant device management of POS terminal estate, online payment pages, and retailer-issued apps*
• *Improved overall payment security – e.g. P2PE encryption, 3D-Secure, strong customer authentication (RTS SCA)*
• *Compliance with schemes (e.g. EMV, PCI DSS) and regulatory requirements (e.g. PSD2, AMLD, IRF)*
• *The reduction of merchant fraud, improved fraud prevention management capabilities*

• *After-sales services independent from sales channel, e.g. delivery options*

• *Increased flexibility to charge consumers upon shipping or collection, split or recurring payments*

• *Reconciliation and consolidation of consumer payments, including unified reporting and data export*

• *Flexible connection to card acquirers and card-less payment service providers (e.g. PISPs, AISPs)*

• *Transparent reporting of payment costs: acquirer fees, scheme fees and interchange fee++*

• *Unique web portal for merchant information with key performance indicator dashboard:*

    • *To compare and check payment activity of consumer payments (basket, by channel, by payment services)*

    • *To compare and check merchant service charges*

• *P2P encryption (P2PE) mandatory for several in-store sales with mobile payment devices*

(Figure 8: Merchants' High Level View on Cross-Channel Payments Infrastructure)

Consumer driven Omni-channel Impact on Payment Infrastructures
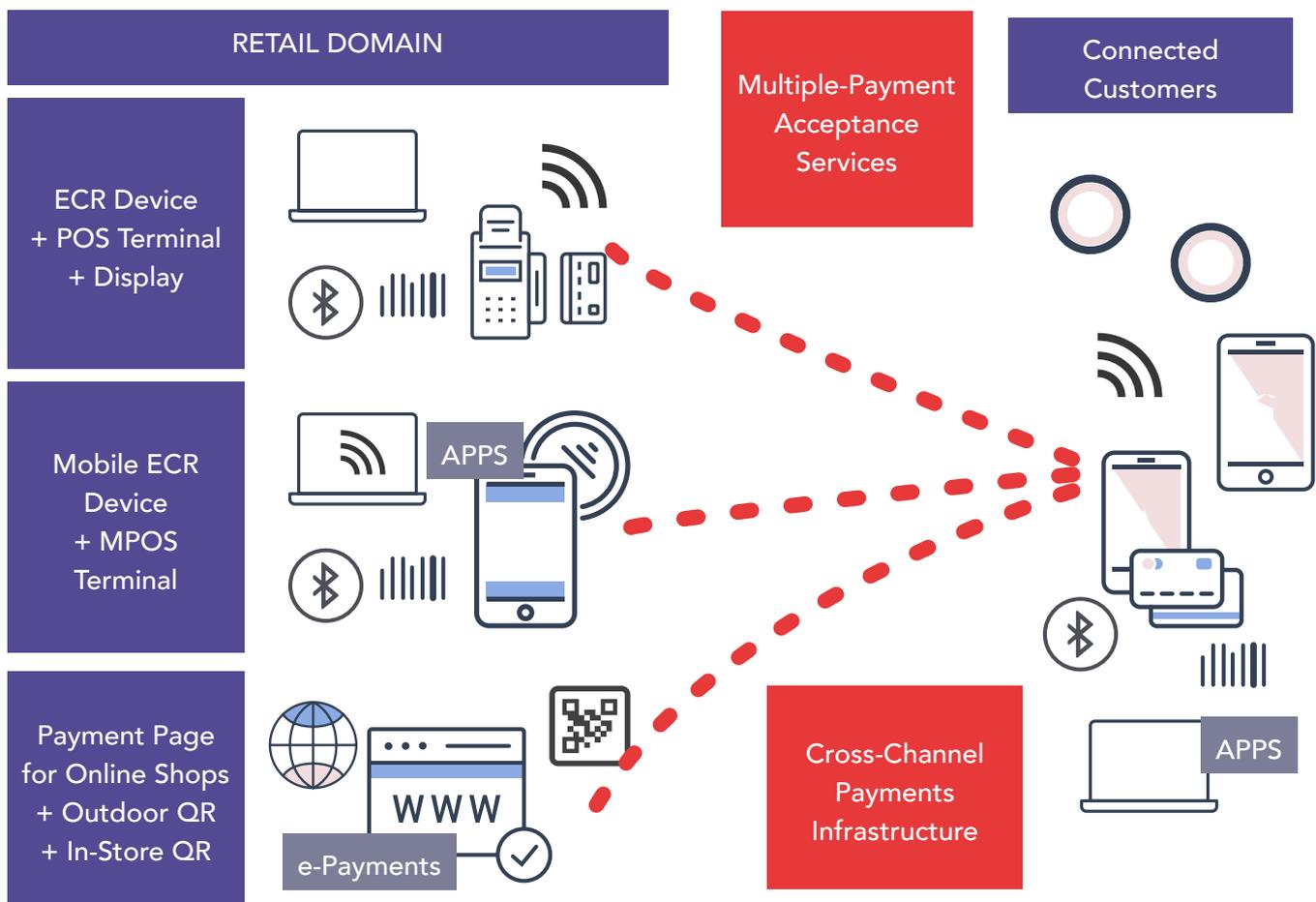
Cross-Channel Payments Infrastructure - mandatory for Omni-Channel Retailing

