



Boosting e-commerce: a how-to guide for postal operators

Version 2.0



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1 Foreword

The UPU E-Commerce Guide is a set of practical recommendations for UPU members to consider in the development of their own e-commerce capabilities and services for domestic, regional and cross-border markets.

The version 1.0 of the UPU E-Commerce Guide was approved by the POC Plenary on October 2014. This version 2.0 updates information and includes new content related to postal e-commerce business models, delivery services, and tools.

The guide is organized into the following main sections:

- E-commerce market needs: main vendor and buyer needs raised by the UPU E-Commerce Forum in 2014;
- E-commerce key elements: description of the main aspects of an e-commerce structure;
- Domestic, regional and global markets: an overview of differences and opportunities related to the geographic scope of an e-commerce operation;
- E-commerce business models and strategies: an explanation of possible e-commerce business models for Posts, from parcel delivery to e-marketplaces;
- Tools: systems and tools available for the development and management of e-commerce services.

Gathering a useful set of recommendations is not an easy task given the diversity in market development levels. Nevertheless, this guide covers as many different scenarios as possible. Some recommendations are suitable for new markets and others are aimed at more established markets.

The guide is not a complete business plan, nor is it a step-by-step orientation. It would not be possible to go into such depth in a single document, given the many variables involved in each designated operator context. Instead, the guide provides information, principles and practical recommendations that can help Posts in building their business models and services. Each model built will take into account specific business strategies, market situations, capabilities and other product management issues, beyond the principles covered in this document.

Since e-commerce is a new and innovative market, this guide will be continuously updated to reflect evolving market needs and trends. UPU members are invited to enrich this guide with their own experiences and ideas.

2 Motivation

The 25th UPU Congress decided to enhance the focus on e-commerce through resolutions C 31/2012 (Development of e-commerce) and C 33/2012 (Promoting cross-border e-commerce).

The UPU E-Commerce Forum, held on 26 and 27 March 2014 in Berne, highlighted that e-commerce offers growth potential for the postal industry – but certain barriers must be overcome. In terms of cross-border e-commerce, the many barriers to growth include the complexity of the postal product offering, the lack of adequate infrastructure support, and outdated and inefficient postal–customs–transport processes. Ultimately, customers require access to simple, affordable and reliable international postal services.

The UPU needs to take a global approach, based on a market and customer focus, towards the development of an intelligent postal delivery framework for cross-border e-commerce, using a multifunctional, integrated infrastructure for simple and reliable access to postal services worldwide.

The UPU E-Commerce Programme (ECOMPRO) charges the POC to accelerate action to develop e-commerce through the UPU's international postal network, working within the existing POC structure and bodies. This multifunctional integrated infrastructure concept is about gathering tools provided by the postal industry, taking into consideration postal electronic services, payment solutions, IT tools, standards and market development issues. This level of cooperation is essential to ensure relevant outcomes for all stakeholders.

3 E-commerce market needs

The E-Commerce Forum speakers, including sellers, client representatives and Posts, highlighted many needs that must drive e-commerce services. These needs were reported to the Postal Operations Council in document POC 2014.1–Doc 16.

Some of the needs are beyond postal industry responsibility. However, they must be addressed in cooperation with governments, clients and other e-commerce players.

The forum highlighted the following as the most important aspects for consumers:

- Delivery: cheap, traceable and time-certain. While immediate or same-day delivery is now a reality in many markets, consumers still favour solutions that are based on free delivery;
- Control: ability to decide when, where and how the items will be delivered;
- Reliability: no unexpected charges, on-time delivery, high quality of service and customer service in case of problems;
- Return policy and options;
- Value-added features.

Certain customer expectations may seem surprising: for example, in some cases consolidation trumps delivery speed, especially when it reduces the number of individual deliveries a customer receives.

For cross-border e-commerce, it is necessary to simplify duties, taxes and customs processes; to overcome fragmentation of consumer protection rules; to facilitate international dispute resolution processes; and to provide trustworthy and efficient payment systems and logistics, including escrow features.

According to the forum discussions, e-tailers have the following needs:

- Simplicity: easy-to-understand portfolio, harmonized product information and simple delivery options that suit customers;
- Speed: seamless customs processes, including features such as delivery duty paid, pre-delivery notice, standardized labelling and label integration;
- Tracking/visibility: shipping and landed costs calculation tool; global integrated and shared full track and trace, taking account of the complete fulfilment cycle; and more predictable delivery times – 10 to 21 days is not a suitable range for e-commerce;
- Security: reliable delivery services and information, enhanced compliance with customs documents and procedures, secure identification (verification of customer ID);
- Domestic features made available in the international service, such as parcel lockers, pickup, click and collect, returns, and customer services;
- Rational, easy-to-understand prices based on size, weight and speed, and optimized routes based on destination;
- Reliable and flexible payment options, such as payment on delivery (PYOD) by cash, card or account;
- Escrow service, so that the payment is not released until the product is delivered and accepted;
- Shift from paper-based to electronic processes;
- Integration with technology interfaces provided by Posts, as well as straightforward, well-documented access to postal technology, logistics platforms and globally unified system interfaces.

In particular, there is an increasing demand among micro, small and medium enterprises (MSMEs) to sell online. MSMEs need training, assistance and guidance from Posts and other solution providers such as e-marketplaces. Moreover, governments need to get involved to help develop policies to facilitate exporting and importing.

E-tailers are able and willing to share advance information with Posts and Customs to speed up customs and delivery processes.

In the absence of a reliable postal network meeting their e-commerce requirements, e-tailers are investing in their own delivery solution, which is not their preferred option. It is interesting to note that, instead of simply pointing out shortcomings, e-tailers are seeking changes and are willing to invest in partners like the postal sector to achieve these changes.

4 E-commerce key elements

According to the World Trade Organization, electronic commerce refers to “the production, advertising, sale and distribution of products via telecommunications networks”. An organized and more detailed view of e-commerce key * elements is needed to better understand and identify opportunities for Posts. These elements should be considered as part of any e-commerce planning and implementation. They are grouped into seven categories:

- Web hosting: elements related to store websites, taking into account technical tools and support, content management, and mechanisms for searching products and comparing prices;
- Payment: money flow model and payment options;

- Logistics: Posts’ core business, comprising the essential services and tools related to shipping, delivery and information;
- Customer-relationship management (CRM): elements related to the client-relationship (buyer and seller);
- Promotion channels: to improve vendor visibility and sales, including direct marketing, web advertisement, business-to-consumer e-marketplaces and traditional media;
- Data exchange: standards and tools for data exchange related to products, duty and taxes, customers, orders, and other information shared among e-commerce players;
- Support elements: secure identification and messaging, market development and legal framework.

The e-commerce key elements are shown in the following table:

Trade facilitation					
		Return of goods ²			
		Track and trace ²			
		Delivery ^{1,2}	Big Data		
		Customs ^{1,2}	E-commerce consulting ¹		Order info ⁴
Mobile	Payment on delivery (PYOD) ^{1,2}	Package pickup ⁴	Sales ⁴	Traditional media ⁴	Customer info ²
Product search and comparison ³	Post office payment ²	Shipping labels ²	Marketing ¹	Web advertisement ⁴	Product info ²
Technical support ²	E-payment ^{1,2}	Postage price calculator ³	Customer data analysis ¹	E-mail marketing ⁴	API ²
E-shops ²	Remuneration ^{2,3}	Warehouse and fulfilment ⁴	Call centre ⁴	Direct marketing ¹	Interconnectivity standards ²
WEB HOSTING	PAYMENT	LOGISTICS	CRM	PROMOTION CHANNELS	DATA EXCHANGE
Secure Identification,³ Secure Messaging,² Reliable Information,² Capacity Building,¹ Market Development,¹ Interconnectivity,² Standards,¹ Partnership,¹ Financing¹					
E-commerce key elements					

¹ Capacity building / consulting by UPU International Bureau (IB): analysis, recommendations; action plan, templates

² IT tools by UPU IB (available)

³ IT tools by UPU IB (planned)

⁴ National task

4.1 Web hosting

Websites are the main contact point between vendors and consumers. It is through a website that the store makes itself known to customers, providing essential information about its products and services, including pricing, shipping and other commercial information necessary for visitors to initiate and complete a transaction.

4.1.1 E-shops

E-shops, also known as online shops and web stores, are websites dedicated to e-commerce transactions. Examples are eBay, Alibaba, Barnes & Noble and Amazon. E-shops can be implemented in many ways, including:

- I Own host: the vendor builds and hosts an e-shop in its own IT infrastructure and handles all aspects, including hardware, software, security, and network acquisition and maintenance.
- II ISP host: an Internet service provider (ISP) hosts an e-shop on behalf of the vendor, which designs and builds the e-shop. In most cases, the vendor administers the IT infrastructure.
- III Fully outsourced e-shop: the vendor contracts a complete e-shop system, with all the engines required for online shopping.
- IV E-marketplaces: the vendor publishes its products on big websites known as e-marketplaces, and these websites act as intermediaries. Products can be grouped by brand or by seller, and there are many tools to organize and help find items in huge catalogues. Examples of e-marketplaces are Amazon and eBay.

The table below shows the advantages and disadvantages of each e-shop hosting model:

Attributes	Own host	ISP hosting	Outsourced	E-marketplace	Social media
Cost	High	Medium	Low	Very Low	Low
Flexibility	High	Medium	Low	Low	Low
Complexity	High	Medium	Low	Low	Low
Setup time	Long	Medium	Short	Short	Short
IT investments needed	Hardware acquisition and maintenance; Software and acquisition maintenance; Internet network connections contract; IT security services; IT environment operation.	Software and acquisition maintenance; Partial IT environment operation.	Installation and monthly fees	Monthly fees and/or commission per transaction.	Monthly fees and/or commission per transaction.
Applicable to	Big stores, experienced with e-commerce and with well-prepared staff	Medium-sized stores with limited staff and resources, but able to deal with e-commerce operations and technology	Small and medium companies without know-how in technology and/or with limited human/financial resources. Usually, they are new to e-commerce.	Small and medium companies. Individuals can sell online using e-marketplaces. On the other hand, big stores and brands are also available on e-marketplaces.	Any company

- V Social media: websites like Facebook and Google+ can be used for online selling. They use specific electronic showcases adapted for highly interactive social networks.

In addition to traditional browsers for desktops and notebooks, all these models of e-shop can be made available for tablets, smartphones or digital TVs.

The main opportunity for Posts is to go beyond delivery services to offer logistics services for e-shops. Moreover, information about the logistics process needs to be provided throughout the sales experience (before, during and after), and this information needs to be integrated into websites.

This means offering plug-ins, tools for calculating shipping and freight prices, and track and trace to ISPs and other web hosting companies. The section on data exchange below provides details about this integration.

Posts can also set up e-shops to increase seller and buyer loyalty in postal delivery services. Moreover, offering hosting services or building e-marketplaces can facilitate e-commerce inclusion of MSMEs, which benefit from the technological simplicity; low cost; and integrated delivery, logistics and payment services – all offered by the trusted postal brand.

Posts can start e-commerce hosting services by building their own e-shop to sell postal products and services. After this experience, the web platform can be extended to other sellers. This is a good opportunity, especially in domestic markets with few e-marketplace alternatives for MSMEs.

In well-developed e-commerce markets, Posts must identify and evaluate the business models of other e-shop hosting providers and e-marketplaces. The decision of whether to enter the hosting business segment must take into consideration the capacity of the Post to compete with established companies and their expertise in this field. Another option could be to build partnerships with them, avoiding unnecessary competition with players that could actually be postal customers.

