

Digital Transformation of Postal Operators – Challenges and Perspectives

Anna Otsetova¹

¹Department of Management in Communications, University of Telecommunications and Post, Sofia, 1700, Bulgaria

Abstract The postal operators are facing unavoidable digital business transformation in the era of the digital economy, Industry 4.0 and innovations. The rise of digital technology over the last 30 years has created both threats and opportunities for the postal industry. Digital transformation of companies and correspondence is having an impact on the core business activity of postal operators. Nowadays, electronic communications impact all of postal operators businesses. The volumes of physical letters have been decreasing substantially, particularly in the last couple of years. Obviously, this leads to loss of revenue. At the same time digital innovations, e-commerce, data collection, and digital identity have been at the heart of postal operators' efforts to propose new services, spawn efficiencies, and adapt their organizational culture and strategy to the needs of the digital economy. These tendencies require a different postal infrastructure as well as different skills and patterns of employment for postal operators. Hence, the digital transformation has become a strategic priority for postal operators. Although postal services play a vital role in connecting people, businesses and government across the world, the postal industry is grappling with its greatest challenge yet: digital disruption. This article dealt with the opportunity and challenges faced by postal operators in age of digital transformation. It focusses on main drivers of digital transformation and the dimensions of digital transformation in postal services sector. Based on own study a penetration rate for postal e-services in Bulgaria is presented. The results show that extent to which postal operators in Bulgaria are offered e-services is far from fully exploited across the entire network. Based on the results digital strategy priorities of postal operators are proposed.

Keywords Digital Transformation, Postal Services, E-postal Services, Digital Business Strategy

JEL L81, L86, L87

1. Introduction

Digital transformation of postal operators refers to the adoption of digital processes and tools to achieve strategic business goals. Digital transformation can be defined as a complex, multifaceted process that represents a massive cultural shift in the workplace and changes that affect every part of an organization. The process of digital transformation is different in every organization.

The postal operators are facing unavoidable digital business transformation in the era of the digital economy, Industry 4.0 and innovations [1]. The rise of digital technology over the last 30 years has created both threats and opportunities for the postal industry. Digital transformation of companies and correspondence is having an impact on the core business activity of postal operators. Nowadays, electronic communications impact all of postal operators businesses [2].

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Although postal services play a vital role in connecting people, businesses and government across the world, the postal industry is grappling with its greatest challenge yet: digital disruption.

This article dealt with the opportunity and challenges faced by postal operators in age of digital transformation. It focusses on main drivers of digital transformation and the dimensions of digital transformation in postal services sector. Based on own study a penetration rate for postal e-services in Bulgaria is presented. The results show that extent to which postal operators in Bulgaria are offered e-services is far from fully exploited across the entire network. Based on the results digital strategy priorities of postal operators are proposed.

2. Postal Services in the Age of Digital Transformation

Postal services have existed for over two thousand years and have a significant role in the economic development of all countries. Postal services are of crucial importance to businesses and citizens alike. Postal services around the world play a critical, daily role in keeping countries, economies, and people connected.

The postal sector is viewed in the European Union (EU) as an important means of communication and trade, particularly important from the economic perspective. The postal sector is a key contributor to the European economy. Nowadays postal industry in Europe employs more than 2 million people and connects more than 800 million people daily. Postal sector generates turnover of more than 150 billion euros and about 1% of the European Union Gross Domestic Product [3].

During the last three decades, the postal sectors in the EU member states have faced two main trends. On the one hand, markets have been fully liberalized. On the other hand, traditional postal services have been subject to an increasing competition from electronic substitutes. Nowadays the advance in Information and Communications Technologies (ICTs) are blurring boundary between the delivery of communications via physical and electronics means. Digitalization has impacted the development of postal markets across the world [4]. Digitalization has changed the role of the postal sector as letter volumes decline and parcel volumes grow. Whereas letter volume decline has shaped the postal market and continues to drive changes, the advances in ICTs create new opportunities and demands for the postal market. The combination of strong letter volume decline and growth in parcel volumes has important operational and economic implications for postal networks.

In response, postal operators have diversified into a broad range of new service areas. In fact, revenue from non-letter activities such as parcels, financial services, logistics and retail exceeded that of traditional letter revenue for the first time in 2014. In 2018 letter mail accounted 42% of postal industry revenue, at the same time the growth in parcels revenue is more than 14% [5]. New postal services revenue opportunities span government services, authentication, freight, customs brokerage, data collection, payments, etc.