Source: PCM Research

(Figure 9: High-Level Cross-Channel Payments Infrastructure Solution)

Currently merchants expect an all-in-one cross-channel payment infrastructure service combining POS network payments, online payments and other mobile touchpoints cross channel, either all-in-one or unbundled according to merchant's demands.
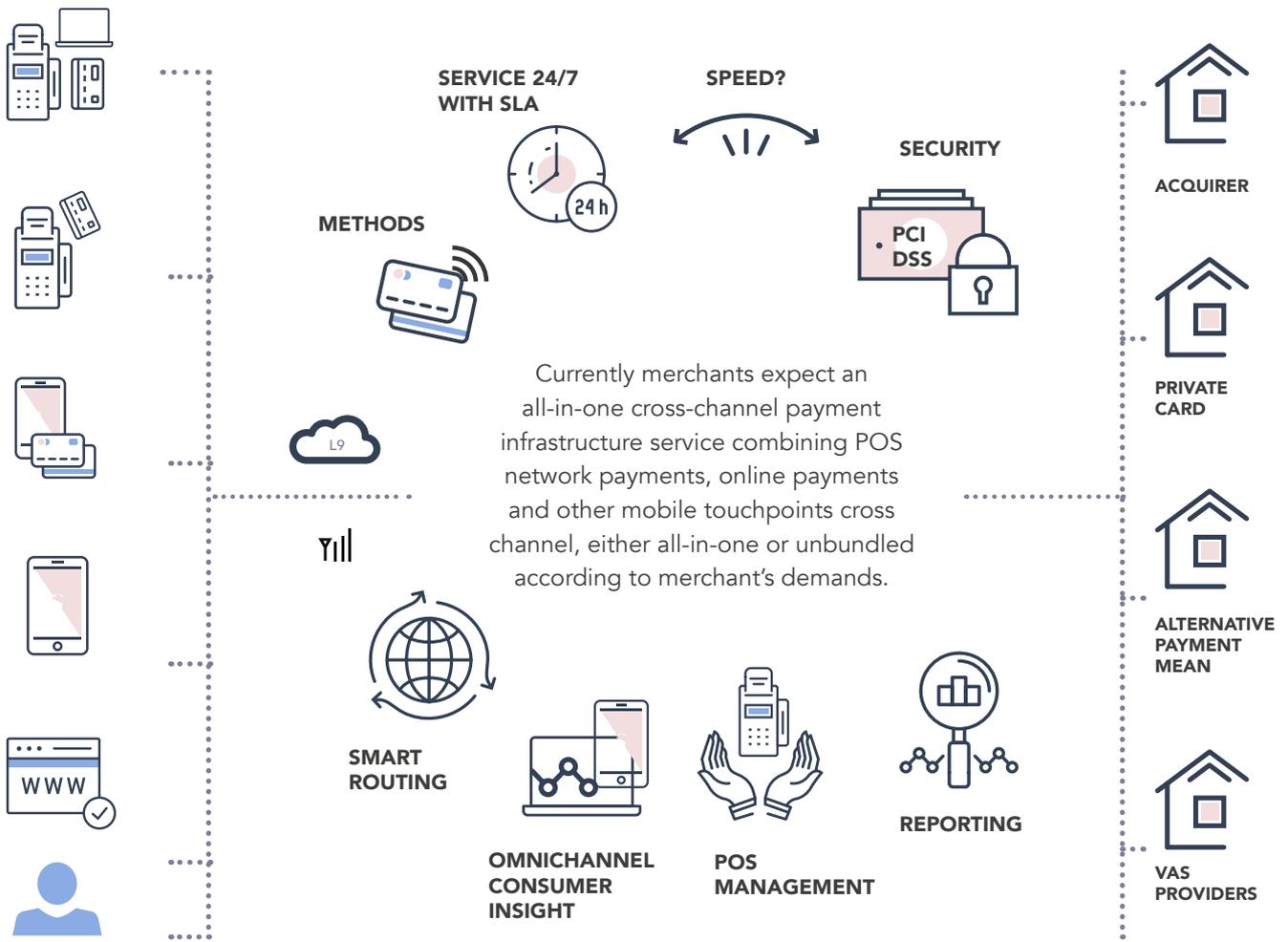
Source: PCM Research