4.1.2 Technical support

Given the complexities involved in operating an e-shop, successful implementation depends on an appropriate level of technical support to sellers. The goal is to let online vendors focus on commercial aspects of operations instead of technological issues. The Post therefore needs to provide a reliable and prompt technical support structure. This will make it easier for MSMEs to enter the e-commerce business. It is important to note that guaranteeing continuous service to the e-tailer is not cheap. Posts must balance the level of technical support against the revenues generated from the e-shop operations, by addressing such questions as:

- a What are the returns of guaranteeing non-stop e-shop availability and providing a 24/7 support team?
- b Would the projected revenues cover all support costs?
- c What would be the impact of reducing e-shop availability on projected revenues?

4.1.3 Product search and comparison

Search and comparison tools are essential for e-commerce. For greater success, e-shops should make their products available on search and comparison websites. Google, Yahoo and eBay are examples of well-known search and comparison sites. Similar regional websites are also a good option.

One possibility is to take advantage of the free or paid services offered by some sites to raise content visibility on a search engine result. As an example, Google's PageRank algorithm ranks websites according to the quantity and quality of links to a page. The better the rank, the more visible the web page in a Google search result. Posts can also buy Google's sponsored links to improve their web page visibility on Google.

In addition to global search tools, a Post's website should itself offer at least some simple search tools. An effective product search mechanism within the website can improve the online shopping experience.

Another consideration is how to facilitate navigation among items in an e-shop. To address this issue, functionality must be considered more important than aesthetics and style. In other words, attention must be paid to how the e-shop's content is organized into groups and subject areas, to ease the navigation experience and help customers locate products quickly and easily.

4.1.4 Mobile platform

Smartphones and other mobile devices are changing the way of offer content and services on the web. In many countries, mobile devices are the most used platform for online interaction. The same trend is applied for e-commerce, considering the advantages of accessible, quick, simplified and instantaneous experience of online shopping.

However, for a successful use of mobile commerce, companies must provide clean and simple on-line stores' web interfaces. Smartphone screens are small and are available in many sizes with variety of way of usage – fingers, small keyboards and pens.

Besides, mobile internet connections are not suitable for large amount of data transferring as usual in household technologies. So, web stores for mobile devices must be concise and objective in order to offer good usability for their visitors.

Good IT providers for web stores are offering built-in mobile infrastructure with automatic detection of clients browsers platforms, facilitating the implementation of adaptable online shops.

4.2 Payment

Payment for online services is one of the most important components of any e-commerce implementation. However, it is also one of the most complex elements, mainly because of security features that must be put in place. The *Good Small Business Guide** gives the following advice:

- “Consumers may be wary of giving credit card details and other personal information online. Your first step must be gaining their trust.”
- “Fraud and chargebacks are critical issues that can seriously affect an online business.”

A variety of electronic payment tools are available to e-commerce merchants. Credit card associations and issuers, banks, e-payment providers and postal operators have been improving the security and reliability of payment applications to promote the adoption of e-commerce.

4.2.1 Money exchange

For the purposes of this guide, the term “money exchange” is used broadly to refer to all financial exchanges between parties in the e-commerce process (e.g. IT service providers, payment gateways, e-marketplaces and logistics providers).

The business success of all parties depends on a suitable money flow model. When a buyer pays an e-shop, the seller must pay the IT structure, the hosting supplier, the online payment provider, the logistics operator, and so on. While it is not difficult to define a remuneration model in domestic markets, international e-commerce transactions bring complexities such as import/export duties, taxes, and bilateral or multilateral agreements.

In the case of the postal industry, existing remuneration parameters and processes among UPU members still need to be adjusted to reflect new electronic postal services. As an example, if an item of Post X is sold on the e-shop of Post Y, Post Y needs to be remunerated for selling Post X's product. These remuneration issues are being studied by the POC committees.

It is worth noting that e-commerce exerts strong pressure on Posts' delivery prices because of the attractiveness of free shipping. Pricing and payment models need to reflect this pressure.

* *Good Small Business Guide 2013: How to Start and Grow Your Own Business*, 7th edition, Bloomsbury Publishing.

4.2.2 Electronic payment

E-payment systems are very important to the development of e-commerce. The available options include:

- Credit card payment
- Postal payment
- Credit transfer
- Electronic cheque
- Direct debit
- Smart cards
- Prepaid schemes
- Mobile phone schemes

E-payment options may be convenient for online buyers, but they are vulnerable to cybercriminals trying to steal merchandise and money from the e-marketplace. Despite the improvements in cybersecurity technologies, online payment fraud continues to pose the greatest risk to buyers, sellers and financial service organizations. Although credit cards – the most common means of payment – provide consumers with a great deal of protection for e-commerce transactions, merchants are exposed to some risk when accepting credit card transactions over the Internet. Under regulations established by credit card associations (e.g. Visa and MasterCard) and issuers, e-commerce transactions where a card is not presented at the seller's terminal are referred to as "card not present" transactions. To complete the transaction, the seller remotely provides the card data to the buyer through the Internet.

Credit card association regulations stipulate that sellers bear the risks associated with fraudulent transactions against their accounts. If a seller accepts a fraudulent transaction, receives a credit card authorization from the association/issuer and fulfills the transaction by delivering merchandise, the issuer can reverse the transaction at the buyer's behest. When the issuer identifies the fraudulent transaction, it can take back the full value of the transaction from the seller's account. This is called a "chargeback". Unfortunately, the seller has not only lost the merchandise sold through the e-commerce platform, but also the revenue associated with the sale.

Identification solutions provided by credit card associations reduce risks in "card not present" transactions. For instance, a seller who uses the Verified by Visa feature will not receive a chargeback from the issuer for a "card not present" transaction. However, these solutions can be costly.

In addition to credit cards, a secure electronic platform should offer solutions with debit cards and electronic wallets.

One way to minimize electronic payment risks is to authenticate customer identity using information crossing,

digital certification and other such mechanisms. However, these mechanisms increase the complexity of online transactions. Most sellers opt to accept a margin of expected fraud rather than lose regular buyers on account of technological complexities. E-commerce players, and in particular e-payment providers, must find ways to improve online payment security without adding undue complexity to the online shopping process. The UPU's electronic postal certification mark (EPCM) service, PostID and .POST, discussed below, could also enhance identity authentication features for e-commerce transactions.

4.2.3 Post office payment

Some Posts offer banking and postal payment services in their outlets or through mail services. These payment solutions are reliable and widely accessible. The postal payment option established under the UPU Postal Payment Services Agreement and provided by the UPU's International Financial System (IFS) network can offer a secure, trusted alternative for e-shopping, especially in countries where the market is still averse to relaying personal and credit card information through the Internet. Before a postal payment for an e-commerce transaction can be processed, ID must be presented. China Post's Green Card debit service in its collaboration with Alibaba is an excellent example of how postal operators can apply their physical payment network in the e-commerce environment.

4.2.4 Payment on delivery

Offering a variety of payment options boosts sales. Payment on delivery services are one such option.

For consumers still afraid to submit their financial data online, PYOD services are a safe choice. For sellers, PYOD services are a secure payment solution, with a very low risk of fraud.

To meet e-commerce demands, PYOD services need to be reliable, cheap and efficient, and they need to allow for various means of payment. They also require proper technology integration across sites and post offices.

In the case of international transactions, the PYOD service may also include the collection of taxes and duties, adding value for customers.

Escrow services are another opportunity for postal operators. With escrow services, the buyer pays the post office, which retains the money until the delivery is made.

4.3 Logistics

Logistics services are essential to e-commerce. Posts are among the largest providers of delivery services in the world and can be major players in the delivery of e-commerce merchandise. Indeed, delivery is one of the biggest challenges faced by e-commerce players, and buyers have high expectations regarding the quality of delivery services.

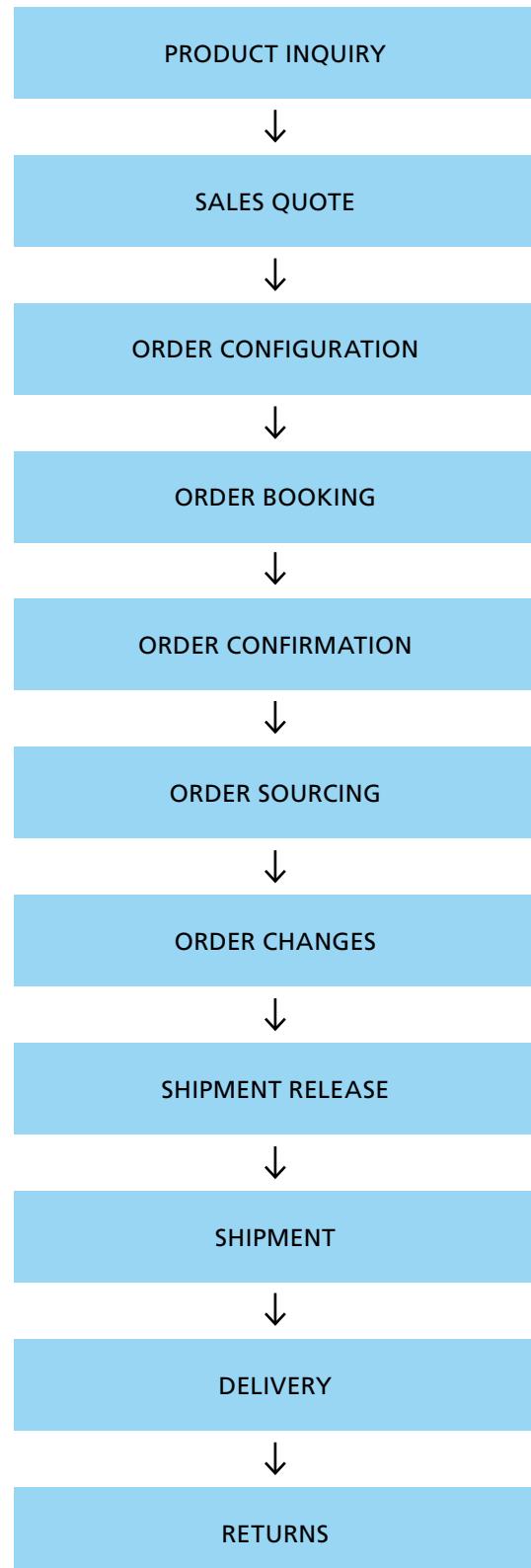
4.3.1 Warehouse and fulfilment

Warehouses are facilities used for the temporary storing and handling of merchandise before its distribution for sale or export. In general, warehouses are large plain buildings located in industrial areas with easy transportation access. They are also focal points for product and information flow between sources of supply and transportation providers.

The warehousing processes are quite extensive: they include supply and inventory management, planning, order fulfilment, and preparation for transportation.

Order fulfilment is the process of responding to orders and managing all the steps down to final delivery, namely:

- Product inquiry: initial inquiry about offerings, visit to website, catalogue request
- Sales quote: cost and/or availability
- Order configuration: selection of items
- Order booking: formal order placement, after confirmation of payment
- Order confirmation: confirmation that the order is booked and/or received
- Order sourcing: determination of the source/location of items to be shipped
- Order changes: changes to orders, if needed
- Shipment release: start of shipping process by warehouse/inventory stocking point; may include picking, packing and staging for shipment
- Shipment: shipment and transportation of the merchandise
- Delivery: delivery of the merchandise to the customer
- Returns: return of merchandise to the seller by the buyer in case of unacceptable items



An emerging trend is fulfilment outsourcing to third party logistics providers. These providers are highly specialized and efficient, and can optimize fulfilment costs based on economies of scale, thus saving money for companies. Global logistics players such as UPS and DHL are good examples.

Posts could explore the opportunities for totally or partially managing clients' fulfilment process.

4.3.2 Postage price calculator

Shipment information is essential for e-shopping management. Many search and price comparison tools compare shipment parameters for different e-shops – valuable information for buyers. In the e-business environment, less information means less revenue. Posts should provide tools and web services to calculate shipment cost and time. Ideally, these tools should be integrated into the e-shop.