E-commerce trade is one of the major drivers of the global postal services industry. Today, postal operators are an integral part of the overall e-commerce experience, as the delivery services are a critical element of the e-commerce customer experience. Postal operators offer a vast range of services to meet the needs of all customers, embracing online and mobile technologies to provide competitive and convenient postal services.

E-commerce has grown at significant rate at all EU member states. Average growth rate was 14% per year for the last five years. Dynamic growth was facilitated by technological development, harmonization efforts within the EU, shopping software in different languages, international online payment services, etc. At the same time increase in

e-commerce creates new jobs in postal industry. The overall employment in postal sector was more than 2 million in 2018, and annually increased by 0,5% on average between 2013 and 2018.

The continued growth of e-commerce is fuelling growth in parcels in postal networks both domestically and internationally as well as in the networks of the integrators and increasing number of private postal operators.

The changes in the postal market require that the postal operators have to develop their postal networks into different directions. Many of the postal operators have replaced their traditional post offices by outsourcing and franchising of post offices to third parties, and leveraging their post office infrastructure to enter new markets, e.g., financial services, insurance services, or high value retailing.

Postal sector has the largest integrated distribution network (with more than 660 000 post offices) in the world and can physically connect everyone around the world. At the same time postal sector is the second largest contributor to financial inclusion. In many countries the postal network is the largest network in the rural areas and it ensures the provision of financial, communication, logistics and other retail and government services [6].

Electronic substitution of traditional postal services is accelerating as both consumers and businesses adopt electronic processes across multiple domains. Now customers are attracted to greater convenience, faster service, and lower cost [7]. In the conditions of digital economy postal services need to modernize their role to accommodate for the digital age. Postal operators should offer new products and services that reflect the evolving mandate to bind the nation together in a new world where people are increasingly communicating digitally.

In the conditions of digital economy it is important to understand how the sector has evolved historically. There are four main phases in the process of digitalization of postal sector (Figure 1).

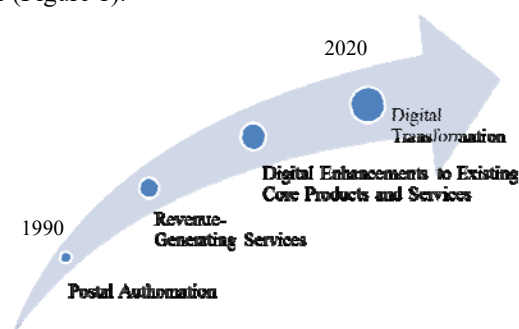


Figure 1. Phases of Digitalization of the Postal Sector

In early 90's the efforts of postal operators were mainly focused on rationalizing and automating sorting centres.

The second phase was the phase of creation of new revenue-generating digital services. Most postal operators started to offer trust-based services like certified electronic communications, online identity verification, secure electronic mailboxes, online payment, government services platforms etc.

As broadband penetration, Internet and ICTs use increased in the early 2000s in the third phase the core postal business was changed. The objective of postal operators was to expand customer access to postal services and to create new services at the intersection of physical and digital. Some of the so called core-enhancing digital postal services are support to e-commerce, e-finance and payment solutions and other support services.

The last phase is the phase of Digital Transformation. Digital transformation is not about any particular function. It is a fundamental organizational change that comes from advances in technology, process, culture, and business model. It is about converting an organization wholesale into an information enterprise, where connectivity, cloud, and analytics can enable faster innovation and more informed decision-making.

The impact of digitization is not new, but the digital economy is entering a new phase that presents new challenges and opportunities. Digital tools are changing how postal operators are structured and how they communicate, and sell. This has triggered the digital transformation of the postal industry. The drivers of digital transformation in postal sector are summarized at Figure 2. Some of them, such as broadband Internet, mobile and social networks are long-term trends that started at the turn of the century. Others, such as the Internet of Things or Big Data, embody a new phase that will increasingly impact postal strategies in the coming years [8].

