

Katarzyna Midor*

ORCID ID: 0000-0001-5680-7354

Silesian University of Technology, **Poland****INTRODUCTION**

Defining quality for the management area, it is important to take into account the broadest possible range of customer needs and satisfaction. Therefore, quality is defined as a set of characteristics of product or service, which influence the level of customer satisfaction with established or suggested needs and as a whole the marketing, production, technical, product or service characteristics by which the product or service will largely satisfy customer expectations (Karaszewski & Skrzypczyńska, 2013, Cole, 1994, Molenda & Ratman-Kłosińska, 2018).

Effective and well thought-out customer service enables existing businesses to gain and maintain consumer loyalty. Modern enterprise should demonstrate modern technology, innovative products, knowledge and skills influencing the quality level of customer service, which in recent years has significantly changed its approach to the collected goods and services (Bołoz et al., 2018, Bołoz & Midor, 2018). It is difficult for an individual customer to see the difference between the proposed products, both quality and technical differences, but the level of customer service represented by the company is very easy to verify. Therefore, in order to satisfy the needs of customers, companies are forced to constantly strive to increase their satisfaction through constant market analysis, as well as to offer services and products of the highest quality (Sitko, 2015).

In the traditional economy, information asymmetry was observed. The company had information on the commercial offer by sending messages directly to customers. On the other hand, the customer was deprived of important information influencing the purchasing decisions, mainly data concerning the conditions of providing offers and proposals offered by the competitors. Development of electronic communication technology has changed this situation considerably. Currently, the customer, using electronic means of communication, has access to information needed to make an accurate decision about the purchase and can largely participate in the creation of an offer for himself. In addition, it can also control the behavior of suppliers. This is a win-win situation. If the customers co-create the parameters of offer, it is obvious that they will be satisfied with the offer. Additionally, if a new need arises, the customer can satisfy it with the actions of an entity with which has positive experience. Therefore, on the one hand, the manufacturer or service provider has a simple task in the area

* katarzyna.midor@polsl.pl

of customer needs identification, and on the other hand, has a possibility to individualize meeting customer needs. It can be noted that electronic communication significantly facilitates the implementation of the company's strategy (Łysik & Machura, 2004, Nieżurawskiet al., 2010, Klincewicz, 2016, Palka et al., 2017). The key to success is the ability of companies to meet the requirements and needs of their customers. In such a situation, appropriate customer service may be one of the most important elements distinguishing a particular company's offer from competitors. It can be stated that customer service is the most effective means at the disposal of companies to fight competition. Companies outperform in their efforts to meet all the needs of their customers and, in addition, exceed the expectations of their purchasers. Therefore, companies in the process of gaining customer retention and service, more often use modern technologies. This includes the Internet, electronic order handling, customer relationship management – CRM and other systems (Klincewicz, 2016).

EXAMPLES OF TECHNOLOGIES INFLUENCING THE QUALITY OF CUSTOMER SERVICE

Using modern technologies, enterprises may apply additional new solutions in the area of customer relations. A common form is the use of websites. The company thus wants the customer to return to the site after the first visit. The aim of this is to build customer trust and loyalty. An active strategy based on the use of e-mail is also popular. The manufacturer sends information to a specific group of customers reminding them of a new event, indicating a change in prices, the existence of a promotion, etc. There are also used discussion groups (grouped customer bases according to interests) in which organizations can participate. In turn, electronic mail may automatically reply to an e-mail requesting a specific information to be sent. Such methods allow companies without human intervention to be in constant contact with the customer by providing the customer with any information regarding price lists or catalogues. New technologies also include Internet fax with special software (Długosz, 2009). The CRM system is one of the most complex systems for identifying, maintaining and acquiring customers in order to improve the quality of customer service and increase sales. This system consists in collecting, storing and processing information concerning contacts, documents and other relations between the customer and the company. The basic purposes of this system include (Łobejko, 2005):

- I adapting customer requirements to the offer,
- getting to know the customer's expectations and requirements,
- providing products that meet customer expectations,
- improving the quality of pre and post-sales service,
- minimizing the cost of acquiring new customers,
- increase in sales,
- optimization of marketing activities,
- pursuit of market advantage.