To confirm purchases, buyers want explicit details on price, shipping and delivery, and on the conditions of return of merchandise. Therefore, Posts have to provide sellers with information on timing and price of delivery, preferably making it available electronically so that sellers can access the most current information. This can be done through web services: a data request is input at any time, and the relevant shipping and delivery information is provided, based on the addresses of the sender and addressee and the item specifications (weight, dimensions and additional services). Given the need for continuous availability of information, under penalty of losing sales, contingency models need to be implemented, such as redundant web services.

4.3.3 Shipping label printing

Even a medium-size e-shop might handle hundreds of orders per day. In order to optimize the process, Posts can offer label-printing applications fully integrated with e-commerce providers' systems. These applications print standard shipping labels on the seller's premises, generate shipping data to be processed, and ensure delivery quality of service through labelling easily recognized by parcel handling equipment.

4.3.4 Package pickup

"Package pickup" refers to the service whereby the Post picks up parcels directly from the seller's warehouse or premises, thus saving time, as sellers do not need to go to a postal outlet to ship orders. The postal operator needs to provide tools that facilitate and optimize parcel pickup, especially for large operations.

The Post will ideally provide at least two pickup options: by demand or by scheduled pickup. In the first case, the Post collects the parcels when it receives a request from the seller. This is a good option for small vendors. In the scheduled pickup model, designed for higher-volume sellers, a collection schedule is agreed between the Post and seller.

For larger e-commerce operations, Posts can create outposts inside the premises of e-shops for shipping preparation and parcel collection. In these outposts, Posts' resources (employees and equipment) prepare the load for shipping at its origin. This value-added service optimizes and streamlines the collection process.

4.3.5 Customs

Customs processes and regulations have not yet fully caught up with the e-commerce boom. The new market demands engagement and collaboration with international customs and transportation authorities (World Customs Organization, International Air Transport Association, International Civil Aviation Organization) in order to maintain a seamless, frictionless and secure global logistics chain.

To that end, it is important to improve some aspects related to customs:

- Advance electronic information for airlines, customs administrations and border security using the UPU's ITMATT and EMSEVT V3 standard messages. This data enables authorities and partners to identify high-risk dispatches and increases security and efficiency.
- Priority lanes for e-commerce parcels when data is available and shared between Customs and Posts through joint WCO–UPU message standards (CUSITM and CUSRSP) and the UPU Customs Declaration System (see section 7).
- Prioritization of advance customs information for delivery duty paid.
- Reduced bureaucracy for importing/exporting through trade facilitation models such as Exporta Fácil and Importa Fácil, designed in particular to help MSMEs sell their products in other countries.

Transmission of customs information in advance to the delivery country should be an integral part of postal solutions for global e-commerce and should trigger lower delivery costs. In other words, a reduction in delivery rates would provide incentive for pre-advice, even if this advance information is not mandatory. E-tailers should be grouped according to their level of compliance with pre-advice standards. The ones that provide accurate data in advance could have faster clearance processes and cheaper delivery rates.

4.3.6 Delivery

There is no e-commerce without robust and reliable delivery services. E-retailing requires quality logistics and quick delivery services to meet the modern-day requirements for speed. At the same time, there is no room for significant cost increases. Regularity and affordability are vital, and Posts are in a good position to bring these characteristics to delivery services.

Parcel delivery is the most basic – and also the most important – service that the postal industry needs to offer to e-commerce. It consists of collection, transportation, distribution, exchange and return of products purchased in e-shops.

To meet the demand in e-commerce markets, a range of delivery options need to be offered, from non-express delivery to same-day or even immediate delivery (for local delivery).

Another point to consider is that free shipping is one of the main motivators for online shopping. Consumers are usually happy to accept non-express delivery if shipping is free. However, other shipping and delivery options should be available to meet a variety of customer needs.

Some of the new delivery options go beyond traditional postal delivery, to reflect today's more hectic lifestyle: parcel lockers, delivery outside regular times, scheduled delivery, change of delivery address, and notice of delivery via e-mail, SMS or social media.

In international e-commerce, high export, logistics and distribution costs deter many companies from venturing into e-commerce. In addition, bureaucratic customs processes and unfamiliarity with customs procedures and foreign market regulations are among the main factors holding back companies from sending merchandise abroad. Posts should extend their services to act as import/export * facilitators, helping online sellers deal with international trade barriers (e.g. calculation of import/export taxes, and advice on product restrictions, standards and legal requirements).

* Paul Donohoe and Matthieu Boillat, *The postal sector – a key facilitator of global commerce for SMEs*.

4.3.7 Track and trace

Customers want to be able to track their shipment. A track-and-trace system recording precise information on order status is essential and must show the entire order life-cycle, from booking to return. Tracking information should be clear, accurate and, preferably, in real time. Track-and-trace systems can also help find misrouted orders, delayed orders and other bottlenecks in the delivery chain that affect the quality of e-commerce transactions.

An order can be deployed in multiple deliveries, usually at the request of the seller, not the buyer. The postal operator has to provide the e-shop with the corresponding tracking numbers. This helps the buyer monitor orders and reduces the number of after-sales requests related to the status of delivery.

4.3.8 Merchandise return services

In many countries, legislation allows buyers to return ordered merchandise that is unacceptable or no longer required by the customer. The UPU merchandise return service (MRS) helps sellers get back products from buyers and ship an acceptable or substitute order. This service represents a good opportunity for Posts.

The most successful e-shops usually extend the conditions for return, offering more than the legislation itself requires. This practice generates greater consumer confidence, which implies an increase in sales. Therefore, parcel services need to take into account merchandise returns, not only as a business opportunity for the Post (which indeed it is), but also as a basic need.

In some cases, the return of product is paid for by the vendor, not by the purchaser. The buyer requests the return or exchange of items, and the seller, using tools provided by the Post, sends the buyer a document for return shipping at a post office.

There are two models for this merchandise return process:

- I Simple return or non-simultaneous exchange: the seller authorizes the buyer to ship the product. The buyer then posts the returning parcel in any facility available for posting (post office, parcel locker, pickup at home, etc.), and the merchandise returns to the seller. In case of item exchange, the seller will ship the new product after.
- II Simultaneous exchange: the seller sends the buyer a new product, asking the Post to make delivery upon receipt

of the product being returned, which is then sent back to the seller. This exchange can happen at a post office or at the buyer's home. This model is difficult to implement in cross-border transactions owing to customs complexities, but it is suitable for domestic e-commerce.

In cases where the buyer must pay for the return, it will be up to the seller to manage the process of identifying the return and exchange, in direct agreement with the buyer. For the Post, it will be a simple post by the buyer, addressed to the seller.

After the establishment of basic reverse logistics, optimizations can be undertaken. An example is the inclusion of a checklist of content to be returned, to ensure that all the right items are being returned.

Another optimization is the provision of return management services: instead of items being returned directly to the seller, they are returned to a facility of the Post, where they can be repaired, resold, returned to the e-shop, or even properly discarded.

The return or exchange of merchandise in cross-border operations creates the risk that customs authorities will mistakenly tax the product as a new import. A return label for customs has already been developed by the UPU and is included in the MRS.

4.3.9 Trade Facilitation

International trade facilitation is based on three essential principles: simplification of procedures, reduction of service costs to enable competitiveness in the international market, and coverage of postal services *.

Example of successful trade facilitation for export of goods was the Exporta Fácil project in South America. This postal export project aimed to develop simplified export services suitable for small businesses by using the international postal infrastructure.

Considering the impact on the country's businesses, trade facilitation projects implementation requires cooperation work with designated operators, government bodies and authorities involved in the export chain, as well as international trade companies, customs authority, ministry responsible for the postal sector (infrastructure, transport or communications), institutions supporting small businesses, ministry of foreign affairs, among others.

* POC C2 MSMEBDG 2014.1 – Doc 3.

4.4 Customer relationship management

Customer relationship management (CRM) helps organizations to acquire and retain customers by understanding and fulfilling their needs and expectations, including managing interactions with current and future customers. CRM often involves using technology to organize, automate and synchronize sales, marketing, customer service and technical support.

4.4.1 Call centre

Trust is essential in e-commerce, since there is no face-to-face interaction, and customers must wait to receive their purchased goods. E-shops must demonstrate their credibility and quality of service, providing clear and useful information about themselves and their products, in addition to filling orders promptly and correctly.

Call centre services are an important means of providing information and enhancing customer trust and confidence. In addition to responding to client queries, call centres can act as selling centres, complementing online sales and helping customers make purchase decisions.

Moreover, some customers still prefer to complete their online purchase through a call centre because they are concerned about submitting personal and banking information online.

4.4.2 Customer data analysis

Organizational processes and technologies can be used to gather information about online client behaviours and preferences, as well as personal data. The goal is to identify opportunities, better understand customers, improve interactions, and deliver the right products and services. Customer data mining and analysis is essential to CRM; the resulting information feeds personalization, sales and support mechanisms.

However, CRM technologies for customer data mining and analysis can be complex and expensive, so it is advisable to break down CRM implementation into smaller, more manageable sections.

The best way to get customer data is through the client registration process and the monitoring of online shopping

behaviours and interactions. Interactions through call centres are another source of information.

However, there are legal and ethical considerations. Consumers must first be informed about what the website is doing with all collected data, and they also need to authorize any use of information about them. Vendors need to publish clear data privacy policies on their websites, and these policies must comply with the legislation and reflect best practices.

4.4.3 Big Data

Big data is a recent technology to improve the capability for collecting and processing huge volume of internal and external data, providing real-time information for business and operational decision.

This technology enables companies to, as some examples among many:

- Analyze tons of information to define better prices that maximize profits;
- Miner and interpret information to optimize strategies, advertisement actions, acquisition and retention of clients;
- Identify more relevant buyers;
- Analyze social media data to verify new market trends and demand change.

There are paid and free big data platforms available in the market. Posts can start the application of this technology in their own business, analyzing parcels data, for instance.

4.4.4 Marketing

Like any business endeavour, e-commerce success is dependent on a well-conceived marketing and business plan.

Posts need to identify their online customers, the market properties and niches/segments, as well as perform SWOT (strengths, weaknesses, opportunities, threats) analyses for themselves and their key competitors. The e-commerce market is characterized by high competition density and low client fidelity. Customers will easily move their business to other online companies and products to meet their needs. E-shops should thus design a marketing strategy before a technology or operational plan. A marketing plan can guide all further planning efforts. It is also important to integrate the e-commerce marketing strategy with the overall organizational business strategy, to complement off-line marketing activities.

4.4.5 Sales

The sales element involves strategies to attract and keep clients, ensuring that they have positive purchasing experiences through the e-shop. To this end, vendors must address issues such as pricing, promotions, content management and customer support.

The website is the main sales point. Internet consumers tend to demand clear and useful information, low prices, payment options, and client support. To address these expectations, sellers should invest in sales tools such as:

- Easy-to-use pages: the content must be organized in an attractive, simple and customer-oriented way. The point of view of visitors should take precedence over that of graphic designers or technical staff. Text must be objective, concise and up-to-date. Information must be useful and as complete as possible.
- Web content personalization: websites can collect information on their customers' personal behaviours and preferences and then offer them selected information based on their particular needs. Personalization can save customers valuable time by displaying relevant content quickly.
- Collaborative information: websites can enrich their content by making it possible for users to post their reviews and comments.
- Payment options: the more payment options that are available, the easier it is for clients to complete online transactions.
- Multi-channel customer support: e-mail, live chat/instant message, social media and call centres are all means by which e-shops can provide customer support in order to increase the number of completed transactions.

4.4.6 E-commerce consulting

In addition to marketing, content management, shopping, logistics and CRM issues, e-commerce businesses should consider aspects such as legal restrictions, taxation, export/import regulations and security. Many SMEs will struggle to deal with these aspects – especially when doing business internationally – which is where consulting comes in.

Successful e-commerce initiatives, especially in developing countries, require consulting structures that support stakeholders with expertise, best practices, training and capacity building.

