

E-shopping through Posts

A key opportunity for the postal sector in the Information Society

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Table of contents

Executive summary

Congress resolution	5
POC outcome statements.....	5
The role of the UPU in the information society	5
2 Market development	5
Internet access and ICT usage	5
E-commerce development	9
Consumer concerns towards cross-border electronic commerce.....	10
Postal capacity to support E-commerce operations	11
3 Market analysis.....	11
E-commerce market environment.....	11
A key opportunity for the postal sector.....	12
Strengths and weaknesses	13
Opportunities and threats	14
Key success factors.....	14
4 E-shopping through Posts strategy.....	15
Focus on the core business of Posts – Parcels – Mail – financial services	15
Meet the E-commerce needs from both the buyers and the sellers standpoint.....	15
Enable delivery and payment services on the Internet	16
Get E-marketplace integration.....	16
Establish a global postal Internet environment	16
E-shopping through Posts' business model	17
The Trustmark opportunity.....	21
Concerns towards E-security	21
5 Recommendations.....	26
The role of the UPU.....	26

Executive summary

Based on Congress resolution C 15/2004 – Development of electronic shopping through postal administrations, the E-Products and Services Group agreed to set up an Electronic Shopping Project Team.

This report is a result of work done by the EPS E-shopping Project Team during 2005–2006 and presents a general strategy for an E-shopping solution through posts, as well as recommendations for future consideration.

The number of Internet users is an important indicator in implementing E-commerce services, because it is the first step in building a consumer market, mainly in business-to-consumer E-commerce.

The number of Internet users grows constantly year by year all over the world. Even in the regions with low Internet penetration the latest figures show a very high growth rate which is a good sign, though the numbers are still far behind the developed regions.

On the other hand, development of small- and medium-sized enterprises (SMEs) is crucial in any economic area, given their importance and presence. SMEs always comprise the bulk of enterprises.

A development constraint for SMEs is the fact that they do not have established brand names, and online customers prefer to trust well-known brands rather than buying from unknown companies over the Internet.

Based on the world information and communications technology (ICT) and E-commerce statistics, we can expect the growth of the Internet access and E-commerce sales worldwide in the future. However this growth varies from country to country. In countries where Internet penetration is low, the amount of online purchases – being domestic or cross-border – is also low.

However, there are some consumer concerns towards E-shopping confidence and security, especially in cross-border E-commerce. Despite these concerns, more and more people are interested in buying products through the Internet.

In this regard, Posts are in a favourable position due to the unmatched geographical coverage and brand name as well as logistics competencies around the world.

In fact the growth in postal parcel traffic is being heavily influenced by growth in E-commerce trade, which created opportunities for Posts in the following areas:

- delivery and logistics, including return of goods;
- payments, including E-payments, money orders and micro payments;
- E-shopping and E-marketplace.

In order to assure success in this field, however, it is necessary to develop the following key factors:

- vision/management engagement;
- alliances;
- human resource strategy;
- strategic use of ICT;
- quality assurance.

Posts are in an advantaged position to play the role of trusted third-party in the E-commerce field by:

- focusing on the postal delivery core business;
- meeting the E-commerce needs from both the user (*buyers*) and postal clientele (*sellers*) standpoint;
- enabling delivery and payment services on the Internet;
- getting E-marketplace integration;
- establishing a Global Postal Internet Environment.

The establishment of such a suite of global postal Internet services should be done, step by step, starting from a definition of the basic elements and the development of the building blocks for a thorough global postal E-commerce market place.

In this regard, the role for the UPU is crucial and should include the following recommendations:

- ensure parcels and express mail services quality of service all over the world;
- assess E-commerce market needs from both the buyers and sellers standpoint;
- ensure legal and technical interoperability for E-commerce delivery-related services;
- develop and promote a global postal trustmark for E-commerce in coordination with other global postal E-service branding initiatives;
- sponsor the development of a global marketplace for E-commerce delivery and payment-related services in connection with the designated postal operators.

1 Introduction

Congress resolution

In recognition of the important role electronic services will play in the future of postal services and following the adoption of the electronic services proposals by the Bucharest Congress and the Bucharest World Postal Strategy, a POC E-Products and Services Group was created in order to ensure these approved strategies and objectives are obtained.

Based on Congress resolution C 15/2004 – Development of electronic shopping through postal administrations, the E-Products and Services Group agreed to set up an Electronic Shopping Project Team.

The EPS E-shopping Project Team's terms of reference cover studying the potential of E-commerce for postal administrations, developing strategies and a plan of action in relation to an electronic postal shopping service, and developing and implementing policy, rules and regulations.

POC outcome statements

According to POC outcome statements, the EPSG has to submit a report to the Nairobi Congress in 2008 on resolution C 15 regarding the development of E-shopping through postal administrations.

In order to accomplish these objectives, the Project Team agreed to carry out a project plan including desktop market study; postal research; case studies, best practices and benchmark analysis; development of an appropriate strategy and recommendations.

This report summarizes the results of the work done by the EPS E-shopping Project Team during the 2005–2006 period and presents both a general strategy for an E-shopping solution through posts, as well as recommendations.

The role of the UPU in the information society

The World Summit on the Information Society (WSIS) aims to bridge the so-called "digital divide" separating rich countries from poor countries by spreading access and more importantly use of the Internet in the developing world and remote locations.

Considering its favourable position due to the unmatched geographical coverage, trusted brand name and logistics competencies around the world the postal sector was acknowledged by the summit to be an important infrastructure for the information economy

This was recognized in the UN Summit on the Information Society where the UPU was announced as one of the facilitators of the E-Business action line – in cooperation with UNCTAD, ITU and ILO.

2 Market development

Internet access and ICT usage

The Internet access capability of each country is a priority issue which must drive E-commerce planning. Virtual stores need consumers on the Internet as a driver for successful E-shopping.

The number of Internet users is an important indicator in implementing E-commerce services, because it is the first step in building a consumer market, mainly in business-to-consumer E-commerce.