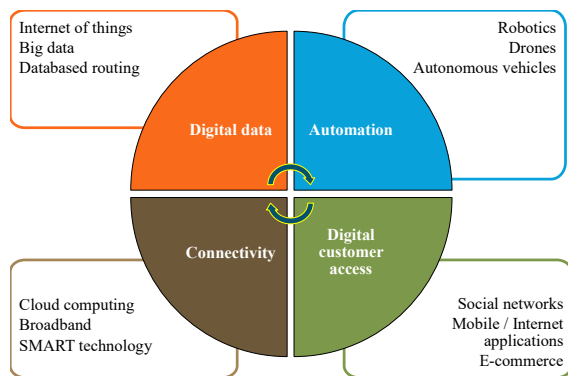


Figure 2. Drivers of Digital Transformation in Postal Sector

The impact of digital transformation in postal sector is summarized in Figure 3.

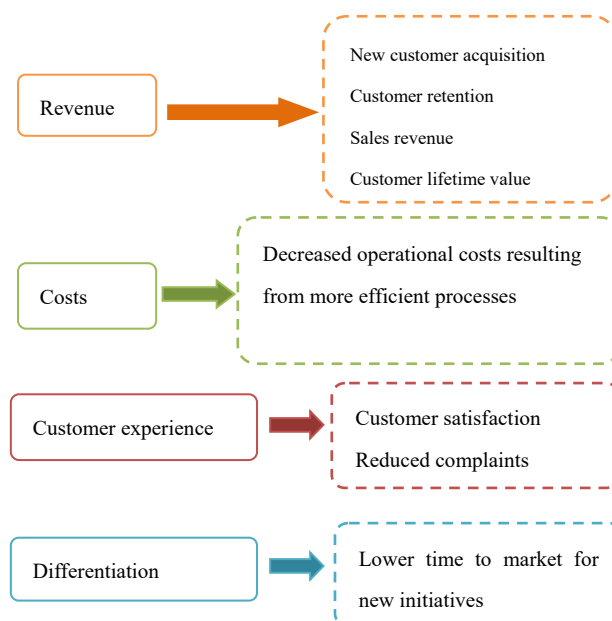


Figure 3. Impact of the Digital Transformation in Postal Sector

Thanks to digital transformation, postal networks are becoming increasingly complex, as are the services delivered by them. Customers expect a postal network that scales to their needs, offers innovative digital services and is highly engaging. To meet this challenge, postal operators must embark on the journey to be a fully digital.

3. Penetration Rate for postal e-services in Bulgaria

The postal electronic services (e-services) are services delivered by postal operators to their end-customers (individuals, businesses or governments) through digital channels. By the end of 2018, 93% of postal operators worldwide provide e-postal services, either directly or in partnership with other companies [9].

Universal Postal Union (UPU) classifies the electronic postal services into four groups: e-post and e-government, e-finance and payments solutions, e-commerce, and support services.

E-post and e-government services are communication, business and government services delivered to customers via ICTs means. This group encompasses the following services: Postal electronic mailbox, Online direct mail, Postal registered electronic mail, E-cards, Online bureaufax, E-invoicing, Hybrid mail, Reverse hybrid mail, Online facilitation of hybrid mail, Electronic postal certification mark, Digital signature, Digital identity services, Credentialing services, Digital archive, E-health, E-administration: online ordering/applications/ registrations.

E-finance services are financial services provided by postal operators to end-customers using ICTs. This group encompasses the following services: Online account management, Electronic remittances, Online bill payment, Payment solutions, Escrow services for e-commerce.

E-commerce services consist of buying and selling products and services using ICTs. It involves processing and delivering items purchased physically or electronically. This group encompasses the following services: Online philatelic and postal products shop, Online postal shopping portal, Online customs declaration, Integration of postal web services with merchants' sites, Performance reports and analytics, Virtual international address, Calculation of estimated total landed costs, Online management of documents/merchandise delivery options.

Support services consist of widely available services provided by postal operators to end-customers using ICTs. They imply added value and in most cases are free of charge. This group encompasses the following services: Public Internet access point in post offices, Online information on services and tariffs, Online lookup, Online contact and customer service, Track and trace, Electronic notification, Online change of address, Holding of mail delivery online, Online address cleansing services, Electronic postal invoicing, Digital postage, Digital personalized postage, Pick-up service [8].

The penetration rate for e-post and e-government services in Europe is presented in Table 1. The results show that hybrid mail (59%) and postal electronic mailbox (33%) are the leading e-post and e-government services, followed by postal electronic registered mail (29%).