This system enables to control the sales of products from the moment of establishing customer contact to after-sales care and service. It enables the assessment of customer profitability and seeks methods to sell more products through all obtained information about purchases, time and handling during the transaction and during the

use of product. The CRM systems introduce the following benefits to enterprises (Grudzewski, 2004):

- affects the quality of customer service,
- streamlines the customer service process,
- saving working time,
- enables to increase customer satisfaction,
- reduces costs.

Processing and collecting such a large amount of data is not possible without the implementation of modern technologies. When discussing the impact of new technologies on customer service quality, it is important to mention the e-fillment service, which supports electronic order handling. It is a process of order fulfillment along with customer service using the tools of electronic economy. The customer's contact with the supplier is carried out through a computerized ordering system, which includes: product description, their presentation, price list, placing orders and payment. Electronic order handling enables:

- reduction of order processing time,
- better recognition of customer needs,
- shortening of payment periods,
- reduction of stocks,
- reduction in labour intensity,
- elimination of human error,
- constant monitoring of the process of electronic order realization by the supplier and customer,
- ensuring a higher level of security and correct information transmission.

Such benefits can only be achieved through continuous improvement of the process. Therefore, it is important to invest large funds both in acquiring new technologies and through the development of necessary infrastructure (Długosz, 2009, Midor 2014).

CUSTOMER SATISFACTION SURVEY METHODS USED IN THE ANALYZED CASE

Customer satisfaction survey has a very important impact on the successes and results in every enterprise. Regular monitoring of customer satisfaction levels prevents the loss of loyal customers from leaving the competition. Continuous monitoring also has a strong impact on the acquisition of new customers.

In the presented paper, direct methods such as questionnaire surveys and direct interview were used to analyze the impact of new technologies on customer satisfaction.

CHARACTERISTICS OF THE RESEARCH SUBJECT

In the paper the influence of new technologies on customer service was analyzed in the clothing industry company. The clothing market is one of the most complex and changing in terms of customers' tastes, and therefore companies are forced to keep track of fashion trends, competition, design new goods and search for new technologies in order to gain and retain regular customers.

The Polish market consists of 3 sectors such as: companies with Polish capital, but

manufacturing goods in other countries, foreign companies and companies with capital and company located in our country. Significant shareholders on the Polish clothing market are (Kulińska & Odlanicka-Poczobut, 2016):

- H&M – the Swedish brand,
- Lpp S.A. – the Polish corporation (Reserved, Cropp, House, Mohito, Sisay),
- Inditex – the Spanish company (Zara, Massimo Dutii, Bersha, Stradivarius),
- CCC – the Polish brand producing footwear in Polkowice.

The entity in which the research was carried out is a stationary store of Reserved brand belonging to the company LPP S.A. Reserved has the largest number of stores of all the company's brands, with over 455 stores in 15 European countries and in several Middle Eastern countries. Reserved is a brand that follows the latest trends in its designs and immediately responds to the needs of its customers by supplementing its collections with new models on a weekly basis. The brand offers clothing for all ages, from infants to mature consumers. It is the only company to offer products for children and clothing for both young and old customers by dividing the store into a "young" zone, which is intended for school-age consumers, and e.g. "modern line", which offers elegant products at higher prices.

DESCRIPTION OF THE INTRODUCTION OF NEW TECHNOLOGY INTO THE ANALYZED RESEARCH SUBJECT

In order to improve the quality of customer service, the company introduced Asus mobile devices into its stores. Implemented technology is a kind of test checking the need to use this device in other stores of the brand. The analyzed object of research is characterized by a large surface area, only this type of stores were selected to test the new technology. An application called "Store Vision" version v3.4.4 was added to the devices, which resulted in a major breakthrough in the work with goods in stores and warehouses. The application operates in on-line mode (Internet connection required) via Wi-Fi and in off-line mode (Internet connection not required) using data packets. These applications introduced many new possibilities, and the most important functions influencing the quality of customer service may include:

Barcode scanning

Most of the information on goods can be obtained by scanning the barcode using the smartphone's camera. In addition, a flashlight can be activated to scan goods in the dark or in case of high contrasts or a mixture of shadow and bright light. Employees who have a device with them can provide the customer with quick information on the selected product from the perspective of each part of the store, such as: date of entry into the store, information on the color of selected product, availability of sizes and availability in stores throughout the country.