Table 1 – World Internet Usage and Population Statistics, 2000–2006

Source: Miniwatts Marketing Group – www.Internetworldstats.com

<i>World Regions</i>	<i>Population (2006 est.)</i>	<i>Population % of the World</i>	<i>Internet usage latest data</i>	<i>Penetration % of the population</i>	<i>Usage % of the World</i>	<i>Usage growth 2000–2006</i>
Africa	915,210,928	14.1%	32,765,700	3.6%	3.0%	625.8%
Asia	3,667,774,066	56.4%	378,593,457	10.3%	35.2%	231.2%
Europe	807,289,020	12.4%	311,406,751	38.6%	28.9%	196.3%
Middle East	190,084,161	2.9%	19,028,400	10.0%	1.8%	479.3%
North America	331,473,276	5.1%	231,001,921	69.7%	21.5%	113.7%
Latin America/Caribbean	553,908,632	8.5%	85,042,986	15.4%	7.9%	370.7%
Oceania/Australia	33,956,977	0.5%	18,364,772	54.1%	1.7%	141.0%
World total	6,499,697,060	100.0%	1,076,203,987	16.6%	100.0%	198.1%

Notes: Internet Usage and World Population Statistics were updated for 27 November 2006. Demographic (Population) numbers are based on data contained in the world-gazetteer website. Internet usage information comes from data published by Nielsen/Net Ratings and by the International Telecommunications Union.

Latest reports show that most Internet users live in Asia, followed by Europe, North America, Latin America/Caribbean, Africa, the Middle East, and Oceania. The summary also shows the penetration of the Internet. The highest Internet penetration rate was found in North America, followed by Oceania, Europe, Latin America/Caribbean, Asia, Middle East and Africa.

The number of Internet users grows constantly year by year – the ratio is presented in the table above. The regions with low penetration show very high growth rates (by percent) which is a good sign, though the numbers are still far behind the developed regions.

These indicators reveal a need for special attention to increasing Internet access and usage in developing countries as a first step towards offering business-to-consumer (B2C) E-commerce services.

Regulatory environment

The next important issue in a country's ICT readiness is the regulatory environment. Without regulations that foster the development and introduction of new E-commerce services, the market will develop much slower. The importance of this factor is reflected in the *World Economic Forum Report* on ICT readiness, where countries with quite good availability of technical infrastructure went down in the rankings due to poor legislation.

The area mostly affected is related to e-security services such as the digital signature. This also affects all the customers, both business and individual.

SME connectivity

Gathering information about small- and medium-sized enterprises (SMEs) is crucial in any economic area, given their importance and number, especially in developing countries. SMEs normally employ the majority of the workers in the country, and they always comprise the bulk of enterprises.

Below, are summarized a number of conclusions extracted from the *UNCTAD E-commerce and Development Report 2004*, focusing on the participation of SMEs in E-commerce:

How are the SMEs connected in developed countries?

- In 2003, on average, 87% of enterprises in the European Union had an Internet connection.
- Internet access usually increases with the size of companies, but in some countries even 85% of micro-enterprises (with five to nine employees) use the Internet.
- Countries with lower access costs have higher Internet take-up.

How are SMEs connected in developing countries?

- The high cost of connection is an important constraint.
- In general, there is poor telecommunications infrastructure.
- The main barriers to ICT usage are the costs related to ICTs, insufficient knowledge amongst employees, the short life cycle of software, the fact that ICTs do not satisfy the needs of the enterprise, the lack of readiness on the part of clients or suppliers to use ICTs, and the difficulties in finding and recruiting qualified employees.

Again, developing countries need to expand their communications networks and make them cheaper for companies and private users. Hopefully the wireless technologies give hope for quicker network development, as new transfer protocols in this area provide more and more bandwidth and the technology is more available.

How companies make use of the Internet

Once companies are connected to the Internet, how do they make use of the possibilities it opens up? Here we focus on E-commerce usage. The following conclusions were extracted from the *UNCTAD E-commerce and Development Report 2004*. Again, the conclusions for developed and developing countries are shown separately.

Facts about Internet usage in developed countries:

- Internet sales are mainly domestic or at the regional level.
- E-commerce is more prevalent in services than in manufacturing, and it features particularly in financial services, business services and wholesale trading.
- B2C E-commerce still accounts for only a small share of E-commerce, but is growing.
- The perceived major barriers are not related to Internet access and use, but rather to the lack of network security and legal uncertainties concerning payments, contracts and delivery.
- SMEs have the greatest potential for productivity gains through E-business.

Facts about Internet usage in developing countries:

- E-payments are rare, and even for sales generated online most payments are made by bank transfer.
- In some countries, domestic E-commerce is almost non-existent.
- The level of online purchases is much higher than that of sales.
- Small companies use more E-marketplaces, whereas medium-sized companies use company websites (of third parties or their own) for selling online.
- Small companies are ready to invest more in ICTs over the next few years. This shows the dynamics and rapid development of e-business adoption.

- A constraint for SMEs is the fact that they do not have established brand names; online customers prefer to trust well-known brands rather than buying from unknown companies over the Internet.

On the basis of this evidence, we can identify opportunities for Posts to play a role in the E-commerce market, by offering delivery and payment services and hosting E-shopping portals, at both domestic and international levels, in developed and developing countries.

However, any project aimed at implementing E-commerce services must take account of the lack of capacity for dealing with technology issues in developing countries. Such projects require additional tasks related to training, know-how transfer, and improving SMEs' capabilities in the use of E-commerce tools and in dealing with the E-business environment.

E-commerce development

E-commerce defined as placing and receiving orders over the Internet and other networks, continues to grow in most countries, although exact data on the value of global E-commerce sales and purchases are not available on a time-series basis.

In the United States, the largest global E-commerce market, E-commerce sales continued to grow during the last six years.

According to the latest US Census Bureau Quarterly Retail E-commerce Sales Report – 4th quarter 2006, online sales in the US retail market (B2C) reached 108,324 million USD in 2006, accounting for 2.7% of total retail sales. With a growth rate significantly higher than for total retail trade, the share of E-commerce in total retail trade is also growing. The latest available figures indicate that its share has more than doubled since 2000.