5.1 Service Pricing Models

Traditionally, large merchants have either purchased POS payment systems and online payment systems directly, or they have outsourced them to third-party processors and PSPs to host them.

However, merchants recognize that cross-channel payment infrastructures demand a higher level of complexity and integration, in combination with continuous regulatory upgrades to meet the need of regulators and card schemes.

As single-channel payment infrastructure solutions offered to merchants transform to integrated cross-channel payment infrastructure solutions, flexible Software-as-a-Service (SaaS) models have become an everyday trend, even for the largest of retailers. In answer to leading European retailer group demands, the traditional 'buy or outsource' approach is changing to a SaaS environment speeding up the pace of change whilst lowering investments (CapEx) but also having a potential impact on operational cost (OpEx). In recent years increasingly more SaaS-based pricing models have been requested by retailers across Europe.

According to questionnaires from retailer associations and payments industry players, the vast majority of merchants would consider working with third-party providers to support their cross-channel payments infrastructure and their multi-payment acceptance service needs, in response to the wealth of new technologies, apps, and payment services now available.

6.

Multi-Payments Acceptance Demands

Payments have been pretty straightforward in the past. In parallel to POS payments in outlets and at vending machines, online payments for e-commerce purchases have been a separate payments acceptance channel with different security and authentication solutions.

Traditionally, merchants have been reluctant to accept new payment services until there is a widespread consumer adoption or they generate more business for them. However, a wave of new market entrants has increased the consumers' appetite and willingness to try new emerging payment services derived from consumer convenience. Especially, mobile payments and online payments in-store combined with cross-channel interaction brings about new challenges for merchants.

In addition, cross-channel payments demand from consumers that enable them to search, buy and pay seamlessly across multiple touch points and channels. Therefore, card payments in outlets and Card Not Present payments (CNP) for online and mobile transactions will need to merge.

Furthermore, modern merchants understand the enhanced role of their payment service provider partners. They expect their payment processors to accept any payment services type relevant for them cross-channel.

Modern merchants see that payments are essential to the application of a powerful and efficient omni-channel strategy. Having a global approach across all points of sale is now becoming a major asset for retailing businesses that will help them significantly improve the customer experience and increase sales.

The breadth of payment technologies, mobile apps and the fragmented card-less payment service market, most merchants are mindful of the continuing need to control payment cost and the need to improve payments productivity (e.g. faster payments, less merchant fraud, less purchase abandonment due to missing payment option).

The vast majority of e-commerce merchants say that multi-payment acceptance services cross-channel and cross-borders are key for omni-channel retailing. In particular, online payments and mobile devices are more flexible than in-store payments regarding new and advanced payment services, something that is changing fast as new payment types such as mobile payments focus on POS acceptance.