4.5 Promotion channels

In brick-and-mortar commerce, stores are usually located in high-traffic areas. Similarly, e-tailers must ensure that their products are visible by as many customers as possible.

Web advertisement tools improve e-shop visibility and are essential for a successful e-shopping strategy. However, sellers can also explore traditional marketing tools – indeed, they can maximize results by combining physical and electronic marketing efforts.

4.5.1 Direct marketing

Direct marketing involves advertising directly to a group of consumers. One category of direct marketing is direct mail, whereby physical materials are sent directly to consumers, e.g. promotional material, flyers and catalogues.

Direct marketing increases the visibility of e-shops, especially if integrated with web content and online advertisement tools.

4.5.2 E-mail marketing

In addition to traditional mail, prospective e-commerce customers can be reached via e-mail. E-mail can be a very effective form of direct marketing to reach targeted lists of customers who have already opted in to receive information on particular products or services.

Vendors should beware of e-mail spam – mass-distributed, unsolicited e-mail, which is illegal in some jurisdictions. Besides the related legal and ethical problems, spam activities destroy e-shop reputation.

It is thus important to consider offering secure e-mail solutions. The UPU has worked on the S52 standard to provide secure delivery of e-mail. This level of security increases the likelihood that prospective customers will click on the link, as it provides assurance that an e-mail is not fraudulent.

4.5.3 Web advertisement

Web advertisement involves linking the e-shop to other websites to increase visibility. There are a number of ways to achieve this:

- Search engines: experts say that around 70% of electronic purchases involve a search process. Web search engines are a practical way for users to move through the huge amount of information available on the Internet.
- Sponsored links: search engines also allow sponsored links, that is, ads related to search parameters entered by users. Advertisers select a set of key words, and when someone searches one of them, a sponsored link engine shows ads related to that word. This is an effective and inexpensive way to market a product, as the ads are directly linked to the prospective customer's needs. This model of advertisement is based on a "cost per click" scheme – retailers pay only for successful clicks on the ad.
- Price comparison websites: in addition to searching for products and stores that the user wants, price comparison websites offer tools to compare prices and quality of service.
- Banners: banner ads generally appear across the top or bottom of a web page, but other models such as interstitial, pop-up and pop-under ads can be used.
- Electronic marketplaces: Internet-based environments that bring together buyers and sellers so that they can trade together more efficiently in a competitive environment.

4.5.4 Traditional advertising media

The use of traditional advertising media like television, radio and newspapers should also be assessed as an opportunity to publicize the e-shop and its products.

4.6 Data exchange

Logistics operations require flow of merchandise and information. For e-commerce, however, information has greater relevance than in other businesses. The volume of transactions, the continuous flow of sales, the various parties in different places, the automated processes, and the integration of pre-sale/sale/post-sale activities require intense data exchange.

Incorrect or missing information results in decreased productivity. It is therefore important to establish a data-sharing framework that is efficient, secure, reliable, affordable and always available.

4.6.1 Interconnectivity standards

Before starting data exchange between the parties involved in e-commerce transactions, it is necessary to establish standards. This is all the more relevant considering the worldwide network of postal operators established within the UPU. Without well-established standards of interconnectivity, certain e-commerce processes will not be possible.

In addition to promoting the necessary integration between the parties, standards simplify the process of deploying e-commerce solutions. By not using established and tested standards, companies waste time and money reinventing what is already built, at the risk of isolating themselves.

The following data exchange standards are available in the Catalogue of UPU Standards:^{*}

Standard	Description
EMSEVT V3	This new version of EMSEVT for postal items now contains elements that are important for e-commerce shipments, e.g. product options, better track and trace, and return options.
ITMATT	This message carries electronic customs declarations between postal operators.
CUSITM/CUSRSP	These messages carry electronic customs declarations from postal operators to Customs and the reply message from Customs to Posts.
S43 – Secure electronic postal services (SEPS) interface specification	<p>This standard comprises two parts:</p> <p>S43 Part A: Concepts, schemas and operations This document specifies a standard XML interface that will enable software applications to connect to a secure electronic postal service provided by a postal operator. It also describes the functionality and edit rules of the actual technical specification artefacts, which are represented by an XML Schema (XSD) and an associated Web Services Definition Language (WSDL) specification.</p> <p>S43 Part B: EPCM service This document specifies a secure electronic postal service, referred to as the electronic postal certification mark (EPCM) service, which provides a chain of evidence, stored by an operator as a trusted third party, to prove the existence of an electronic event, for a certain content, at a certain date and time, and involving one or more identified parties.</p> <p>EPCM is a technology that applies trusted time stamps issued by a postal authority to an electronic document, validates electronic signatures, and stores and archives all non-repudiation data needed to support a potential court challenge.</p>
	<p>E-commerce-related documents could apply EPCM on:</p> <ul style="list-style-type: none"> – electronic orders – receipts – payment transactions – other electronic messages between vendor and buyer <p>EPCM offers solid proof of legal status and non-repudiation on e-commerce transactions.</p>
S52 – Functional specification for postal registered electronic mail	<p>This standard defines the functional specification of a secure electronic postal service, referred to as the postal registered electronic mail or PREM service. PREM provides a trusted and certified electronic mail exchange between mailer, designated operator and addressee/mailee. In addition, evidence of corresponding events and operations within the scope of PREM will be generated and archived for future attestation.</p> <p>The S52 standard is intended to foster standardization of registered mail services and to help the postal community move from its traditional physical markets to electronic services, given that Posts are well positioned to take advantage of those services.</p> <p>In e-commerce, this standard provides safe e-mail communication between vendor, seller and other parties.</p>

^{*} www.upu.int/en/activities/standards/about-standards.html

In addition, there are well-accepted technical standards for improving an e-shop's visibility. The use of Extensible Markup Language (XML) and Simple Object Access Protocol (SOAP) standards to build interoperable platforms that can easily share data (product, client, logistics, etc.) are examples of good industry practice. These standards and protocols form the building blocks of web services, which enable integration of different applications, even if the applications are built on different technology platforms. Sellers should consider such standards and protocols when implementing their own e-shopping platforms.

4.6.2 Application programming interface

E-commerce systems need to communicate with each other using standards and protocols defined for information sharing. There are many ways to do so, from file sharing to web services. The best way is to build interfaces that enable data exchange, for example, an application programming interface (API).

An API allows one web-based application to interact with another application. Online merchants can use APIs from vendors or free services to improve their store's features, add site content, or communicate more readily with customers and partners.

One relevant type of application programming interface is the web API. A web API is the application programming interface for both the web server and the web browser. It gathers definitions, procedures and protocols to help the communication between different computer software programs. A web API is a type of web service; as such, it can be used to connect a website to several other systems and applications.

4.6.3 Product, customer and order information

E-shops can consider using tools to export their product information to other websites, for example, to share item descriptions and price information. These tools enhance the visibility of the e-shop, thereby improving its sales potential.

Consumers should have full access to information on the manufacturer/importer of the product, item features and payment terms, as well as manuals, data sheets, and so on.

Data on consumers may only be disclosed to third parties with the express consent of consumers themselves. It is important to remember that the security of information provided by consumers is the responsibility of the company that is offering the products or services; the company must answer for any damage caused to consumers by the violation and misuse of such data. Site security is vital to an online business, to avoid lawsuits and ensure the success of the venture.

4.7 Support elements

The most important support elements for e-commerce transactions are detailed below.

4.7.1 Secure identification

4.7.1.1 Digital certificates

A digital certificate is a file that stores a set of information about an entity (person, company, computer or device), along with the public key linked with that entity's private key. The following are some applications of digital certificates in e-commerce:

- a Web servers' digital certificates allow buyers to verify the authenticity of a website.
- b Buyers can identify themselves in e-shops using their digital certificates, with no need to store passwords in the e-shop database.
- c Vendors and buyers can digitally sign their electronic messages with digital certificates.
- d Parties can cryptograph sensitive information.

4.7.1.2 .post

.POST is an Internet Corporation for Assigned Names and Numbers (ICANN) top-level domain name sponsored by the Universal Postal Union. With .POST, the postal industry can establish a secure environment on the Internet for trusted and branded communication. An Internet user who accesses a .POST-enabled website would immediately recognize it as belonging to a valid postal service or to a provider of postal services.

More information about .POST and its applications, as well as registration, is available at www.info.post.

4.7.1.3 Postal identity framework

The UPU recently defined new standard S64 on postal identity management; the standard endeavours to define a suitable framework for identification of a person or company after an enhanced registration process that involves face-to-face identification, digital certificates, and other registry and authentication tools. A secure environment under .POST, integrating the postal ID (called "PostID"), will reduce e-shopping risk and help deliver a stable and secure platform for e-commerce.

The POC E-Services Committee, the .POST Group and the Telematics Cooperative and POC C1 Standards Board are collaborating on business issues, technical parameters, web service specifications, protocols and other implementation content for .POST and postal identification services.

Using postal ids, Posts can act as trusted third parties in e-commerce authentication, taking advantage of their reputation for reliability.

For international transactions, such an identification platform is valuable because it is difficult to access reliable information about vendors or buyers abroad. On local markets, it is easier for e-shops to validate addresses, national documents, bank account information and other forms of identification in order to increase confidence.

4.7.2 Secure messaging

It is important to define a basic set of digital security policies when implementing an e-commerce structure. The security policies should be comprehensive, taking into account website functionalities, information storage and usage, legal and privacy issues, permissions and restrictions, fraud prevention and detection, and investigation procedures.

Security policies must also be clear and public, that is, easily accessible and understandable by vendors, buyers and suppliers.

Widely accepted technical security standards provide relevant security principles and guidelines for e-commerce implementation. The ISO/IEC 17799 standard, as well as other standards and good practices, can be applied to e-commerce solutions.

Online shopping sites also require the adoption of secure web protocols. The most known protocol on e-commerce websites is the Hypertext Transfer Protocol over Secure Socket Layer (HTTPS). HTTPS provides authentication and encrypted communication between the website and the user and is used for electronic payment transactions, as well as for other security-sensitive communication.

Besides HTTPS, an e-commerce platform can include other secure Internet protocols, for example:

- a FTP over SSL: stands for File Transfer Protocol over Secure Sockets Layer and can be used for secure file transfer among e-commerce websites.

- b) VPN (virtual private network): two or more e-commerce websites establish a private network using secure protocols over the Internet or over a private telecommunication system, in order to share information between them.
- c) IPSec (Internet Protocol Security); a set of protocols for securing Internet communications by authenticating and/or encrypting each IP packet on the TCP/IP (Transmission Control Protocol/Internet Protocol) network layer.

As discussed earlier in the “Interconnectivity standards” section, the UPU electronic postal certification mark, defined in the UPU Regulations RL 263 and in standard S43, applies trusted time stamps issued by a postal authority to an electronic document, validates electronic signatures, and stores and archives all non-repudiation data needed to support a potential court challenge.

4.7.3 Market development, partnership, financing and capacity building

The development of socio-economic and market conditions is of great importance for electronic commerce. The e-commerce market is characterized by agility, strong competition and the need for integration among the various entities involved in the online transaction. Hence, the entire market needs to develop its capabilities for the benefit of e-commerce.

Given the range of services it offers that are relevant to e-commerce, the Post can play an important role in trade development initiatives, for example, by:

- I offering services that simplify processes necessary for the proper functioning of e-commerce, such as trade facilitation, e-shop hosting for MSMEs and cheap payment solutions;
- II actively participating in associations for the development of e-commerce;
- III building partnerships for complete e-commerce solutions;
- IV financing the development of ideas and e-commerce solutions.

4.7.4 Legal framework

The formalization of electronic transactions is a departure from the culture of paper records. In the e-commerce world, contracts can be entered into – signed and filed digitally –

without the physical presence of the parties and without the need for signed hard copies.

When using digital media for commercial agreements, it is necessary to address the issue of security, because the parties to the agreement need to be able to prove that the transaction has been completed as agreed.