Table 2 – E-commerce sales in the United States, 2000–2006 (million USD)

Source: US Bureau of Census

Year	Retail sales		% of E-commerce	% change from prior year	
	Total	E-commerce		Total	E-commerce
2006	3,944,638	108,324	2.7%	4.5%	26.0%
2005	3,775,349	85,993	2.3%	9.6%	27.3%
2004	3,444,438	67,569	2.0%	5.5%	19.3%
2003	3,265,477	56,644	1.7%	4.2%	25.9%
2002	3,134,322	45,001	1.4%	2.2%	30.4%
2001	3,067,725	34,517	1.1%	2.6%	24.3%
2000	2,988,756	27,765	0.9%		

Despite the lack of official data about the value of worldwide E-commerce sales, we could realize that this phenomenon appears in a variety of countries, in developed and developing economies.

Based on the ICT indicators available from the International Telecommunications Union (ITU) statistics and the United Nations Conference on Trade and Development (UNCTAD) Information Economy Report we can expect growth in Internet access and E-commerce sales worldwide in the future. However this growth varies from country to country.

Understandably, in countries where Internet penetration is low, the amount of online purchases – being domestic or cross-border – is also low.

According to the markets statistics in almost all developed countries the proportion of domestic purchases through E-commerce is higher than in international E-commerce.

However, international E-commerce is being developed rapidly in certain regions and it is a great opportunity to address the main barriers for cross-border purchases through E-commerce.

Consumer concerns towards cross-border electronic commerce

According to the latest European statistics about consumer attitudes toward cross-border shopping – *Special Eurobarometer – Consumer protection in the Internal Market – EU September 2006* – the most widely used form of purchasing at a distance is via the Internet.

More than a quarter (27%) of the EU population uses the Internet to buy goods and services. The Internet seems therefore to be well established as a retail medium.

Given its borderless nature, it might be expected that the Internet means that consumers no longer distinguish between domestic and foreign websites. This is not the case as the incidence of Internet shopping on a cross-border basis is lower than domestically.

Looking at European Union country results about the proportion of domestic and cross-border purchases¹, it can be observed that in almost all European Union countries the proportion of domestic purchases is clearly higher. This is the case in the UK (domestic purchases 65%, cross-border purchases 11%), Denmark (58% and 24%), the Netherlands (52% and 17%), Sweden (55% and 17%), and in France (52% and 15%).

In average among those European consumers who have an Internet connection at home, domestic and cross-border online purchases reach 23% and 6% respectively.

The study outlined consumer confidence and attitudes towards cross-border shopping. Here we show the underlying reasons influencing consumer confidence and attitudes towards cross-border shopping:

- Fourteen percent of European distance shoppers have tried to return products or cancel a contract within the "cooling-off period"² after purchasing on the Internet, as well as by phone or by post.
- Forty-five percent of Europeans tend to be less confident when purchasing online from providers located in an EU country other than their own.
- Two-thirds of Europeans think there are more potential problems when making cross-border purchases rather than domestic purchases.
- Over two-thirds of Europeans (71%) think it is harder to resolve problems such as complaints, returns, price reductions, guarantees, when purchasing from providers located in other EU countries compared to the ones based in their home country.
- Sixty-eight percent of EU citizens consider there is a greater risk of falling victim to scams and fraud when purchasing from suppliers located in another EU country than from providers in their home country.
- Two-thirds of Europeans (66%) think there is a greater chance of delivery delays when they order goods or services from providers located in other EU countries.

Despite these concerns about cross-border shopping more and more people are interested in buying products through the Internet.

¹ Among those respondents who have an Internet connection at home.

² The technical term "cooling-off period" indicates the legal right to return a product for a purchase made on the Internet, within a defined time period without paying a penalty.

According to the same study, 32% of the EU population polled are interested in making a cross-border transaction in the next 12 months. This is six percentage points higher than the amount of EU citizens who have made at least one cross-border purchase in the past year (26%). If this potential is exploited, the number of cross-border purchases would increase in the next year.

The consumers will be influenced more as they receive cross-border advertisements or offers, they have an Internet connection at home and they have good experiences in buying through E-commerce.

In this regard, Posts are in a good position due to the unmatched geographical coverage and brand name as well as logistics competencies around the world.

Postal capacity to support E-commerce operations

Examining the postal environment in relation to E-commerce will help us to identify opportunities.

According to the UPU document – *Development of Postal Services in 2005, a few key figures* – 54% of postal administrations around the world offer online Internet services. These are provided in 49% of developing countries and 82% of industrialized countries. The principal online services offered are track and trace, information on tariffs, postcode lookup, e-mail services, and sale of philatelic products.

The UPU document indicates that 22% of the UPU member postal administrations offer services involving the selling of products via the Internet.

According to the UPU document – *the Postal Market 2004 Review and Outlook report* – the growth in postal parcel traffic would be heavily influenced by growth in domestic and international trade, and in particular by the development of E-commerce. Most postal administrations predicted an increase in postal parcel traffic for the 2004–2008 period.

In fact the latest figures of the UPU about the development of postal services in 2005 show this growth.

Table 3 – Ordinary parcels – Average annual variation – 2005

Source: UPU Development Postal Services, 2005

<i>Ordinary parcels</i>	<i>1980–1990</i>	<i>1990–2000</i>	<i>2000–2005</i>	<i>2004–2005</i>
Domestic service	4.3%	4.1%	4.4%	10.9%
International service	-0.2	-4.0	4.2%	3.4%

Many Posts have already profited from the development of E-commerce and are experiencing growth in postal parcel traffic. But this growth is mainly domestic rather than international as shown in the table above.

3 Market analysis

E-commerce market environment

Considering E-commerce as advertisement, sale and payment of products and services through an electronic network, to be delivered physically or virtually, from the seller to the buyer, the main key elements of the E-commerce value-added chain were established as follows:

hosting → advertising → e-payment → delivery → customer relationship

In these areas the major global players were identified such as: Yahoo, Amazon, eBay, Google, Pay Pal, VISA, FEDEX, DHL, UPS and TNT. The best practices were also identified on the E-commerce market.

For instance, in the delivery area the major global players already offer Internet integrated services, such as: shipping calculator; shipping label; online tracking; pick-up schedule; delivery signature; prepaid shipment; fulfilment, warehouse and online accounting.

Looking at those E-commerce operators it was realized that they are offering E-commerce solutions in more than one element of the E-commerce value-added chain.³ For instance, FEDEX has a virtual store of its retail shop Kinko's for selling office supplies; furniture; technology and facility supplies.