Merchants are acknowledging the value of having more than just traditional card payment options for consumers ideally at all consumer touchpoints. Providing a consistent omni-channel shopper experience initially involves the development of acceptance points cross-channel. Furthermore, they should be able to accept contactless cards and other contactless card form-factors e.g. NFC stickers, wearables, digital wallets and the Pays.

Increasingly merchants are managing multiple formats of purchase transactions through diverse points of sale, and recognize it is now time to think about implementing a unified multi-payment acceptance strategy in order to streamline and improve the consumer experience. The ability to provide security-driven, whilst flexible acceptance of, both card based payments and card-less payments constitutes a major asset for businesses in terms of cost management, sales development and customer satisfaction.

It appears an inflection point has been reached with the majority of large merchants, innovative small and medium sized retailers clearly understanding that they lack advanced payment accepting services supporting seamless contactless payment acceptance.

Furthermore, their pain and experience at cart abandonment highlights that more and more connected consumers expect to use their preferred payment services cross-channel.

According to retailer association EHI, a growing number of European retailers continue to focus on individual multi-payments acceptance strategies but have added new omni-channel retailing requirements. Unchanged, these merchants see their individual payments acceptance strategy as the way to reduce payment cost, improve customer service and provide differentiation in a highly competitive retail market. However, the complexity of multiple systems and separated channels ultimately means they will lose out to competitors that have embraced the omni-channel with multiple payments direction.

Key to this change is that merchants have started requesting enhanced services from their payment service provider partners that include:

• Cross-channel payment acceptance: in outlets, in online shops, in-store, in-app, at self-service kiosks

• Multi-payment Cards acceptance: domestic cards, international cards, digital wallets, Apple Pay, Samsung Pay etc.

• Card-less payment service acceptance: IBAN-based credit transfers/direct debits, online wallets, pre-paid products

• Payment acceptance services capable to using bridging technologies: contactless, wallets, QR-code, Bluetooth BLE

• Flexibility to add or decline the acceptance of new/ additional payment services

• Effective fraud prevention services without impacting consumers or losing legitimate sales

• Payment collection services, refund services, DCC, tax refund on demand

• Compliance of payment acceptance services with schemes and regulatory requirements

• Compliance with payment security – e.g. P2PE encryption, 3D-Secure, strong customer authentication (RTS SCA)

• Transparent payment fee calculation on demand – e.g. acquirer service fees, scheme fees, interchange fee++

• Choice between bundled and unbundled merchant service charges for payment acceptance on demand

• Unique web portal for merchant information with key performance dashboards and enhanced reporting:

    • To compare and check payments accepted (basket, by channel, by payment services)

    • To compare and check merchant service charges (interchange fees, scheme fees, acquirer fees)
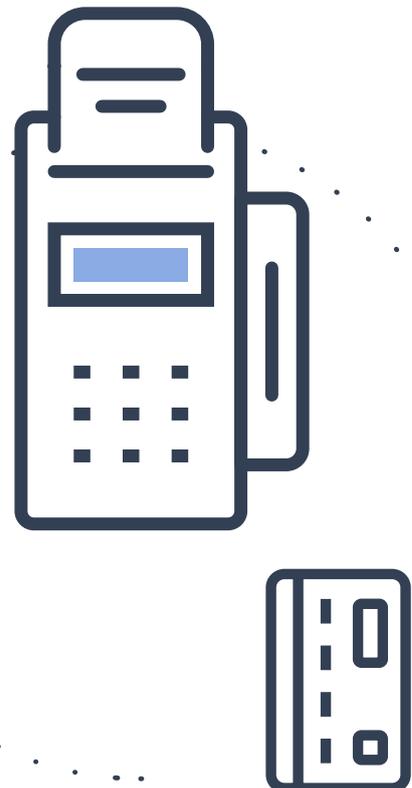
6.1 Payment Acceptance Contract and Pricing Models

Traditionally, merchants sign multiple different card acceptance contracts by channel with one or more of their acquiring payment service providers of their choice:

• *An acceptance contract for domestic cards, or domestic payments schemes (e.g. iDEAL, Dankort etc.)*
• *One acceptance contract for all cards branded with one of the MasterCard or Visa brands*
• *Separate acceptance contracts with American Express, Discover, Diners, JCB, China UnionPay*
• *Separate acceptance agreements for account-based payments acceptance, wallets and prepaid products*

Markedly, there is an emergent approach to bundle multi-payment acceptance service contracts cross-channel that include all those payment services by choice of the merchant, into a centralised service from the payment service providers.