A terms of service document is a valuable instrument, specifying the role of e-commerce actors. It provides legal support in case of questions or disagreements and strengthens the contract because the parties are aware of the terms and conditions of the business transaction.

Main legal points to bear in mind are the right to information, protection against unfair practices and misleading advertising, data confidentiality, and consumers' cancellation rights.

With regard to the right to information, consumers should have full access to information about the manufacturer or importer of the product, the characteristics of the item, and payment terms. They should also have access to manuals and data sheets, among other information.

In the area of protection against unfair practices and misleading advertising, any contractual clause that is ambiguous or vague could always be interpreted to the benefit of the consumer. Also, clauses providing undue benefit to the company to the detriment of the consumer may be declared void.

It is necessary to remember that advertising that is misleading to consumers, for example, in relation to the quality/quantity of a product, the supplier or general business conditions (payment terms, price, etc.), can result in sanctions against the e-shop, including the obligation to repair any damage to consumers.

With respect to data confidentiality, consumer information available to the company may only be disclosed to third parties with the express consent of consumers. The seller is responsible for any breach of trust and is liable for any ensuing damages. Website security is thus vital to the success of an online business.

In most countries, consumers have the right to cancel purchase contracts made online, without fees, fines or penalties. The time frame for use of this right of cancellation varies from country to country, usually ranging from 5 to 15 days after completion of the transaction (signature of contract, payment confirmation or date of delivery).

5 Domestic, regional and global markets

The global network established by UPU members allows postal operators to do business around the world, providing a competitive advantage for the postal industry.

That being said, the domestic environment is usually more affordable. As postal operators are often governmental institutions or companies, they have certain advantages in exploring the local market, including specific regulations, funding support and different tax systems. In addition, the

postal operator has control over resources and processes in its home market, giving it greater freedom to develop e-commerce solutions to meet the needs of local businesses.

According to UNCTAD * Information Economy Report 2015, the digital economy expands and affects more business activities. The e-commerce growth will continue by the next years, as the eMarketer consultancy estimates:

Good examples confirm that national e-commerce strategies

Top 10 countries ranked by e-commerce sales volume, 2013–2018

(US\$ billion and % of growth)

Source: eMarketer, December 2014

	2013	2014	2015	2016	2017	2018
China	\$315.8	\$426.3	\$562.7	\$714.6	\$871.8	1,011.3
	47.0%	35.0%	32.0%	27.0%	22.0%	16.0%
USA	\$264.3	\$305.7	\$349.1	\$394.4	\$442.5	\$493.9
	16.5%	15.7%	14.2%	13.0%	12.2%	11.6%
United Kingdom	\$70.4	\$82.0	\$93.9	\$104.2	\$114.6	\$125.0
	17.0%	16.5%	14.5%	11.0%	10.0%	9.0%
Japan	\$62.1	\$70.8	\$79.3	\$88.1	\$96.9	\$106.1
	17.9%	14.0%	12.0%	11.0%	10.0%	9.5%

	2013	2014	2015	2016	2017	2018
Germany	\$51.9	\$63.4	\$73.5	\$82.9	\$92.0	\$99.3
	21.7%	22.1%	15.9%	12.9%	10.9%	8.0%
France	\$34.2	\$38.4	\$42.6	\$46.1	\$49.7	\$53.3
	13.2%	12.1%	11.1%	8.2%	7.8%	7.1%
South Korea	\$29.3	\$33.1	\$36.8	\$40.4	\$44.1	\$47.8
	12.6%	13.0%	11.0%	10.0%	9.0%	8.5%
Canada	\$21.0	\$24.6	\$28.8	\$33.0	\$37.6	\$42.7
	17.7%	17.4%	16.8%	14.9%	13.8%	13.5%
Russia	\$15.1	\$17.5	\$20.3	\$23.4	\$26.9	\$30.9
	27.4%	16.0%	16.2%	15.3%	14.9%	15.0%
Brazil	\$13.3	\$16.3	\$18.8	\$21.3	\$23.8	\$26.2
	28.0%	22.0%	15.5%	13.5%	11.5%	10.0%

*UNCTAD stands for United Nations Conference on Trade and Development. The Information Economy Report 2015 gathers e-commerce information from more than 130 countries and evaluates their capabilities for global e-commerce.

developed in collaboration with relevant stakeholders (as government, legislators, web store associations and postal operators) can play a useful role. This collaborative approach is effective in overpassing the main challenges and barriers for e-commerce development.

Nevertheless, in many countries the greatest e-commerce opportunities are in the regional and global markets. This is typically true in countries that have a small population or that are very economically dependent on other countries. But even for countries with strong domestic consumption, cross-border e-commerce is an opportunity to explore. Of course, cross-border e-commerce involves complexities such as customs clearance and multiple logistics providers, in addition to different laws, currencies and languages.

For the regional market, there are often trade agreements to facilitate the exchange of merchandise, usually covering cross-border e-commerce activities. Postal operators should keep abreast of such trade blocs, as they can form the basis for solutions that meet regional market needs.

In Africa and the Middle East, e-commerce is improving rapidly, according to the UNCTAD Information Economy Report 2015. However, barriers remain in areas such as transport and logistics, inadequate legal framework and limited purchasing power. At the same time, telecommunications networks are spreading over the region, smartphone ownership is increasing and innovative solution are emerging, mainly the ones related to mobile payment.

Considering this scenario, a successful endeavour on e-commerce in Africa and Middle East should primarily be conducted on mobile devices, adapting web solutions for small screens.

164 According to the same report, Asia and Oceania region accounts for 28% of the total sales of B2C e-commerce and for one third of the volume of international postal deliveries of small packages. China owns a large share of e-commerce activities in the region. Japan, Singapore, South Korea and Australia are also important markets.

According to the report on the 2014 UPU E-Commerce Forum

(POC 2014.1–Doc 16), "the postal services market is changing in Europe, challenging postal operators to adapt their services to meet customers' needs. The European Union initiative on a single e-commerce market is a particular driving force. In Europe, on average, 25% of retailers sell across borders, and 11% of buyers buy from other European countries. Cross-border delivery prices are twice as high as domestic ones (for a 1 kg package), regardless of distance. The European postal industry is ready to take up the market challenges and is committed to also respond to the EU's expectations. Significant investments are being made to update the well-established network so as to meet these new demands."

The same report states: "In Latin America, e-commerce is in its early development phase, and within the postal sector the focus is on expanding innovation in the postal platform through the development of IT infrastructures, encouraging network interconnection across physical, financial and electronic postal services, and enhancing national regulation and strengthening relations between Posts and Customs. Cross-border B2C e-commerce among the Mercosur countries amounts to less than 1% of the overall retail market in that region. This shows the potential still to be explored in Latin America."

6 E-commerce business models and strategies

There are several possible e-commerce business models for Posts. These models are not mutually exclusive and may be combined to suit the Post's capabilities and the characteristics of the market.

according to the type of e-commerce relationship:

E-commerce business model	Description
Business-to-business (B2B)	Companies doing business with companies
Business-to-consumer (B2C)	Companies selling merchandise and services to consumers
Business-to-employee (B2E)	Companies selling merchandise and services to employees
Consumer-to-consumer (C2C)	Individuals selling merchandise and services to individuals
Business-to-government (B2G)	Companies offering services to government, such as in the case of public e-procurement
Government-to-business (G2B)	Governments offering services to businesses
Government-to-citizen (G2C)	Governments offering services to citizens
Government-to-government (G2G)	Government institutions offering services to other government institutions

There may be other relationships, but the above are the most relevant to the postal industry.

Each type of relationship demands different logistics to meet the needs and expectations of the parties involved in the e-commerce process, as shown in the following table:

Relation	Demand	Parcel profile	Delivery	Sellers	Consumers	Distribution	Negotiation
B2B	Regular – scheduled and predictable demand	Grouped items	Non-express	One	Known	Concentrated	Flexible pricing Case-by-case negotiations are common
B2C	Irregular	Small packages	Express and non-express	One	Unknown	Diffuse	Non-flexible pricing
B2E	Irregular	Small packages	Express	One	Known	Concentrated	Non-flexible pricing
C2C	Irregular	Small packages	Express and non-express	Many	Unknown	Diffuse	Flexible pricing Online auctions and face-to-face negotiations are optional
B2G	Regular	Small packages	Express and non-express	Many	Known	Concentrated	Non-flexible pricing, usually decided by e-procurement
G2B	Regular	Small packages	Express	One	Known	Diffuse	Non-flexible pricing
G2C	Irregular	Small packages	Express	One	Known	Diffuse	Non-flexible pricing
G2G	Irregular	Grouped items	Non-express	One	Known	Concentrated	Non-flexible pricing

After the e-commerce relationship model has been defined, it is necessary to identify the target audience. On the basis of the target audience, the Post can build client profiles: geographic location, needs, types of products wanted, habits and restrictions. The Post can then separate the target audience into segments according to similar client profiles.

With the target audience and segments defined, the Post's competitiveness in providing e-commerce solutions on the market should be assessed. Common tools for analysis of competitiveness include the SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis and the Porter's Five Forces analysis.

These analyses are important in order to provide a clear vision of how competitors work and what Posts' opportunities and competitive advantages are, as well as to define a market position (leader, follower, complementary or niche market). The defined market position will form the basis for the business model selected.

The table below summarizes the main business models and the most common revenue formats.

Business model	Description	Revenue
Parcel delivery	National, regional or international delivery services for web stores, e-mails and e-marketplaces	Per successful delivery. Additional services may be considered
Logistics provider	The Post manages all or part of the seller's logistics chain, e.g. the warehouse, inventory, order processing, fulfilment, delivery and after-sales	As solutions are highly customized, revenue model takes into account costs of many operations
Digital delivery	Safe online delivery of digital items, e.g. music files, images, videos and documents	Per successful delivery
E-commerce payment	The Post provides electronic or physical payment services for e-shops	Per transaction and/or periodic fees
Virtual international address service	The Post provides an international physical address in another country to allow customers to easily purchase goods from that country's e-merchants, and have them forwarded through the Post.*	Per transaction and/or periodic fees
Escrow services	The Post acts as a trusted third party for payment and delivery of goods bought on the Internet	Per transaction and/or periodic fees
Postal e-shop	The Post has an e-shop to sell products and postal services on the Internet	Buyer pays for product purchased and also for the delivery of any physical items
E-shop hosting	The Post provides hosting services for e-shops	Monthly, half-yearly or yearly fees
Postal e-mall	The Post provides an electronic mall for e-shop hosting and product advertising	Monthly, half-yearly or yearly fees Commission on sales
E-marketplace	The Post acts as intermediary for e-commerce transactions	Monthly, half-yearly or yearly fees Commission on sales

* Measuring postal e-services development. A global perspective. Version 2.0, UPU, October 2015.130 countries and evaluates their capabilities for global

6.1 Parcel delivery

An e-commerce parcel delivery service encompasses the collection, transportation, distribution, exchange and return of products purchased on the web. Delivery is the most basic (and also most important) service the postal industry offers to the e-commerce market.

The parcel delivery model can be applied to any e-commerce relationship model. However, each relationship model requires different service attributes. Delivery services linked to B2C, B2E, G2C and C2C websites are characterized by the following: small and medium parcels, without customization, delivered to various regions, express or non-express, and unscheduled demand.

On the other hand, delivery services for B2B, G2B and G2G sites tend to be characterized by larger consolidated volumes, with customization, non-express, and scheduled demand.

As already discussed earlier in the "Delivery" section, e-commerce clients demand more features and information than other customers of postal services. E-commerce parcel delivery calls for quality, agility, reliability, technology integration, and the lowest price possible.

6.1.1 Quality

E-commerce consumers have very high expectations in terms of quality – they want to be sure that they will receive what they order (and in most cases pay for in advance), and that there will not be unexpected delays.