Google started from its ad words business, to offer payment solution through Google checkout and Amazon is offering web stores aimed at small and medium enterprises and fulfilment for companies who send their new and used products to Amazon, to be stored, picked, packed and shipped to buyers from Amazon's network of fulfilment centres as orders are placed.

A key opportunity for the postal sector

E-commerce has a real revenue benefit on the core activities of the Post – Parcels, Letter and Financial Services. Many Posts are taking proactive steps to link these services to the leading E-shopping merchants to bring real revenue to these lines of business.⁴

In markets where small and medium enterprises need assistance, the Posts are developing their own E-shopping capabilities to meet customer needs in getting their products to the Internet so they can be sold online.

With these two approaches the postal sector are a powerful supporter of E-commerce. The exciting news is that one E-commerce transaction can lead to up to three postal transactions – postal payment transaction, parcels delivery and a related direct mail.

Therefore there are opportunities for Posts along the E-commerce value-added chain in the following areas:

- a Delivery and logistics, including return of goods;
- b Payments, including E-payments, money orders and micro payments;
- c Direct mail and Direct marketing related services;
- d E-shopping and E-marketplace hosting.

³ A benchmarking analyses is available on the UPU website – E-commerce section – www.upu.int/e-commerce/en/index.shtml

⁴ A collection of case studies is available on the UPU website – E-commerce section – www.upu.int/e-commerce/en/index.shtml

Table 4 – Postal opportunities in E-commerce

<i>Delivery</i>	<i>Payment</i>	<i>Hosting</i>	<i>Direct marketing</i>
Order fulfillment and tracking	E-payments	E-shops	Customer acquisition
Logistics	Money orders	E-marketplaces	Address management
Supply chain management	Micro-payments	E-advertisements	Direct mail
Reverse logistics	Prepaid cards		Receiver preference services
Home and/or post office delivery	Cash payment at the post office		Call centres

The demands of Internet customers will however mean that quality and transparency of these postal services will be key elements to customer satisfaction and continued growth.

Looking at postal industry and the outside environment in regards to E-commerce we could do a SWOT⁵ analysis as follows.

Strengths and weaknesses

By observing postal market and case studies we have identified the strong and weak points of postal services in the E-commerce field.

Strengths

- unique physical network coverage;
- ability to serve the customer in the three main dimensions (electronic, physical and financial);
- possibility of introducing international standards (S43 for example);
- competency in domestic interconnection;
- reliability, quality of service;
- trusted brand;
- possible influence on regulations;
- strong partner for alliances and cooperation.

Weaknesses

- less flexible than small private enterprises;
- slower technology introduction;
- may require big technology investments in order to keep up with the market;
- weak online brand awareness;
- some managements still treat the Internet only as a threat and not as a possibility of expanding the business – this might lead to slower E-services development;
- as national companies, the postal operators might be bound by regulations that make competing with private enterprises difficult in new markets.

⁵ SWOT Analysis – Strengths, Weaknesses, Opportunities and Threats.

Opportunities and threats

We have analyzed the current market and identified practices adopted by competitors and companies offering E-commerce related services.

Since competition in an industry is not only limited to defined participants, we have also analyzed the E-commerce market in order to identify existing threats and opportunities in this market.

Opportunities

- big E-commerce players look for supply chain completion – posts as strong partners;
- technology companies look for alliances to strengthen trust;
- the market is still young and has room for new players;
- the market needs strong and trusted brands;
- lack of market players capable of supporting the full E-commerce value chain;
- growing online sales;
- develop *trustmark*;
- new source of revenue and cost reduction.

Threats

- rapid technology changes;
- lots of new players entering the market;
- growing costs of back office technology;
- regulations in favor of the competition;
- competitors' reprisal.

Key success factors

Once opportunities have been identified, as well as occasional threats to those markets, the next step was to identify key success factors for competition in E-commerce.

These are those areas in which it is necessary that everything comes out right in order to assure the product or company's success. What is needed to be, or to have, in order to compete efficiently in the market?

Without these factors, it is not possible to operate successfully in the business. They are usually few, since it would be difficult to compete in sectors in which KSFs were numerous.

Main key success factors:

- Vision/management engagement – in regard to one of the weaknesses defined in the SWOT matrix, the management must understand and fully support the engagement of the company in the E-commerce market.
- Alliances – very important factor, especially for operators on entry level but on a more mature market. This includes both – alliances with other operators as well as with private enterprises. As defined in the SWOT matrix, postal operators because of their unique market position (brand, logistics capabilities, stability) are THE sought after partners in the E-commerce field.
- HR strategy – competing successfully in a fast changing market such as the E-commerce market requires people with current knowledge – this might be an issue for some operators, especially in the developing countries.

- Strategic use of ICT – this one is obvious, E-commerce services depend on technology very heavily. Deployment of IT systems in companies like Posts takes a lot of time and resources. Due to the threat of fast technology change identified in the SWOT matrix, the strategy must establish the right path of system deployment both in the right timing and the right technology solutions.
- Quality assurance – one of the strengths of postal designated operators is the brand. The operator must not allow this asset to be devaluated – the quality of services is one of the keys to E-commerce success.

Based on these analyses, we can develop an appropriate strategy for global postal E-commerce related services in coordination with the general UPU E-services strategy.

4 E-shopping through Posts strategy

Considering the various possible approaches for an electronic postal shopping service and the domestic and regional electronic commerce level of maturity around the world, we present the following general strategy:

Focus on the core business of Posts – Parcels – Mail – financial services

The posts have been a traditional means of connecting people and organizations in the physical environment for hundreds of years and are therefore perceived as natural players in the electronic commerce field.

The posts have to provide parcels delivery, direct mail and postal financial services with quality, regularity and affordability. These three basic elements along with its geographical coverage already place the Post in a good position in the E-commerce market.

Therefore the Posts should provide, as a basic E-shopping strategy, parcels delivery services with tracking and tracing systems (IPS), postal financial services with international financial systems (IFS) and direct mail services, at both domestic and international level, according to the UPU regulations and under the UPU quality of service standards.