Table 1. Penetration Rate for E-post and E-government Services in Europe

E-post and E-government services	Penetration Rate
Hybrid mail	59%
Postal electronic mailbox	33%
Postal electronic registered mail	29%
E-cards	27%
Digital signature	24%
Online direct mail	23%
Digital identity services	22%
Online facilitation of hybrid mail	21%
Digital archive	20%
E-invoicing	20%
E-administration	18%
Electronic postal certification mark	18%
Reverse hybrid mail	13%
Credentialing services	11%
E-health services	7%
Online burofax	7%

As it is shown in Table 2, e-finance services widely seen as important components of modern core postal offerings are still underdeveloped in Europe.

Table 2. Penetration Rate for E-finance services in Europe

E-finance services	Penetration Rate
Electronic remittances	59%
Payment solutions	27%
Online bill payment	24%
Online account management	21%
Escrow services for e-commerce	5%

E-commerce services, although widespread, have not yet reached their potential of use (Table 3).

Table 3. Penetration Rate for E-commerce Services in Europe

E-commerce Services	Penetration Rate
Online philatelic and postal products shop	53%
Integration of postal web services with e-merchants sites	53%
Online postal shopping portal (shopping mall)	41%
Online management: documents/merchandise delivery	21%
Calculation of estimated total landed costs	21%
Performance reports and analytics	21%
Online customs declaration	15%
Virtual international address service	11%

Support services are widely developed and most used postal e-services (Table 4).

Table 4. Penetration Rate for Supportive E-services in Europe

Supportive E-services	Penetration Rate
Online lookup (postcodes, addresses, post offices)	94%
Track and Trace	88%
Online information on services and tariffs	88%
Online contact and customer service	82%
Electronic notification	77%
Pick up service	50%
Public internet access point in post offices	47%
Online change of address	35%
Holding of mail delivery online	24%
Digital postage	23%
Electronic postal invoicing	22%
Digital customized postage	11%

The fastest-growing services in Europe (in terms of the percentage of countries providing them) are e-notification (from 22% in 2010 to 77% in 2018), online postal shopping portal (from 25% to 41%), online change of address (from 6% to 35%), holding of mail delivery online (from 0% to 24%), and e-administration (from 6% to 18%) [9].

Tremendous technological changes forced the Bulgarian postal operators to adjust their services to needs of the information society, use emerging business opportunities and pay more attention to a rapidly growing direct and indirect competition. Market liberalization had a major impact on the postal business in the EU, and the process brought steadily growing competition from private operators. Bulgarian postal market was fully liberalized in 2011. The postal service market in Bulgaria has evolved rapidly in the past decades, mainly due to the changing market conditions and the development of consumer needs, which in turn results in a change in demand for postal services [10].

Postal services industry in Bulgaria is highly competitive. Currently more than 170 postal operators are operating in Bulgarian postal services market. Moreover the existence of foreign players likes DHL, TNT and UPS in the postal sector in Bulgaria pressures the local providers to be more innovative in order to compete aggressively in the development of services in the same market.

Based on the own web survey it was found that more than a half of the registered postal operators in Bulgaria provide e-services. Each operator, however, provides a different combination of services.

The results of the survey related to the provision of e-services and e-government in Bulgaria are presented at Figure 4. The figure shows which services are offered and how many of the registered postal operators offer them (as a percentage).

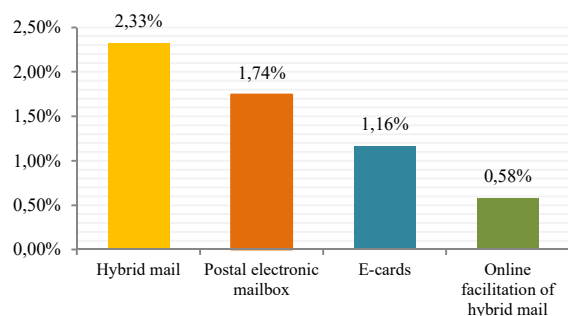


Figure 4. Penetration Rate for E-post and E-government Services in Bulgaria

The results indicate that the services of this category are not widely distributed in our country. In Bulgaria the portfolio of e-post and e-government services is built around a core of three products: hybrid mail, postal electronic mailbox and e-card.

Electronic financial services are also very limited in Bulgaria (Figure 5.). The electronic remittance, a service pertaining to the traditional core business of most postal operators worldwide, is the most developed digital financial and payment service in Europe and in Bulgaria also.