A best practice for e-commerce is the establishment of a service-level agreement (SLA) to better organize the relationship between the Post and the retailer and increase the latter's confidence. An SLA defines deadlines, expected performance, bonuses and fines.

From the consumer point of view, delivery deadlines must take into account the processing time of payment confirmation, the preparation of the order, collection, shipping and, finally, delivery.

6.1.2 Agility

The e-commerce market is highly competitive, and services must be quickly adjusted to meet customer needs. This is a particular challenge for postal operators, which must contend with organizational decisions, as well as restrictions related to hiring, resource allocation, and the equitable treatment of all customers (adjusted services must serve the entire market equally). It can therefore be difficult to make quick adjustments to meet the specific needs of particular customer groups.

6.1.3 Reliability

The e-commerce business greatly depends on the buyer experience: if the transaction is not successful, the likelihood of the client using the service again diminishes. Problems are unavoidable, but the way they are resolved can significantly minimize the drop in consumer confidence. It is therefore important to build a customer service framework to deal with problems and provide solutions.

The following elements should be included in building a reliable service: enhanced reverse logistics services, order tracking, a customer service structure, process verification and troubleshooting channels, and indemnities. Finally, problems need to be recorded and services continuously improved, based on lessons learned.

6.1.4 Technology integration

For e-commerce, information about delivery is just as important as the actual delivery. The seller needs to have access to delivery information through a user-friendly, standardized and highly available IT structure. It is therefore important to develop an application programming interface and protocols for integrating processes between postal operators and e-shops.

The technological integration should cover all the processes involving the Post, the seller and the buyer. As this requires a wide range of system integrations, the gradual deployment of the technology framework is recommended. The suggested order is listed below:

- a Track and trace
- b Delivery time calculation
- c Postage price calculation
- d Shipping preparation
(pre-authorization and shipping label)

- e Package pickup
- f Domestic return of merchandise
- g Customs information (including pre-advice, import/export information harmonization and restrictions, duty calculation and payment, delivered duty paid solutions)
- h International return of merchandise

It is not usual to charge for the use of an API. IT costs can be built into the price of the parcel service.

The UPU e-commerce IT framework (see section 7) has been developed for the use of postal operators, so that they do not have to worry about IT tools and can concentrate on the business and operational aspects.

6.1.5 Lowest possible price

High competition and the attractiveness of free shipping for buyers exert pressure on delivery prices in the e-commerce market. On the other hand, it is necessary for Posts to preserve a sustainable business model.

The best way for postal operators to seek a better competitive position while avoiding an unsustainable financial situation is by continuously improving processes to optimize quality of service and operational productivity, and reduce costs. For example, for large e-commerce operations, Posts can skip steps in the operational process by receiving advance information electronically and consolidating loads.

Posts can offer multiple shipping options with different service agreements. Merchants can choose to offer their customers a choice in terms of shipping options and associated delivery prices.

6.1.6 Dedicated delivery services

The decision of whether to create new delivery services dedicated to e-commerce is a strategic one that needs to be properly evaluated by the postal operator because it has a significant impact in the short, medium and long term.

Dedicated e-commerce delivery services can be applied to new markets, where Posts can build services together with a small group of players. This makes it easier to adjust the new services without affecting established services used by the majority of clients, which still do not sell online.

In established markets where the Post has a low market share, new services dedicated to e-commerce can be created to increase market share quickly. A new service designed for the e-commerce market communicates a strong message that the postal operator wants to be a major supplier to this market.

With dedicated e-commerce services, there is a risk of cannibalizing other delivery services, given the service overlap. Moreover, this overlap can make it difficult for clients to understand the delivery service portfolio.

One way to avoid these problems would be to adapt services that already exist and that are familiar to the market. Given that e-commerce is the main emerging customer segment of the parcel business, it would be good to consider adapting the entire portfolio of services to the needs of the e-commerce market.

6.2 Logistics provider

In this model, the Post provides services beyond the physical delivery of merchandise. It manages all or part of the seller's logistics chain: e.g. warehouse, inventory, order processing, fulfilment, delivery and after-sales (see the "Warehouse and fulfilment" section).

Under the logistics provider model, customized solutions are developed for each client as part of a fully integrated system. Thus, the revenue model encompasses a variety of activities, ranging from storage of items to after-sales activities, such as return and exchange of merchandise.

This business model can also be applied to any e-commerce relationship model; however, the format will vary depending on the vendor's characteristics. A warehouse can be dedicated to a single large vendor in B2B, B2C, G2B, G2C and G2G operations. On the other hand, a warehouse can be shared by a number of smaller vendors for B2B, B2C, B2E, G2B, G2C and G2E websites.

The logistics model is not ideal for C2C websites, given the fragmentation of items and tax complexities involved. This model would only be recommended when vendors' items are under the management of an e-commerce intermediary, which acts as a proxy for a large number of individual sellers.

The model seeks to increase market dependency on postal services, establishing entry barriers for new competitors and enabling e-shops to focus on their core business – selling online.

The parcel delivery model is predominantly a "best service" strategy. It drives innovation and aims to offer the best solution for the market, with a view to becoming a market leader. Parcel delivery solutions should take into consideration the increasing dependence of customers on postal services. This means finding innovative ways to meet customer needs. On the other hand, the logistics model considers each customer's needs to arrive at a "total solution".

The two models are compared in the table below:

	Parcel delivery	Logistics
Business strategy	Best service: achievement of competitive advantage through service innovation and quality. Operational process improvement is important to reduce costs and prices. Services offered are standardized and geared to an extensive target audience.	Total solution: creates strong bonds with customers to meet their needs in a customized manner. Complete solution based on customer savings (reduced total cost of the supply chain). Prices are calculated for each contract, according to specific operational modelling
Scope	Pre-shipping, posting and delivery of parcels, within the set limits for weight and dimensions	Entire supply chain
Product portfolio format	Standardized parcel delivery service, with some options with respect to level of service. It is possible to provide special services for customers meeting certain criteria.	Customized
Service elements	Pre-shipping (packaging and labelling) Posting Transportation Delivery Reverse logistics	Logistics planning Management of incoming supplies Warehouse management Inventory management Order fulfilment Pick and pack Issuing of tax documents Shipping Customized transport management Customized distribution Customized reverse logistics
Complexity	Medium	High

6.3 Digital delivery

In this model, the Post offers secure electronic distribution of digital files acquired online, such as music, images, videos and documents. Postal operators can build solutions for the electronic transfer of digital content, adding secure features as available in physical postal deliveries, such as privacy, inviolability, authentication and time-stamping.

Digital certification tools (EPCM and PREM) built into the .POST platform could support the digital delivery business model.

It is important to build a robust technological platform for high availability and for user-friendly connection to e-shops. Thus, an e-shop could sell a digital product hosted by the Post, which provides a storehouse of digital content.

From the market perspective, this service is not simply a repository of files on the web. The defining factors that set the postal digital delivery service apart from other file exchange services are the security and reliability of its technological platform and the Post's reputation as a trusted provider of physical services.

6.4 Virtual international address service

In a virtual international address service, a Post provides an international physical address in another country to allow customers to easily purchase goods from that country's e-merchants, and have them forwarded through the Post. This is a simple model to open new market demand and to simplify the import process.

However, there are many non-postal competitors in this model. Posts may consider the possibilities of start an own business or to integrate with other providers, as usually most of them already use the postal services. Being a competitor could mean taking the risk of other players looking for new delivery partners. This strategic position must be well evaluated by the post.

The revenue model is usually based on transaction or periodic fees, or a combination of both. The price can also be included in the shipping prices.

6.5 E-commerce payment

Posts have a long history of providing payment services to their customers, mostly through their physical network. The e-commerce payment model extends this postal business, offering a variety of payment options for e-retailers, such as payment at the post office, payment on delivery, electronic payment on websites, and payment via mobile device.

Postal payment solutions need to be easily integrated with e-shops using an application programming interface with high availability.

Anti-fraud mechanisms are also vital. In many countries, vendors absorb the risks of online sales made by credit card: if a consumer informs the credit card issuer that he/she did not make the purchase, the payment value is returned to the consumer, at the loss of the seller.

As credit cards are the most common means of making online purchases, a solution is needed for risk analysis of orders paid by credit card. A process for evaluating suspicious requests is also needed. These steps can minimize risk of fraud.

Besides the risk of fraud, reimbursement processes in cases of cancellation, exchange or return need to be designed and executed with care. These situations can result in tension between the buyer, the merchant and the payment provider. It is necessary to quickly resolve problems without neglecting security aspects.

The revenue model is typically per transaction or based on periodic fees, or a combination of the two. Under the per-transaction model, a commission or fixed amount is paid for each payment event. This is the preferred option of retailers, as they only pay when sales are made. In cases where equipment is provided for the processing of payments (e.g. card readers or smartphones), it is also common to apply a periodic fee to cover the cost of those devices.

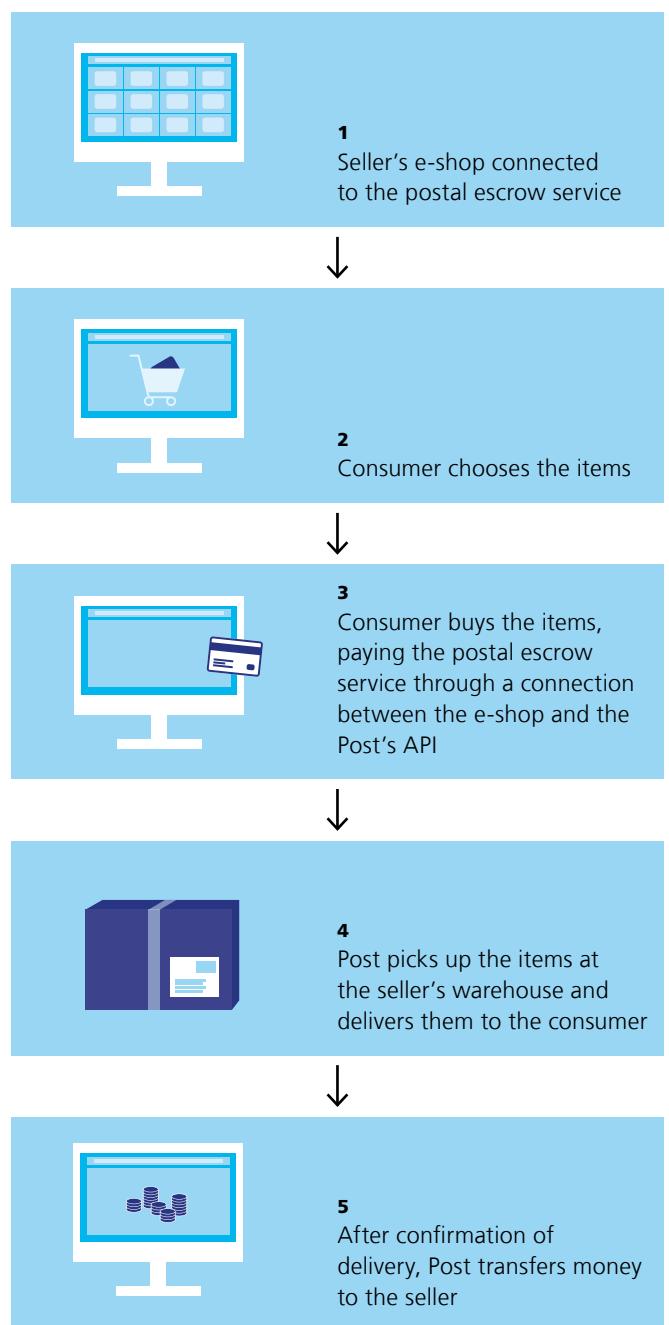
See also section 7 for payment tools provided as part of the UPU's integrated e-commerce IT framework.

6.6 Escrow services

The escrow business model expands the e-commerce payment model by linking product delivery with payment. To increase trust in e-commerce, an escrow service is used to ensure that the payment is not released until the product is delivered and accepted:

In this model, the Post acts as a trusted third party in the online buying process. For consumers, the model guarantees delivery. For sellers, it guarantees payment.