Meet the E-commerce needs from both the buyers and the sellers standpoint

E-commerce is a new phenomenon for carrying out the traditional basic necessity of buying products and services. It implies new attitudes of both buyers and sellers, but basically involves convenience and safety. These elements therefore must be considered in the whole trade process, from the searching act to the delivery instant and post selling. There is no sense, for instance, trying to deliver a purchase during the working-day time period to the home address of a single buyer. The convenience of buying through the Internet will be overturned by the necessity of picking up the product from a post office. And also the effort of E-retailers to transmit security in their process will be diminished if packages can not be tracked online.

E-commerce postal delivery services therefore must be provided with some differentials with regard to traditional parcel services, such as online tracking and tracing, extended time delivery, Saturday delivery, cash on delivery, automatic insurance, three delivery attempts and E-commerce tailored pricing.

In logistics Posts could provide customized handling, packing and shipping services.

Direct mail related services should include the provision of data and addresses, data management and mining and mail production and management.

Enable delivery and payment services on the Internet

In order to ensure convenience for both the seller and the buyer, delivery related processes must be enabled online, by providing automatic freight calculation, payment of online postage and additional services, online printing of shipment labels, online carrier pickup service request, tracking and tracing and shipment information on the Internet.

Postal financial services should include E-money order and pre-paid card.

Direct mail related services should include multimedia delivery and response management.

Get E-marketplace integration

Offering high quality adequately enabled services is not enough to win the game in the electronic commerce field. Services must be ubiquitous, visible and available where costumers are.

In order to enter in the game it is necessary to integrate E-commerce related services into the main E-shopping marketplaces.

Such integration must be fast to setup into the E-retailers environments and easy to use during the purchasing experience. The more E-shops or E-marketplaces integrate with postal delivery related services, and the closer online shipment tools are to the purchase moment, the better the results will be.

Payments alternatives, such as pre-paid cards and post bank account, could be developed and integrated into the e-marketplaces.

Establish a global postal Internet environment

As pointed out in the *UPU E-services Strategy document*, the postal industry currently has a historic opportunity to create a uniquely postal Internet environment which addresses some highly fundamental needs of the digital economy such as trust, security, authentication and integrated multimedia address management.

In the logistics and E-commerce markets, the Post can use this digital environment to web-enable physical distribution services, provide outsourced shipping management solutions and potentially provide outsourced back-end E-shopping systems.

Here we show some elements that can be created modularly in the post's digital environment:

- online international shipment information;
- online delivery services freight calculation;
- online printing of shipment labels and customs forms;
- online postage and additional services payment;
- online request carrier pickup service;
- track and trace of international parcels and express mail services;
- prepaid virtual card payment system for purchasing goods and services over the Internet;
- reverse logistics order for returning customers' parcels to the requesting client through an authorized postage at any specified post office, such as a virtual international reply coupon for parcels;
- receiver preferences services for parcels and direct mail delivery;
- E-money orders and pre-paid cards;
- hosting virtual shops and carrying out safe commercial transactions through the Internet.

In building these new intermediary services and infrastructures, there are a number of fundamental rules for developing technology-based services that should be considered:

- Building the range – one of the strengths identified is the brand of the operator. Unfortunately in many cases the brand is not always connected with new technologies and E-commerce.
- Gaining the customers – though an E-commerce tailored pricing policy and individual profiled offer.
- Order fulfillment/competence in logistics – identified as one of the strengths of postal designated operators.
- Keeping the customer – one2one marketing in order to build a community.

E-shopping through Posts' business model

Posts can explore the E-commerce opportunity providing parcels, payment, hosting and direct mail services and link these services to the E-shopping merchants to bring revenue to these lines of business or develop their own E-shopping capabilities to get merchants' products to the Internet using postal services.

Figure 1 – E-shopping business model



These services could be provided as an integrated or modular platform in either a cost per transactions base or subscription fee.

Normally this cost should be paid by merchants and optionally, the E-commerce platform could be financed by merchants through a monthly fee, however the best practice in E-commerce is the cost per transaction price model.

Considering the best practices in advertising and promoting online partnership should be done with the leading comparison shopping price sites and online search engines as well as the major E-commerce operators.

In order to get security and customers confidence partnerships with the leading payment platform are recommended.

By using partnerships to provide IT infrastructure, Posts can focus on the development of core services, while partners drive the development of technology and manage the risk.

In integrating these services into the E-commerce players' platform and IT providers the development must be compliant with international standards in order to assure interoperability.

The basic prerequisites for providing the postal E-shopping services are listed in Table 5.

It serves as a basic reference in order to set E-commerce platform up and it allows identification of the necessary standards required to integrate the main elements thereof.

Table 5 – Requisites for the E-shopping trough posts platform

<i>Solution elements</i>	<i>Delivery</i>	<i>E-Payment</i>	<i>Hosting</i>	<i>Direct marketing</i>
Minimum required products	<ul style="list-style-type: none"> - Express and parcel delivery 	<ul style="list-style-type: none"> - Cash payment at post offices 	<ul style="list-style-type: none"> - E-shops - E-marketplaces 	<ul style="list-style-type: none"> - Direct mail
Additional products	<ul style="list-style-type: none"> - Order fulfillment - Home parcel pickup - Logistics and reverse logistics - Supply chain management - Cash-on-delivery - Automatic insurance 	<ul style="list-style-type: none"> - E-payment - Money orders - Micro-payments - Prepaid cards 	<ul style="list-style-type: none"> - E-advertisement 	<ul style="list-style-type: none"> - Customer acquisition - Address management - Call centres - Multimedia delivery - Receiver preference services
Basic features	<ul style="list-style-type: none"> - Online track and trace - Online freight price and delivery-time calculation - Online printing of shipment labels and customs forms - Online request carrier pickup service 	<ul style="list-style-type: none"> - Get cash payment at post offices - Get online payment at websites - Auditing tracks 	<ul style="list-style-type: none"> - E-stores hosting - Online tools for E-stores setting and maintenance - Delivery, payment and direct marketing services integration - E-marketplace management 	<ul style="list-style-type: none"> - Online clients database management - Mailing consulting - Mail production - Catalogue distribution, based on products from online stores
Local attributes	<ul style="list-style-type: none"> - Delivery time according to E-commerce clients expectation 	<ul style="list-style-type: none"> - Compliance with country financial rules and legal issues 	Integration with the main country E-marketplaces	<ul style="list-style-type: none"> - Postal code implemented
Global attributes	<ul style="list-style-type: none"> - International Postal System (IPS) integration 	<ul style="list-style-type: none"> - International Financial System (IFS) integration 	Multi-language Multi-currency	<ul style="list-style-type: none"> - Quality of service measurement - Response management
Standards required	<ul style="list-style-type: none"> - XML as protocol platform for the Post and merchants website integration 	<ul style="list-style-type: none"> - Protocols adopted on integrations with banks and credit card payment gateways 	<ul style="list-style-type: none"> - XML as protocol platform for the Post website 	<ul style="list-style-type: none"> - None
IT requisites	<ul style="list-style-type: none"> - Internet connection - Web servers - Database 	<ul style="list-style-type: none"> - Internet connection - Web servers - Database 	<ul style="list-style-type: none"> - Internet connection - Web servers - Database 	<ul style="list-style-type: none"> - Data mining system on website users' databases