Product Management/Product

This function is used to work with the goods, displays current data on the current day. The data that can be read are the current stock of sizes for the model – color, current price (discount), last regular price, index status. This information is contained in the Product tab, the function has an additional tab RANKING and STOCK with the goods in tab.

Ranking tab enables to calculate sales on the basis of the last 7 full days. After

scanning the goods in this tab it is possible to find: the place in terms of sales occupied by a given product, current stock, number of days of covering with goods, number of days from the first supply or gross value of sales for the last 7 days.

Stock tab enables to obtain information on the inventory of goods in neighboring stores and cities. You can find: availability of the number of product items searched for by the customer, nearby stores on the list sorted by distance, number of stock items by size and model – color. The stock of goods in the store depends on the mode in which the device operates. If the application runs in on-line mode, it is the current status of stock at the moment of scanning goods. If the application runs in off-line mode, the stock is taken from the loaded data package and it is the state from the moment of generating the package on a server.

Replenishment manually

Replenishment is a process that operates in the form of automatic replenishment of the sold product up to the level of replenishment coefficient, i.e. the maximum number of pieces available in the store for the customer so that there are no shortages of sizes, but also so that clothes look good. The manual replenishment process consists of 3 stages:

- Scanning goods in the store and marking sizes in the system that should be provided from the storage area.
- Going to the magazine and searching for previously selected indexes. After finding each item, marking the quantity required by the store.
- Generating a summary of replenishment execution after the sale in order to analyze the effectiveness of a given replenishment.

The above mentioned functions are among the few that have improved the work with goods, and that have changed the approach to the customer service process, significantly affecting the quality of customer service. Introduced device are test versions for stores.

MEASUREMENT AND ANALYSIS OF CUSTOMER SATISFACTION LEVELS

The research process was conducted in 2019 on a group of 50 customers of a stationary store, where the device with new technology was used. The research sample was randomly selected and consisted of individual customers of one of the chain stores located in a high sales group, thanks to implementation of monthly sales plans at the level of 92%. This store occupies 1200 m² of space and is characterized by a large stock of goods. The analysis was carried out for individual customers, retail customers buying from the company's stores. A total of 40 questionnaires were qualified flawlessly and only these could be analyzed (Ostrowicz, 2017).

Characteristics of research sample

The analysis of questionnaires filled in by the customers of a stationary store shows the following characteristics of research sample. Figure 1 presents the survey results concerning the age of surveyed customers.

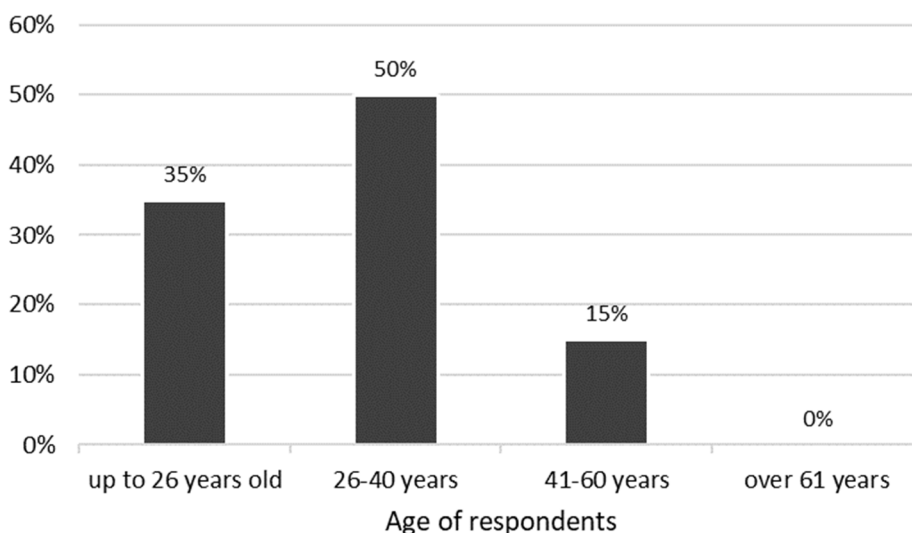
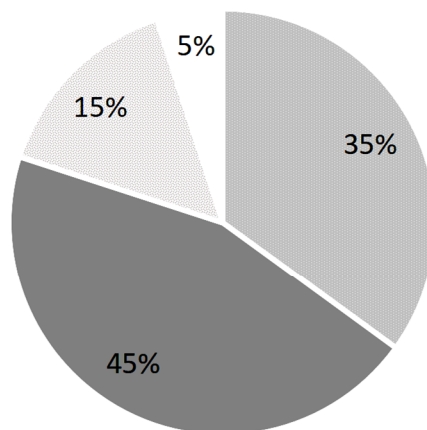


Fig. 1 Age of respondents

Source: (Ostrowicz, 2017).