As with the e-commerce payment model, the risk of fraud and the rapid processing of reversals are points of great concern. But these aspects are even more complex in the escrow model, as the Post has temporary responsibility over the property of both parties: the seller's product and the buyer's money.



6.7 Postal e-shop

A Post can build an e-shop to sell its own products and postal services online, in order to learn how to offer further e-commerce services.

Philatelic products are an obvious choice for a postal e-shop; however, hybrid mail, change-of-address and electronic postal services are also possibilities. Buyers pay for products and services purchased. They also pay any delivery fees.

See the "E-shops" section of this guide for further details on how to build an e-shop.

6.8 E-shop hosting

E-shop hosting makes it possible for any company to create and manage an e-shop. All infrastructure needed to sell on the Internet must be ready for merchants, so that they can focus on product inventory, means of payment, delivery services, advertisement and sales management.

Posts offering this model provide the technological environment for the e-shop, fully integrated with postal delivery and payment services.

MSMEs looking to participate in the e-commerce market are the best candidates for this service model, as they constitute a new audience with little e-commerce experience. Thus, even though the technology is simplified, the necessary assistance must be built into the model to help sellers create, configure and operate their hosted e-shop. This technical assistance is one of the key factors in ensuring the success of the business model.

Revenue may come from monthly, semi-annual or annual fees paid to the hosting service.

6.9 Postal e-mall

In the e-mall model, Posts provide online malls for product advertising and e-shop hosting. This model gathers many stores on a single website that includes search tools, and promotion and sale of merchandise.

An e-mall may host e-shops in its own IT infrastructure, as an expansion of the e-shop hosting model. Alternatively, an e-mall might be a showcase of products from stores hosted elsewhere.

The best option is to adopt both approaches: hosting e-shops and at the same time giving visibility to stores hosted by other providers. This option increases the attractiveness of the website, as major brands of electronic retailing are promoted. These big stores act as anchors that attract consumers to the e-mall, where they may find products of more obscure sellers.

Postal operator websites are usually among the most popular in their countries, attracting many visitors to e-mails. For retailers, participation in a postal e-mall increases consumer confidence, as the stores are associated with the postal operator's solid reputation.

The e-mall model was the first attempt to replicate, on the Internet, the success of brick-and-mortar malls. The big challenge is to attract online shoppers. In mature e-commerce markets, e-mall models are in decline. In these markets, the main motivators for purchasing online are open search and product comparison, not e-mails. Therefore, a good strategy for e-mails is to integrate their search and comparison features with big websites dedicated to these activities. Search engine optimization tools are available for e-mall management. These tools seek to raise the ranking of products on sites like Google and Yahoo (e.g. through sponsored links, sharing of product information and HTML code improvement).

Social media and the mobile web can also be used to increase the visibility of e-mails. E-mails can be integrated with sites like Facebook, Twitter, Google+ and Pinterest to attract new users and reach buyers where they are.

The vendor support structure can include web and phone support, and even personal assistance for bigger sellers. Support needs to cover not only the tools for hosting, but also the delivery services, payment methods, showcase management, post-sale services, advertising, item search and comparison, and logistics.

Revenue model may include periodic fees, sales commissions and advertisement.

See also section 7.2 for details on how the UPU's Global Repository for Postal E-Shops will interconnect postal e-mails.

6.10 E-marketplace

The e-marketplace model gathers features from other business models. An e-marketplace includes a wide range of products from many vendors. It also receives payment, distributes orders, delivers items and releases funds to sellers after successful delivery.

In the e-mall model, sellers are responsible for sales. In the e-marketplace model, the Post acts as trusted third party and so is partly responsible for sales. The Post also accepts risks of payment fraud – ultimately it becomes a payment operator.

The e-marketplace model is complex and faces competition from large e-commerce sites. In some countries, large e-marketplaces such as eBay, Amazon and Alibaba are well established. Posts should evaluate the influence of these e-marketplaces and consider the risks of entering into competition with specialized e-commerce companies. An alternative strategy can be to act as an e-marketplace for niche markets such as handicrafts. Another option can be to build partnerships with e-marketplaces to provide postal logistics, delivery and payment services, instead of creating a new e-marketplace.

It is important to consider the risks of not following the e-marketplace strategies and activities. These companies have intention and capabilities to become strong competitors of posts. Through the recent years, they build platforms to offer their clients a full range of e-commerce features: web store hosting, electronic payment, advertisement, and logistics. Now they are testing last mile delivery, as Amazon is doing. All these movements are threats to the postal industry. They move the delivery decision power from buyers or vendors to huge and centralized e-marketplaces.

Posts must offer the best delivery and logistic services for e-marketplaces in order to stimulate them to give up the construction of their own delivery services. Posts also need to be innovative as e-marketplaces are working on non-traditional delivery options – drones, groceries delivery, collaborative shipping (crowd shipping).

If the Post decides to build a postal e-marketplace, it is recommended to start with simpler models: own e-shop, hosting, payment gateway and e-mall.

6.11 Partnerships

Considering the strong competition in the e-commerce market with plenty of well-prepared players, it is crucial to consider the possibility of establish partnerships in order to accelerate business models implementation. Time-to-market is essential for e-commerce.

The Guide on Public Private Partnerships for e-services in the Postal Sector (POC C 4 WORKSHOP 2015.1–Doc 4) provides a comprehensive content on how to plan and execute partnerships for postal electronic services, including e-commerce. The Guide covers partnerships definitions, types, options, financing structures, requirements and, finally, practical recommendations and successful cases.

7 UPU IT Tools

In terms of international e-commerce, postal customers (retailers and buyers) have the following needs:

- Trusted international marketplaces as the .POST web store solution
- Secure identification of retailers and buyers for online transactions
- Payment services
- Physical delivery of the goods

- Track and trace for the shipment and the payment
- Handling of export/import and addressing of security needs
- Merchandise returns, including adjustment of import/export declarations and payments
- Refunds for returned goods
- Fully electronic processing

UPU IT Tools for e-commerce
italic = functionality available in 2016

UPU solution	Description	Role for e-commerce	Available since
.POST	<p>Sponsored by the Universal Postal Union, the sponsored Top-level Domain (sTLD) “.POST” is the first Internet space governed by a UN organization:</p> <p>a secure, trusted and integrated digital postal network,</p> <p>defining the postal sector in the digital economy,</p> <p>regulated by UPU for the Postal community and its users,</p> <p>only trusted participants (accredited by member countries and/or the UPU),</p> <p>worldwide platform for digital communication and commerce supported by the postal sector in each country.</p> <p>A digital single postal market</p> <p>.POST provides a secure online framework to enhance confidence of internet users of postal services</p>	<p>Specifics for eCommerce:</p> <p>Secure DNS hosting for all Posts</p> <p>Cloud solutions for e-commerce shops</p> <p>Promote secure e-commerce inclusion in underserved regions;</p> <p>Facilitate secure cross-border interoperability;</p> <p>Integrate eCommerce services with secure e-communications between member countries</p> <p><i>PostID – framework for linking electronic identifications across borders; verification of vendor's and buyer's certificates as a Trustmark for international services</i></p>	2012
IPS	<p>International Postal System:</p> <p>Full-blown Int'l mail management system based on UPU standards.</p> <p>For all mail classes.</p> <p>Preparation of shipments</p> <p>Flight Route management</p> <p>EDI generation and sending</p> <p>Scanning and Track & Trace</p> <p>Int'l Accounting</p> <p>Reporting</p> <p>Interfaces with other systems</p>	<p>Specifics for eCommerce</p> <p>CARDIT message to airlines including the electronic Consignment Security Declaration (eCSD)</p> <p>treatment of ECOMPRO products</p> <p>treatment of eCIP products</p> <p><i>Treatment for Merchandise returns</i></p> <p><i>Accounting for all</i></p>	1996

UPU solution	Description	Role for e-commerce	Available since
POST*Net	<p>EDI network fully owned and managed by UPU/PTC transmitting all UPU Standard EDI messages between participants of the Postal supply chain.</p> <p>Processing of 99% below 5 minutes interruption-free & load-balanced</p> <p>Value-added service</p> <p>operational real-time dashboard (configurable) including content-based analysis</p> <p>monitoring/alerting</p> <p>reporting consolidated info</p> <p>repair/backup service of missent EDI</p> <p>bridge with GXS network = network routing is totally transparent for the user</p>	<p>detect immediately EDI problems which would lead to financial penalties (non-respect of EDI transmission rules)</p> <p>traffic reporting by partner/period</p>	1996
QCS	<p>Quality Control System:</p> <p>operational monitoring of volumes, performances, quality KPIs</p> <p>UPU Parcel Report</p> <p>EMS/Letter/Parcel performance reports</p> <p>Dispatch Series reports</p> <p>various other reports, incl. free reporting tool (operator creates own reports)</p>	<p>Data Warehouse to analyze traffic & performance with partners and to monitor EDI operations (with drill-down)</p>	1996
CDS	<p>Customs Declaration System:</p> <p>For capturing, creating, transmitting, receiving electronic customs declarations and exchanging them with customs / security authorities.</p> <p>supports ITMATT, CUSITM, CUSRSP messages</p> <p>interfaces with other systems</p> <p>security alerts and referrals</p> <p>Large Customs functionality</p> <p>Risk management rule engine</p> <p>Tax/duty calculation rule engine & Tax invoice generation</p> <p>integrated Prohibitions & Restrictions check</p> <p>Address lookup & verification</p> <p>HS customs code lookup & suggestion</p> <p>Landed Cost calculator</p>	<p>Specific for eCommerce:</p> <p>provides the electronic pre-advice functionality requested by customs & security</p> <p>including export watchdog for alerts & Prohibited/restricted goods</p> <p>including Customs Tariff code (HS) lookup</p> <p>including Address validation</p> <p><i>including a Landed Cost calculator</i></p>	2013

UPU solution	Description	Role for e-commerce	Available since
Global Track & Trace	Web-frame to provide in Postal websites the Track & Trace for all barcoded UPU mail	can be made available to shippers/e-retailers/individual customers can be integrated in shippers' websites	2012
RAIS/SCIS	Registered Articles Inquiry System / Supply Chain Inquiry System Inquiries for barcoded Letter Post products. integrated with IPS can also be used for other Inquiry purposes with other members of the supply chain for other postal products than registered	can be used for small packet eCommerce deliveries. Also for non-barcoded dispatches integration with IPS Accounting, mutual agreement between posts directly updates IPS can be used for new e-commerce postal products can be used to enhance electronic communication with other supply chain partners (e.g. airlines, retailers, etc.)	2013
PIMS	Postal Irregularities Management System: Manages Irregularities (missent, damaged...) and produces eVNs (electronic Verification Notes) integrated with IPS	can be used to clarify all irregularities integration with IPS Accounting, directly updates IPS	2015
IFS	UPU's Money Transfer system for Postal Money Orders international and domestic postal money orders clearing & settlement between DOs reporting / support for AML/CFT checks	can be used for eCommerce payments: pay with Postal Money Order and reference purchase with ID in an IFS field	2000
COMPAS	<i>Variation of IFS specifically for eCommerce payments:</i> <i>shipper/vendor injects invoice in COMPAS</i> <i>Buyer's Post updates status when receives payment from buyer</i> <i>status check possible anytime</i> <i>mail acceptance event ("I") triggers payment to vendor</i> <i>Integration with IPS:</i> <i>check at export if payment is already lodged with destination post</i> <i>trigger payment after event "I"</i>	<i>back-office central web-service</i> <i>Web.API interface to link shippers' IT system to inject invoices</i> <i>can be integrated with UPU Postal Payment Clearing System</i> <i>Combined Track & Trace for delivery & payment status</i> <i>the two posts function as "escrow" providers between vendor and buyer</i> <i>COMPAS as back-office web service is destined for direct usage by parcel divisions</i>	