The Trustmark opportunity

Consumers are managing their commerce more and more through web-based facilities. The main E-commerce development drivers are growing rapidly around the world – more Internet access; more business readiness and more consumer awareness.

Nevertheless, there are still many customer concerns regarding shopping on the Internet, especially in cross-border E-commerce.

In the E-commerce environment, the key issues are trust and security. Especially for small- and medium-sized companies a big constraint is the fact that they do not have established brand names and online customers prefer to trust well-known brands rather than buying from unknown companies over the Internet.

On the other hand consumers are very concerned about confidence and security when buying over the Internet, especially in cross-border purchasing.

Therefore *trustmarks* will grow in market value. They will be third-party verifications of business reliability, credibility and a basis for secure business on the Internet. Posts have a great position to play in this role of trusted third-party in the E-commerce field.

Concerns towards E-security

Security issues play a key role in the development of the E-commerce market touching each and every aspect of the business. The posts though stand in a very good position to provide the counter measures and trust to the online community.

To be a real alternative to the traditional way of shopping the electronic market must provide security in its environment. The security threats can be identified in the following areas:

- Internet infrastructure;
- Sales platform;
- Negotiation;
- Payment;
- Fulfillment;
- Foreign government;
- System availability risks.

Internet infrastructure

The development of E-commerce faces significant consumer security risks by the very nature of the Internet infrastructure. In order to engage in E-commerce, consumers must have reliable and secure access to the Internet. The most common way consumers interact with the Internet is through home computing using an Internet browser. In Symantec Corporation's semi-annual Internet Security Threat Report for January 2006 to June 2006, they reveal the extent of browser attacks made against Internet Explorer, Firefox, Opera, Safari and Konqueror. According to the report, "the home user sector was the most targeted sector, accounting for 86% of all targeted attacks. The financial services sector was the second most frequently targeted in the first half of 2006." Actually these are the groups that make the largest group of the post's customers in the area of E-shopping.

To counter measure the infrastructure security risks, the postal operators can set up a secure Internet environment based on the ".post" top level sponsored domain and other services and tools like the DPM. These tools will minimize the risk of identity theft, phishing and other risks. As a big part of the security breaches happens due to users' carelessness when using the

Internet (e.g. opening e-mail from unknown sender), customer education should also be very high on the checklist.

Sales platform

Due to the existence of different types of sales platforms, both the merchants and the users are exposed to a variety of risks. Merchants suffer data extrusion, caused both by intruders getting into the system stealing valuable information and their employees selling the information out. Users can be victims of identity theft (when their information is stolen from the merchant or due to other ploys mentioned in Internet infrastructure risks). They can also face unfair merchants or when using an auction service – other unfair users.

According to credit card and industry security experts, the number of attacks against merchants is significant, but not well documented. It has been warned that cyber criminals are continuing to collaborate in online forums where they shop for credit card numbers and in some cases trade in "*shopadmins*" – a slang term for paid, illicit access to merchant websites whose databases have been hacked, according to an online press report. By gaining real-time access to a "*shopadmins*", thieves can retrieve active credit cards from a website's database shortly after customers place an order. The criminals will steal a credit card number and then start compiling all information about the owner that's available. One identity theft authority advised that, "Most people aren't aware that if your credit card data is stolen, most likely the thieves have also got your address, home phone number, e-mail address, and other data that can be used to turn around and get more data, or even open up new lines of credit in your name."

In addition to online data security breaches, online auctions provide consumers with additional threats. The most significant of these risks is "can the consumer trust the seller"? eBay is the largest online auction provider. These security risks are articulated in the financial statements of the eBay organization and warnings are posted within eBay's Trust and Safety website. Although not unique to eBay, the fraudulent activities between sellers and buyers present risks that can harm the viability of the online auction marketplace. These risks include disputes between senders and recipients:

- non-delivery of, or disputes over the quality of, goods and services due to merchant fraud or inadequate merchant business practices;
- reversal of payment by buyers both for legitimate reasons and in cases of buyer fraud;
- the need to provide effective customer support to process disputes between senders and recipients;
- potential employee fraud.

Posts have a long history of being a trusted intermediary in information exchange. Backed by a secure postal Internet platform, postal operators can set up an Internet marketplace. Being able to offer support through the whole E-commerce value chain they can offer a high level of security for all the customers, as well as a Trustmark for the cooperators.

Negotiation

To further understand the risks associated as to why online classified advertising websites, such as for example craigslist, do not offer a platform sufficient for remote transaction processing and merchandise fulfilment, it is necessary to understand negotiation risks. These negotiation risks include:

- failure to render;
- failure to provide;
- false escrow;
- out of band transactions.

Failure to render and failure to provide are at the heart of nearly every buyer and seller dispute for centuries. They are the heart of contract fraud. Every fraudster is trying to get something for nothing. Individuals looking to commit seller fraud make false solicitations for items to be sold, without the intent to deliver. Individuals looking to commit buyer fraud fail to pay for the goods that they have negotiated for and steal the goods from the seller.

To counter failure to render and provide schemes, Escrow.com has developed an escrow business model. Escrow.com reduces the potential risk of fraud by acting as a trusted third party that collects, holds and disburses funds according to Buyer and Seller instructions. Unfortunately, escrow fraud has developed as a means for criminals to reap benefits from their schemes.