A proven payment acceptance strategy for merchants has been to contract with these dedicated payment service providers:

• *One payment acceptance contract for domestic POS payments and online payments by channel*
• *One payment acceptance contract for cross-border online payments cross-channel*

With the event of the intensive cross-border acquiring competition at the European level following the implementation of the interchange fee regulation in 2015, merchants may choose to change this practice and sign a cross-channel and cross-border contract with just one payment service provider active in Europe. However, the charges levied by acquirers, banks and card schemes appear to make them less attractive with few retailers selecting this option currently.

Merchants do have the choice between cost benefits from bundling their multi-payment acceptance volumes to one payment service provider partner or a complexity-based approach with increased risk, continuing their proven acceptance contract strategy splitting their volumes between several partners.

The pricing models for payment acceptance services, are based on two different merchant service charge (MSC) fee models practiced by European account providers:

• *Unbundled: MSC fees with transparent cost per transaction by payment service product*
   • *I.e. transparent interchange fee + scheme fees + acquirer service fees per transaction*
• *Bundled: average flat MSC fees per payment transaction independent form the payment service type*

Both strategies require a different level of reconciliation efforts for the individual merchants.

Increasingly, there are more flat fee service packages per month offered by card acquirers, e.g. for POS terminals including the merchant service charge fees for the accepted payment transactions independent from the payment service type, this is particularly prevalent at the Tier 3 and Tier 4 retailing levels (SME's).

7.

Key Findings

Online technologies, mobile devices and new consumer demands are rapidly transforming the retail sector and the payments industry. They provide retailers and payments industry players with new opportunities to generate bases of differentiation, gain customer loyalty and win market share.

Global B2C commerce is seeing exponential growth and merchants are increasingly looking to take advantage of cross-border initiatives as a way to increase revenue growth along with providing more options for their customer base.

At the heart of the retailer's processes, a cross-channel payment infrastructure combined with multi-payment acceptance services appears to be a key business enabler, providing better customer knowledge and improving consumer experience. All four are parts of the omni-channel mosaic.

Based on continuous discussions with retailers and payments industry players from 2011 to 2016, our key findings include:

• *Contactless, mobile apps and mobile devices are going to be increasingly the new normal for consumers, but can offer potential competitive differentiation for merchants*

• *Consumers have embraced mobile technologies as they enable them to shop cross-borders and cross-channel unrestricted. The ability of mobile devices to offer more consumer convenience meets the latent demand consumers have for seamlessly integrated mobile based journeys, at their convenience*

• *The consumers use their connected mobile devices for omni-channel shopping in-store, in-app and online, without registering the different modes*

• *The change is universal, looking into specific domestic data of European countries, connected consumers are the new normal for retailers and the payments industry across Europe, making this a significant game changer for merchants and the payments industry*

• *Transforming to an omni-channel retailing business model, in which all the channels are seamlessly integrated and function harmoniously, is no small feat for the merchant community and the supporting payments industry but those that do, benefit greatly and provide*

case studies and successes to learn from

• *Success in omni-channel is underpinned by a fragmented set of cash-less payment services that are relevant for omni-channel merchants, such as; cards, contactless card form-factors, account-based bank payments, online wallets and prepaid products*

• *In the forthcoming digital payments world, the channels POS/mPOS/online shops/in-store/in-apps are going to consolidate into single cross-channel platforms. Only the devices of the connected consumer will remain different*

Payment is only one part of the omni-channel mosaic. Merchants need to take into account inventories, orders, CRM & consumer data, loyalty, supply chain as well as payments to restructure the whole interaction between online and offline.