UPU solution	Description	Role for e-commerce	Available since
GLORYPOSE	<p><i>The GLORYPOSE (Global Repository for Postal eShops) is designed as a tool to interconnect the offers of different national postal eShops:</i></p> <p><i>MSMEs can offer merchandise in the national postal eShop</i></p> <p><i>The descriptions of merchandise (incl. delivery and sales conditions) which is considered to be marketable in other countries may be uploaded to GLORYPOSE</i></p> <p><i>All DOs can browse in GLORYPOSE for merchandise which may be interesting for their home market and download the information of selected merchandise</i></p> <p><i>Both DOs then agree on the conditions of the offer in the other country.</i></p> <p><i>To do that they might use a template agreement being part of GLORYPOSE</i></p> <p><i>After agreement, the merchandise in GLORYPOSE is liberated for offer in country B</i></p>	<p><i>better access for MSMEs to the global market through postal e-shops</i></p> <p><i>unique international variety of goods can be offered by posts</i></p>	

Abbreviations:

PTC	UPU's Postal Technology Centre
ECPRO	UPU's regulation & definition of a new postal product designed for e-commerce
eCIP	postal product definition for e-commerce by the International Post Corporation (IPC)
DO	Designated Postal Operator for a UPU member country
EDI	Electronic Data interchange, here for both EDIFACT and XML format electronic messages
HS	WCO Harmonized System: standard customs code for merchandise
Web.API	Application Programming Interface through the internet
KPI	Key Performance Indicator
MSME	Micro/Small/Medium enterprise
AML/CFT	Anti money laundering / Counter terrorist financing

7.1 UPU IT tools in production

The UPU is developing a comprehensive and integrated e-commerce IT framework. The most important services are already provided:

- International Postal System (IPS): Comprehensive international mail management system, including scanning, route planning, electronic data interchange (EDI) messaging, track and trace, and international accounting.
- Payment:
 - › In addition to remittances, the International Financial System (IFS) software family can be used to perform e-commerce transactions (payments, import/export costs and refunds) using postal money orders on the basis of the UPU Postal Payment Services Agreement. This can be done by including the order/invoice number in the postal money order message. An e-commerce payment can be seen as a remittance from the buyer to the vendor.
 - › E-commerce payments using the IFS software family can be automatically cleared by the postal payment services clearing system (PPS*Clearing).
 - › IFS Mobile brings the payment function to tablet computers and smartphones.
 - › POST * Net Finance New Generation makes it possible for any local payment provider to easily interconnect with the IFS payment framework and allows the Post to offer a range of e-commerce payment options (e.g. account, card, mobile).
- Track and trace: E-commerce customers (shippers/receivers) can track all barcoded postal items:
 - › using the track-and-trace functionality of IPS (including the customized IPS Web Tracking service for postal customers)
 - or
 - › using the UPU's Global Track & Trace system (embedded in the Post's own website).*

– Export and import handling:

- › The UPU Customs Declaration System (CDS) manages the electronic customs and security process. It captures customs declarations; generates/processes the EDI messages (ITMATT between Posts, CUSITM/CUSRSP between Posts and Customs); routes the EDI messages to the destinations; performs selectivity, risk management and tax/duty calculations (customs functionality); and processes the response from Customs to Posts. Additionally, it can route security-related messages from destination Customs to origin Posts.
- › The Postal Export Guide (PEG) details import/export prohibitions and restrictions. It can be used through a website, web API or import/export interface. It is embedded in CDS. Shipments containing a Harmonized System (HS) customs code on the declaration are checked at export for import restrictions or prohibitions and are flagged if a prohibition/restriction applies. This prevents unnecessary shipping of items that will be rejected in the destination country.
- Merchandise return: IPS currently supports the processing of returned goods using the original or a new barcode. For specific merchandise return functionality, see section 7.2.
- Refund for returned goods: Refunds can be processed via the IFS software family (see also section 7.2).
- Inquiries: The inquiry workflow is supported using the following systems:
 - › Registered Articles Inquiry System for letter items;
 - › Financial Electronic Inquiry System for postal money orders (IFS transactions).
- Electronic verification (eVN) notes: The UPU eVN system manages the exchange of information regarding mail irregularities until resolution.
- Information about postal operators' operational environments: Various compendiums and online tools are available for postal operators to review other operators' delivery capabilities and conditions:
 - › GMS STAR (Global Monitoring System Statistical System for Analysis and Reports – quality measurement and reporting for letter mail)
 - › EMS Operational Guide
 - › Parcel Post Compendium Online
 - › Letter Post Compendium Online
 - › General List of Airmail Services (CN 68)
 - › Electronic Postal Payment Services Compendium
 - › Postal Export Guide (Customs Matters Guide)
 - › Standards Code List Management System
 - › Global Track & Trace
 - › QCS Mail

* www.globaltracktrace.post

- Electronic data exchange:
 - > Between Posts/Customs/airlines: POST*Net is the UPU EDI network that carries all UPU standard EDI messages between the participants of the postal supply chain (high performance and 100% availability since 2007). It has many added-value services, e.g. automatic monitoring and alerting for anomalies in EDI transmissions, a network operating centre also looking at EDI irregularities, and the POST*Net Dashboard providing real-time operational information based on EDI exchanges.
 - > Between postal customers (e.g. retailers) and Posts:
 - Standard interfaces of CDS (web service, XML import/export) allow the direct injection of customs declarations into CDS from any third party IT system. The same works with queries for prohibitions and restrictions in the Postal Export Guide.
 - Standard interfaces of Global Track & Trace allow the direct query of barcode IDs from any third party IT system.

7.2 Future enhancements for UPU IT tools

To complete the UPU integrated e-commerce IT framework, the following enhancements are planned:

- E-commerce pricing: CDS and the PEG will be used to provide retailers with the landed cost for merchandise shipped abroad by the Post.
- Merchandise return, including adjustment of import/export declarations: IPS will be extended to manage merchandise returns, including the exchange of EDI messages and accounting. CDS will be enhanced to provide an automatic update of the customs declaration based on the difference between the original customs declaration and the merchandise returned. In addition, forms for the refund of import taxes/duties will be provided, as well as free re-entry forms for shippers for the free re-import of returned merchandise.
- Payment/refund:
 - > IFS and IFS Mobile will be adapted to provide with COMPAS (an e-commerce payment system) a payment system as a web service (web API, XML) to:
 - pay for e-commerce merchandise (buyer) or provide a refund for returned merchandise (vendor);
 - pay customs duties/taxes.
 - > The postal payment clearing system (PPS*Clearing) will be adapted to provide clearing services for all kind of payments between participants of the postal supply chain (Posts, Customs, airlines, shippers).
- Track and trace: For postal e-commerce payments, track-and-trace functions will combine both shipment and payment status.
- Address validation: Addresses of sender/shipper and receiver/buyer in IPS, CDS and IFS will be automatically checked against the UPU POST*CODE database, and a warning will be issued if an address is not found or is ambiguous.
- Common repository for merchandise in Posts' e-shops: The Global Repository for Postal E-Shops (GLORYPOSE) will allow Posts to make their merchandise available to be sold internationally in the e-shops of other Posts. Posts will be able to browse the repository to select merchandise they wish to offer from other postal operators.
- Identification: A PostID infrastructure is being built to interconnect postal electronic IDs of postal customers so that they can be recognized worldwide as identified postal customers.

7.3 Integration of UPU IT tools for e-commerce

The effectiveness of the e-commerce IT framework depends on the integration of the different IT tools:

- IPS–CDS/PEG (existing): highlighting customs decisions, security alerts and prohibitions/restrictions in IPS at import/export scan of barcode.
- IPS–RAIS–eVN (existing): automatic updating of IPS accounting to reflect the inquiry/irregularity resolution.
- IPS–IFS/COMPAS: linking of parcel/packet ID (barcode) and money order ID when postal payment is used for track and trace.
- IPS/CDS/IFS/COMPAS–POST*CODE: checking addresses for accuracy.
- IPS–Merchandise Return System: checking in IPS whether an item is a merchandise return and creating a specific accounting entry.
- IFS/COMPAS–PPS*Clearing (existing): automatically creating clearing records for each postal payment.

8 UPU physical services

Still being the core of postal competence in the e-commerce market, the physical delivery services offered for the international customers are under very big pressure from both other players in the delivery business as well as businesses expanding from the e-business sector. Answering the need for evolution in this area, the 25th UPU Congress decided to increase the focus on e-commerce through resolutions C 31/2012 (Development of e-commerce), C 32/2012 (Exploiting the postal opportunities offered by the growth of e-commerce through the remodelling and modernization of the UPU lightweight package services (small packets, lightweight parcel and EMS items)), C 33/2012 (Promoting cross-border e-commerce) and C 34/2012 (Unregistered small packets weighing up to 2 kg generated by e-commerce). The basic principles set for the e-commerce delivery services are as follows:

- Simplicity for both the e-tailer and the consumer;
- Value for money, low costs for the e-tailer and the designated operator;
- Speedy implementation;
- Easy to implement using the available networks (letters, parcel and EMS) with limited requirement for additional investment;
- A sustainable solution for all customers and for sending and receiving designated operators.

To meet the market expectations described by the above principles, additionally to improving the existing services described earlier in this Guide, an e-commerce parcel optional delivery service (as set out in the articles RC116bis and RC 195.1.1.) with the following characteristics has been approved by the POC:

- Weight 0-30 kg (but limited to 20kg if required by the local regulations). This addresses the need of a simple service without the "artificial" division 0-2kg 2-20kg as suggested by the 2014 E-Commerce Forum and the PSIG
- Pay for performance to ensure the quality demanded by the e-commerce businesses
- Mandatory S10 barcode identifier (HA-HZ specific indicator range)
- Mandatory Electronic tracking:
 - > EME, EMF for Customs and security
 - > EMA, EMC, EMD, EMH/EMI, PREDES, RESDES for delivery tracking

- Mandatory UPU common Internet based Inquiry System (Customer inquiries shall be handled in accordance with the procedures outlined in articles RC 150.3bis and 3ter.)
- Mandatory:
 - > EMSEVT v. 3
 - > ITMATT
- Delivery standard of EMD+5
- No required proof of delivery signature
- Home delivery is recommended. Alternative customer-friendly delivery options, such as pack stations, parcel boxes and convenience stores, could be used at the customer's request. Specially the pack stations are getting more and more attention since customers require more last mile flexibility.
- No liability between the posts

In regards to reports, accounting and return services, the existing frameworks and regulations will be used as possible:

- Reports shall be the same as for the air (priority) parcel performance reports used for the Inward Land Rate bonus assessment and shall be based on the identification of the e-commerce parcels using the item service indicator (HA-HZ) approved by the POC.
- The accounting procedures will be adapted to the 2 logistics scenarios. If the dispatches will consist only of the e-commerce parcels, a CP 94 statement will be used. If the dispatches will be mixed, the accounting mechanism must be agreed bilaterally.

In regards to the returns, the article 3.2 of the Merchandise Return Service (MRS) User Guide contains the specifications for labels and the requirement to use a parcel identifier compliant with S10.

E-commerce parcel category items returned via the MRS should be identified by prefix CR for air parcels, HR for e-commerce parcel category and ER for EMS.

E-commerce parcel delivery is an optional service which posts may offer on a voluntary basis. If a postal operator elects to offer the e-commerce delivery category, that operator will be expected to provide both inbound and outbound services.

Each post that elects to participate in the e-commerce delivery category will need to provide the UPU with all the mandatory scanning data it collects for these services in a timely manner, as specified in article RC 168 and in the e-commerce parcel specifications approved by the POC (POC 2014.2–Doc 5c).

All the mentioned above requirements, set out as mandatory refer to market requirements expected by the customers and are needed to stand against the competition, which in this case has the advantage of having uniform solution rollouts.

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