Another negotiation risk involves a scheme referred to as "out of band transactions". Briefly, these occur when fraudulent buyers or sellers attempt to move transactions from the eBay platform. The fraudulent buyer or seller purports that the other party will reduce their eBay fees by not using the eBay platform to complete the transaction. The scheme is characterized by a fraudulent buyer finding an item of interest from a legitimate seller posting on eBay. The buyer contacts the seller and convinces them to move the transaction from eBay to save the commissions. The fraudulent buyer steals the goods by providing fraudulent payment information to the seller.

These kind of risks are very hard to avoid, as some of them involve a free choice of the user (out of band transactions). Other can be minimized with introduction of the secure transaction platform – though they probably won't be eliminated totally.

Payment

Criminals exploit a variety of payment methods in order to steal goods from E-commerce merchants. Payment fraud mechanisms provide the greatest risk for consumers, merchants and financial services organizations.

Credit cards

Although credit cards provide consumers with a great deal of protection for E-commerce transactions, merchants are exposed to a great deal of risk when accepting credit card transactions over the Internet. Under regulations established by the credit card associations (Visa and MasterCard) and issuers, E-commerce transactions are referred to as "card not present" transactions. As the name implies, "card not present" transaction rules are implemented when a card is not presented at a merchant terminal, rather the card data is remotely provided by the user to the merchant to fulfill the transaction.

Credit cards – merchant impact

Under credit card association regulations, merchants are responsible for encumbering all risks associated with fraudulent transactions against their merchant accounts. Stated another way, merchants are self-insured when fraudulent transactions are introduced at an E-commerce website or via a telephone order system. If a merchant accepts a fraudulent transaction, receives a credit card authorization from the association/issuer and fulfills the transaction by delivering goods, the transaction revenue can be reversed by the issuer. When the issuer identifies the fraudulent transaction, they can "chargeback" the merchant for the fraudulent transaction. These chargebacks go directly against the settlement of good transactions to reverse revenue. Unfortunately, the merchant has not only lost the goods that they sold through the E-commerce platform, they also lose the revenue associated with the sale based on the association regulations.

Credit cards – consumer impact

In the United States, the consumer is normally protected from the loss relative to card not present fraud; however in Europe credit card issuers are looking to displace card not present losses on consumers. If a "card not present" transaction in the United States is identified as

fraud, the U.S. consumer will likely encumber no more than \$50 in loss. In Germany, if an issuer can identify that the consumer lost the "card not present" data through phishing, the consumer will be required to settle the losses. Several consumer horror stories are developing in Europe where consumers are being required to pay tens of thousands of dollars for fraud transactions. This displacement of risk on the consumer may establish patterns in Europe where consumers are not interested in conducting "card not present" transactions via e-mail and through the Internet. This could have a detrimental impact on E-commerce in Europe.

Credit cards – issuer impact

With the exception of programs such as Verified by Visa, all risk for merchant transactions are encumbered by merchants, financial institutions are exposed to very little risk in "card not present" transactions. If a merchant uses Verified by Visa, the merchant will not receive a chargeback from the issuer for the "card not present" transaction. The merchant/consumer use of Verified by Visa program has become a cumbersome process. There are a variety of customer service issues for merchants that prevent the full adoption of the Verified by Visa system. Although financial institutions are exposed to very little risk for "card not present" transactions, the costs associated with managing the chargeback system are expensive and customer service problems exist when a customer receives fraudulent charges on their credit card statement from a fraud transaction.

Credit card associations/Issuers – organizational risk

Credit card companies are exposed to a variety of transaction processing, data security, fraud activity and reputation risks. Every organization that processes transactions is exposed to these risks. If credit card processing organizations were to be adversely impacted through any number of methods, including acts by computer hackers, organized crime or terrorist organizations, the Posts would not be able to rely upon these payment infrastructures for support of E-commerce transactions.

Electronic payment systems are very important to the development of E-commerce. Traditionally the financial services are the core businesses of the postal operators. Besides the secure electronic platform, the traditional payment methods provided by the Posts may be a secure solution for the E-shopping payments (pay on delivery, instant pay at the).

Fulfilment

Theft

Theft of items left in the trust of the postal administration is always a concern for Posts. When it comes to facilitating E-commerce, theft issues are just as important, if not more so. Obviously, the items delivered by the Posts to fulfill E-commerce transactions often represent high valued goods. These items are attractive for theft by a number of entities associated with the Posts:

- postal administration employees;
- contract mail handling organizations and employees;
- criminals lingering to steal "from the porch".

Theft issues initiated by any of these sources can hamper the trust of the Posts in being a reliable E-commerce partner.

Product less than expected

Although it is closely associated to negotiation risk, when consumers receive less than they expect, they will not be happy about their E-commerce transaction. Several situations can occur whereby the consumer didn't get what he bargained for through the E-commerce transaction. These include the following:

- goods are less than/different than had been negotiated;
- defective merchandise;
- counterfeit goods.

In each of these instances, the seller of the goods had premeditated a scheme to defraud the buyer. Depending on the sales platform and terms of sale, buyers can easily be deceived into "catching a good deal" only to later find they were defrauded. This can have a negative impact on the sales platform and/or the seller. For example, eBay has a financial statement business risk disclosure concerning how "The listing or sale by our users of pirated or counterfeit items may harm our business." Allegations of infringement of intellectual property rights have resulted in litigation against eBay, including litigation brought by Tiffany & Co. and Robespierre, Inc. (doing business as Nanette Lepore) in the U.S., Rolex S.A. in Germany, and a number of other owners of intellectual property rights. In addition, a public perception that counterfeit or pirated items are commonplace on eBay could damage their reputation and business. eBay warns that litigation and negative publicity may increase as their sites gain prominence in markets outside of the US where the laws may be unsettled or less favourable to us.

When a seller purports to have/sale one product and delivers another, a variety of consumer protection and safety issues can accrue. The manufacture and distribution of counterfeit goods are major businesses in some regions of the World. The risk of foreign government recognition of intellectual property laws can have a major impact on enforcement and reliability.

The delivery of goods is the core postal business and the basic service every operator provides. The success of postal E-shopping depends mostly on the ability to deliver the goods quickly, cost effectively and for sure. A lot of programs have been launched to ensure best possible quality of postal delivery services. This is also the area where posts have the biggest competitiveness advantage with its vast network of offices and delivery forces. This is and will be the cornerstone of postal E-business together with value added services like track and trace, insurances, multiple delivery, delivery at night, special pricing policies, cost calculators, etc.