Data in Figure 1 indicate that the largest group of respondents constituted from 26 to 40 years of age, i.e. half of the respondents. Slightly less, because 35% of the respondents are under 26 years of age. Customers aged 40-60 constituted only 15% of the respondents. Customers over 60 years of age did not complete the questionnaire.

Figure 2 shows results concerning the average frequency of purchases made by the respondents.



■ 3 times a month ■ once a month ■ once per quarter ■ less

Fig. 2 Average frequency of purchases

Source: (Ostrowicz, 2017).

Figure 2 shows the average frequency of purchases. Almost half of the respondents make purchases at least once a month. Three times a month it is done by 35% of the respondents, and sporadically – once a quarter and less frequently – by 20% of the respondents. It is worth noting that more than half of the respondents belong to the group of loyal, systematically returning customers.

Analysis of research results

The questionnaire consisted of 10 questions on customer service aspects. Respondents were asked to first indicate the importance of particular customer service elements for them on a scale from 1 to 10, and then assess their satisfaction with them on a scale from 1 to 5 in the surveyed store. The average results for the importance of collected customer service elements for a stationary store using modern customer service technologies were presented in Table 1.

Table 1
Average results of conducted research for the importance of customer service aspects for a selected stationary store

No.	Customer service elements	Scales
1.	Availability of product from stock in other stores	1.6
2.	Supply of technologies and system enabling quick access to product information used by the store staff	1.68
3.	Possibility of returns and complaints	0.29
4.	Store location	0.32
5.	Presence of service in the sales area	0.3
6.	Frequency of goods supply	1.05
7.	Completeness of offered assortment	0.98
8.	Customer interest by store sellers	1.44
9.	Order in the store during the sale	0.79
10.	Competence of store employees	1.5

Source: (Ostrowicz, 2017).

Analyzing the above results, the customers of a given store from selected customer service elements consider the supply of technologies and system enabling quick access to product information used by the store staff (scale 1.68), availability of the product from the stock of other stores (scale 1.6) and competence of store employees (scale 1.5) to be the most important. Providing the store with technologies and systems significantly improves communication between the customer and the seller. A retailer equipped with a smartphone and built-in special application has the possibility to provide the customer with a lot of information on the product. The customer making purchase wants the selected product to be available in expected size or color. A convenient situation for the customer is also the possibility of collecting the desired goods from another store or directly from the warehouse. The well-established importance for the competence of employees shows that consumers want to know about the buyer of a product. Customers appreciate highly qualified staff ready to provide assistance or information on the composition of material or current trends. As can also be seen from the table above, the interest in customer by the sellers of stores (scale 1.44) is no less important. Customers appreciate the fact that when they enter the store they are noticed and welcomed. A large number of customers decide to go shopping alone, and therefore an employee interested in the customer should first of all provide assistance and advice. Slightly smaller is the completeness of offered goods (0.98). This may mean that during one visit the store should be equipped in such a way that it can collect clothes from different product groups (clothing, accessories, shoes) or different departments (men, women, children). The frequency of goods supply to the store (scale 1.05), which is related to the availability of assortment, is also significant for customers. Regular and well planned supplies to stores contribute to more convenient customer purchases by supplementing the size and offering new goods. The following aspects are of no great

importance to shoppers: store order during the sale (scale 0.79), store location (scale 0.32), presence of staff in the store (scale 0.3) and the possibility of returns and complaints (scale 0.29).

Analysis of the importance of customer service elements showed the direction in which it should change and improve this stationary store. The next part of survey will show to what extent these requirements have been met by the store. Respondents were also asked to assess their customer service satisfaction. The average results for individual customer service elements in the stationary store were shown in Table 2.