What is clear is that partnerships between merchants and payment service providers are mission critical in the journey towards omni-channel retailing. Merchants should take advantage of regulatory or market events and use them as an opportunity to re-evaluate their payment acceptance adoption and roadmaps. They need to understand their payments service partners' roadmaps and align this with their omni-channel payments applications roadmap to ensure future sales growth (locally, regionally and globally).

Add cross-border to cross-channel and regional/local cultural differences needs to be well understood to enable true omni-channel retailing growth. It is well known that the payment needs and preferences of the individual European countries are quite different. However, partnering with payment service providers acting on European or even global level, omni-channel merchant can benefit from proven cross-channel payment infrastructures and multi-payment accepting services experience of the partner.

With the right approach, rolling out new payment services across multiple countries rather than doing on a country-by-country basis has strong advantages in terms of ROI, as well as providing customers with a consistent payment user experience.

Underpinning our research we produced an omni-channel evaluation tool that enables the importance of differing service attributes and channel requirements to be understood and defined. We use this tool to assist us in our interviews with retailers to document and define their challenges.
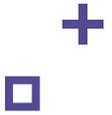
If you would like a copy of the tool please email: omni-channeltool@ingenico.com

8.

About the Research
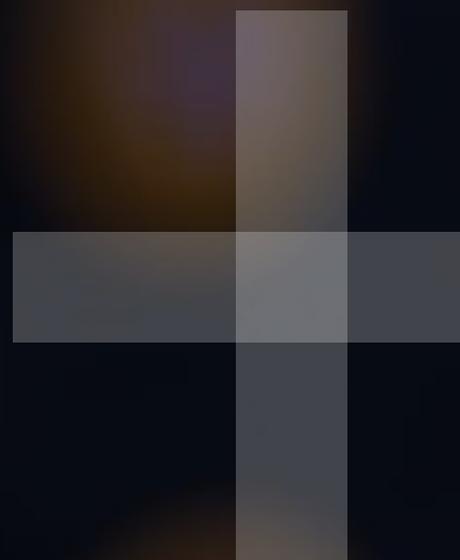
Payments Cards & Mobile

In business since 1994, Payments Cards & Mobile is an established hub for global payments news, research and consulting. We work with recognized industry experts to provide impartial, up-to-date and relevant information and analysis on every area of payments.

Personal relationships have been the hallmark of our business. We remain committed to working closely with our many long-standing customers and welcome new customers in producing quality business intelligence and providing a variety of ways in which you can consume this information. Our aim is to provide you with the highest quality data so you can position your business and key personalities in this increasingly competitive industry.

PCM Research

Payments Cards and Mobile Research offers comprehensive, in-depth research into topics which are relevant and tailored to our clients' needs. Our in-house research facility is available for short term projects. We specialize in M&A activity, market entry data, country report analysis and statistics. Research reports on banking, payments and mobile payments worldwide.

Topics range across the measurement of efficiency and performance, card and payment service related information, the role of brands in banking and the impact of non-banks such as retailers and FinTechs on the financial services and mobile financial services market.

Payments Cards and Mobile offers specific research on all aspects of banking, card payments, card-less digital payments, Issuing/Acquiring, financial services and the mobile financial services market.

Ingenico Group

Ingenico Group provides merchants with a wide range of payment services based on its cross-channel payments acceptance platform. Our expertise – centralized transaction management, transaction processing and loyalty services – allow our clients to easily and efficiently manage their financial transactions.

Ingenico is in a unique position to offer POS/mPOS terminal payment infrastructure services, online payment processing services, and multi-payment acceptance services cross-channel and cross-borders. Ingenico is one of the few vendors being capable to offer seamless cross-channel retail infrastructure services for any type of payment services.

Acknowledgements

The study draws on published statistics and on comments from retailers and payments industry players. The author thanks various retail organizations and many payments industry companies for the data provided and the helpful responses to selected questions on omni-channel retailing and cross-channel multi-payment services.

Author

Since 2011, Horst Forster is co-editor of the European Payment Cards Yearbook, responsible for market analysis and for compiling/writing the country profiles. Horst has expertise in both the card business and in e-/m-payments since 1996. Cross business and cross borders – his profession is business development and market intelligence services for the Payments Industry.

Copyright

Disclaimer