Foreign government

E-commerce provides a global marketplace/environment and security issues transcend national borders as quickly as an e-mail message can be sent from Nigeria to the United States. Criminals must have access to systems in order to commit crime. The Internet provides unprecedented opportunities for international criminals and criminal organizations to access systems to commit fraud schemes. In order to commit a physical bank robbery, the criminal had to have physical access to the bank. However in cyberspace, criminals can access the assets of a financial institution from anywhere in the World. Today criminals, criminal organizations and terror organizations have access to logical resources of the financial and E-commerce merchants, as consumers and, in some unfortunate cases, as much as employees of those companies.

The willingness of a particular country to assist in the investigation of crimes relating to Posts is an extremely complicated matter. The issues include foreign government laws (is it illegal to send SPAM e-mail from the country or is it illegal to hold five thousand U.S. identity profiles?), government resources available to investigate crimes, willingness to cooperate and many others. In order for law enforcement to address these crimes, a variety of issues need to be worked out bilaterally and multilaterally.

Again the Posts and the UPU stand in a favorable position as its operating territory spans over 190 countries. If combined with establishment of appropriate standards and regulations the postal operators can offer the online community a secure service that covers the whole planet. As noted in the SWOT analysis, as major government own companies the Posts may also have influence on certain regulations that will facilitate the cross-border traffic.

System availability risks

Reliable postal, financial and commerce systems must be in place in order to ensure that consumers and business can transact. Under the payment risks, several statements were made concerning the risks of financial platform disruptions. These disruptions may include fire, natural disasters, power loss, disruptions in long distance or local telecommunications access, fraud, terrorism or accident. Two categories of criminal risk need to be examined to assure that the Posts' E-commerce infrastructure is fully available.

Denial of service attacks against financial services or E-commerce providers

In computer security, a denial-of-service attack (DoS attack) is an attempt to make a computer resource unavailable to its intended users. Typically the targets are high-profile web servers, and the attack attempts to make the hosted web pages unavailable on the Internet. DoS attacks have two general forms:

- force the victim computer(s) to reset or consume its resources such that it can no longer provide its intended service;
- obstruct the communication media between the intended users and the victim so that they can no longer communicate adequately.

It is typical among criminal organizations operating on the Internet to extort companies via DOS attacks. Often E-commerce merchants are forced to make hard decisions concerning whether to pay the extortionist or lose significant business. Obviously, if consumers can't reach the computers of the E-commerce provider, then the Posts' role in E-commerce would be negatively impacted.

Not all service outages, even those that result from malicious activity, are necessarily denial-of-service attacks. Other types of attacks, such as computer viruses, may include a denial of service as a component, but the denial of service may be part of a larger attack.

As with all the other risks, these are hard to countermeasure as "the best way to secure your server is to unplug it from the network" ... but then it is not a server anymore. Once again, a secure environment based on the ".post" concept may reduce the risk and help deliver a stable and secure platform for E-commerce.

5 Recommendations

The role of the UPU

The UPU has to set the rules for international mail exchanges and makes recommendations to stimulate growth in mail volumes and to improve the quality of service for customers in both the physical and digital world.

As defined in its mission statement, the UPU has to promote the adoption of fair and common standards and the application of technology and to ensure that the changing needs of customers are addressed.

On the basis of its mission and considering market changes, the UPU should be empowered to actively participate in enabling development in the electronic services sector.

In this regard, the role for the UPU on developing an appropriate strategy and plan for an electronic postal shopping service should include:

- Ensure parcels and express mail services quality of service all over the world.
E-commerce needs logistics and delivery services with quality, regularity and affordability. Price differentiation according to added-value services should be offered as alternatives for customers.
The express and economic alternatives should include international tracking and tracing systems and pricing models tailored to both the domestic and international E-commerce markets.

It is recommended to consider the following activities within the UPU/IB bodies:

- ensure the use of track and trace systems for parcels and monitor the quality of service globally – Parcels Group;

- monitor the quality of services for EMS – EMS Cooperative.

- Assess E-commerce market needs from both the buyers and sellers standpoint.

The postal sector must continually assess if the changing needs of customers are being addressed. As a new phenomenon E-commerce is influencing parcels traffic and getting more relative importance in the global trade market.

Despite the vast local experience, the postal sector doesn't have a clear evaluation of the E-commerce clients' and customers' needs in cross-border transactions, so it is recommended to:

- Undertake a market study to seek both the buyers and sellers needs with regard to E-commerce – Committee 4 (Markets).

- Ensure legal and technical interoperability for E-commerce delivery-related services.

In order to ensure participation in the future global E-commerce market place, the development and deployment of postal delivery and payment-related services should be done under international legal and technical standards.

In this regard it is recommended to:

- Develop international standards for online shipping tools – TC AES UG.

- Develop and promote a global postal *trustmark* for E-commerce in coordination with other global postal E-service branding initiatives.

In order to take advantage of the strengths of the brand recognition and geographical coverage a global postal *trustmark* should be created.

A set of requirements should be defined (e.g. a minimum level of quality of service in parcel and EMS delivery, use of IPS and IFS systems, etc.) in order to certificate the designated postal operators that fulfil these requirements.

In this regard it is recommended to:

- Create a UPU certification of quality of service for E-commerce postal provider – EPSG/AES UG in coordination with PFSG, Parcels Group, EMS Cooperative.
- Develop a Trustmark logo for the use of designated postal operator certified – EPSG.

- Sponsor the development of a global marketplace for E-commerce delivery and payment-related services in connection with the designated postal operators.

The new business, communication and entertainment environment is the web. Services should be provided where the costumers are.

With the entrance of the nineties generation, that was born in the digital era, into the consumption market, business will be on the Internet or will be numbered.

The UPU should develop an E-shopping modular solution combining physical delivery with online shipment tools as well as online financial payment features by:

- Developing a business plan for the global E-shopping solution – EPSG;
- Establishing the key elements for the global E-shopping solution – EPSG/TC AES UG;
- Prioritizing the key elements implementation – TC AES UG;
- Developing a global and E-shopping solution – PTC.