Table 2
Average results of customer service satisfaction surveys of a selected stationary store

No.	Customer service elements	Rating
1.	Availability of product from stock in other stores	0
2.	Supply of technologies and system enabling quick access to product information used by the store staff	6.79
3.	Possibility of returns and complaints	6.96
4.	Store location	6.54
5.	Presence of service in the sales area	3.96
6.	Frequency of goods supply	6.42
7.	Completeness of offered assortment	4.96
8.	Customer interest by store sellers	3.63
9.	Order in the store during the sale	5.13
10.	Competence of store employees	2.88

Source: (Ostrowicz, 2017).

The analysis of results in Table 2 indicates that the possibility of returns and complaints with a rating of 6.96 was the highest rated by the respondents. This proves that the process of returning goods and complaints is carried out in accordance with the rules and regulations, and customers are satisfied with after-sales service. The customer has up to 30 days to make a return, can return the goods in any stationary store in the country and can make a complaint up to two years from the moment of purchase also in any stationary store. Slightly lower ratings were given for the store's supply with technologies and system enabling quick access to product information used by the store staff (rating of 6.79). The store where this research was conducted was equipped with Asus devices supporting the work with goods, which positively affects the quality of customer service. This is undoubtedly a great progress in customer service, which enjoys great competitiveness among stores not investing in this type of technology. In the forefront is also the store's location (rating 6.54). The store is located throughout the country. Therefore, access from every city in Poland to the store takes very little time and is characterized by good communication. In addition, every consumer can take advantage of purchases through an online store with home delivery or a nearby store within 3 working days. Another aspect is the frequency of goods supplies to the store (rating 6.42). Supplies are made twice a week at night, which has a positive impact on the quality of customer service. The customer is not exposed to the lack of presence and interest on the part of store staff and to the unaesthetic appearance of the store associated with acceptance of

delivery, and after the opening of store finds a fully completed product extended with a new range of products. The order in a store during the sale was rated at 5.13. The customer making purchases in the store can often meet with unsorted goods caused by high sales of the store. The store has one of the largest areas of retail space, thus it is impossible to fully control the aesthetics at the peak of sales. Completeness of offered assortment with a rating of 4.96 may be related to the choice of sales category for which the store decides. Sales categories are divided into clothes, accessories (shoes, bags, caps, etc.) and underwear. The analyzed store has a high sales category for clothes, while for accessories the category has been reduced, which may be the reason for not very high customer satisfaction.

The aspect of customer interest by store sellers achieved a relatively low score (3.63), which may be related to employee incompetence, which is at an unsatisfactory level (2.88). Inaccessible employees for customers may require: appropriate training, conducting appropriate evaluations and assessing the employee's quality of customer service. Only a properly serviced customer will be satisfied with the purchase and will gladly return to the store to make a new purchase. Therefore, it is very important that staff attend training and deepen their knowledge of customer service. The lowest score was given for the availability of product from other stores (score 0). This result is the reason for the respondents' zero rating for this aspect. This is due to the fact that stationary stores do not collect goods individually for customers. Despite frequent questions regarding the transfer of goods from the customer, the company has not yet decided to improve its customer service and sales in this way. Many customers have selected stationary stores to which they return and for many reasons do not make purchases in further stores, so it would be very convenient to introduce the possibility of ordering goods from a nearby store or directly from an online store or warehouse specifically at the customer's request.

CONCLUSION

Summarizing the conducted research, both literature and empirical, it can be concluded that the potential for emergence of new technologies has contributed significantly to changes taking place in the sphere of business and social transformation. The dynamic development of technology in recent years has significantly changed the face of modern society. Customer service is the most effective means at the disposal of companies to fight against competition. Companies outperform each other in their efforts to meet all the needs of their customers. Therefore, in the process of acquiring, maintaining and servicing customers, companies more often use modern technologies.