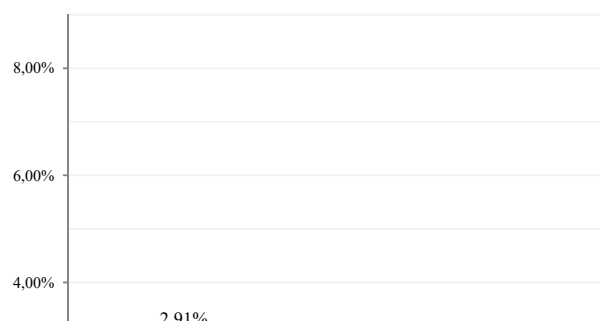


Figure 5. Penetration Rate for E-finance Services in Bulgaria

Some of services from the e-commerce segment are widespread in Bulgaria (Figure 6). The most widespread services in this group are the services: Integration of postal web services with e-merchants sites and Calculation of estimated total landed costs. Postal operators' efforts to grow their e-commerce business revolve mainly around integration with websites and shopping portals.

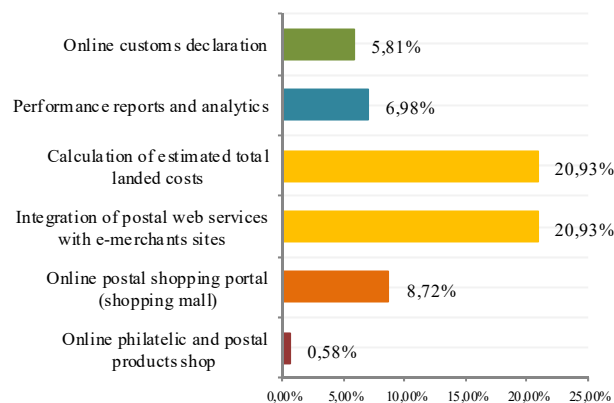


Figure 6. Penetration Rate for E-commerce Services in Bulgaria

According to Communications Regulation Commission annual report (2018) revenue from the delivery of parcels generated by e-commerce accounts nearly 40% of the total amount of postal services revenue. Most of the postal operators are working on updating the software they use to achieve the highest possible speed of information exchange and convenience for customers as well as integration with Internet marketers.

Both in Europe and in Bulgaria, the most widespread are the so-called supportive services. More than a half of the Bulgarian postal operators provide full variety of supportive e-services (Figure 7).



Figure 7. Penetration Rate for Supportive E-services in Bulgaria

The results show that extent to which postal operators in Bulgaria are offered e-services is far from fully exploited across the entire network.

According to last report of UPU (2017) Digital postal services capacity index (DPSCI) of Europe is 0.33 of maximum 1. The index illustrates postal operators' potential to provide digital inclusion. The leaders in Europe are France and Germany with average score 0.81. The DPSCI of Bulgaria is 0.19 [9]. Bulgarian postal operators are therefore at a turning point: they need to adapt in order to remain relevant, competing with digital native companies in different areas of their product portfolio. To be able to

compete effectively, postal operators need to speed up the digitalization of their products. This means that postal operators that have not fully digitalized need to do so urgently, or risk being excluded as digital service providers.

New reality in the sector is a challenge for the Bulgarian postal operators. In order to limit the shrinkage of its business, postal operators have to develop areas of activity in the digital space. Bulgarian postal operators' strategies need to be adapted to new digital needs.

The main strategic landmarks should be targeted at:

- Increasing funds for the development of an electronic infrastructure;
- Inclusion of the management structures of postal operators a new business department for e-services;
- Recruitment of individuals with specific know-how in relation to the digital world;
- Organization of specific training programmes;
- Creation or strengthening of internal innovation capabilities (research team, innovation lab);
- Building partnerships with other companies in order to be agile, share risk and reduce financial burdens;
- Encouraging third parties such as developers, startups etc. to propose new digital postal services.

3. Conclusions

Based on this study following conclusions can be formulated:

- (1) The main trend in postal sector in EU is the increasing competition from electronic substitutes. The digitalization has changed the role of the postal sector.
- (2) There are four main phases in the process of digitalization of postal sector: postal automation, phases of revenue-generating digital services, phase of core-enhancing digital postal services, digital transformation.
- (3) There are four main drivers of Digital Transformation in Postal Sector: automation, digital customer access, connectivity and digital data.
- (4) Calculated penetration rate for postal e-services show that extent to which postal operators in Bulgaria are offered e-services is far from fully exploited across the entire network. Digital postal services capacity index of Bulgaria is far below the European average level.
- (5) Bulgarian postal operators' strategies need to be adapted to new digital needs.

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