The survey carried out in one of the stationary stores on a group of 40 selected customers, enabled to determine the importance of particular aspects for customers and to learn the level of customer satisfaction with selected factors. The first stage of research, i.e. analysis of the importance of particular aspects for the customer, showed that the most important factors for customers are the supply of technologies and a system enabling quick access to product information used by the store staff, availability of the product from the stock of other stores and the competence of store employees. The second stage of research, which analyzes the level of customer satisfaction with service in a selected stationary store, indicated that the highest scores were given to such elements as: the possibility of returns and complaints,

supplying the store with technologies and a system enabling quick access to information about the product used by the store staff, and the store's location. The assessment of customers from the aspect of technology supply and the system enabling quick access to product information used by the store staff is very high, which proves that the introduction of a smartphone to the studied store had a very positive impact on customer service. Therefore, a schedule for technology implementation was proposed for other stationary stores.

On the basis of conducted research, improvements were proposed for the element of product availability from the stock of another store and frequency of supplies, which resulted in the introduction of a possibility to place individual orders for products available in other stores, central warehouse and online store, increasing the frequency of supplies. An improvement for the aspect of employee competence and customer interest by service is hiring an internal company conducting a secret customer survey and appointing a customer service expert to prepare employees for the areas of survey and customer service through regular training.

The proposed improvements are intended to increase customer satisfaction with the products and services offered, and thus strengthen their loyalty.

ACKNOWLEDGEMENT

The research was conducted with the support of the statutory work titled "Methods and tools supporting development of priority research areas", project number 13/030/BK-19/0052.

REFERENCES

- Bołoz, Ł. and Leonel, F. Castañeda (2018). Computer-aided support for the rapid creation of parametric models of milling units for longwall shearers. *Management Systems in Production Engineering*, 26(4), pp. 193-199.
- Bołoz, Ł. and Midor, K. (2018). Process innovations in mining industry and effects of their implementation presented on example of longwall milling heads. *Acta Montanistica Slovaca*, 3, pp. 282-292.
- Cole, G. A. (1994). *Strategie Zarządzania*. Londyn: DP Publications.
- Długosz, J. (2009). *Nowoczesne technologie w logistyce*. Warszawa: PWE.
- Grudzewski, M. (2004). *Metody projektowania systemów zarządzania*. Warszawa: Difin.
- Sitko, J. (2015). The intelligent process of initiating new product in aspect problems of management. In: 15th International Multidisciplinary Scientific GeoConference SGEM 2015. Ecology, economics, education and legislation. Conference proceedings. Volume 3, Environmental economics, education & accreditation in geosciences. Sofia: STEF92 Technology, pp. 689-696.
- Karaszewski, R. and Skrzypczyńska, K. (2013). *Zarządzanie Jakością*. Toruń: Wyd. Dom Organizatora.
- Klincewicz, K. (2016). *Zarządzanie, organizacje i organizowanie – przegląd perspektywy teoretycznych*. Warszawa: Wyd. Naukowe Wydziału Zarządzania Uniwersytetu Warszawskiego.
- Kulińska, E. and Odlanicka-Poczobut, M. (2016). Merchandising a realizacja procesów magazynowania i dystrybucji firmy odzieżowej – case study. Opole: Oficyna Wydawnicza PIZP.
- Łobejko, S. (2005). *Systemy informacyjne w zarządzaniu wiedzą i innowacją w przedsiębiorstwie*. Warszawa: Oficyna wydawnicza SGH.
- Łysik, Ł. and Machura, P. (2004). *Rola i znaczenie technologii mobilnych w codziennym życiu człowieka XXI wieku*. Wrocław: Wyd. Uniwersytet Ekonomiczny we Wrocławiu.

- Midor, K. (2014). Innovations in the Field of Enterprise Quality Management as an Element of Sustainable Development Implementation, Conference: 14th International Multidisciplinary Scientific Geoconference (SGEM) Location: Albena, Bulgaria, Jun 17-26, Geoconference on Ecology, Economics, Education and Legislation, SGEM 2014, Vol III Book Series: International Multidisciplinary Scientific GeoConference-SGEM, pp. 215-221.
- Molenda, M. & Ratman-Kłosińska, I. (2018). Quality assurance in environmental technology verification (ETV): Analysis and impact on the EU ETV pilot programme performance, *Management Systems in Production Engineering*, 26(1), pp. 49-54.
- Nieźurawski, L., Pawłowska, B. and Witkowska, J. (2010). Satysfakcja klienta, strategia, pomiar, zarządzanie. Toruń: Wyd. Naukowe Uniwersytetu Mikołaja Kopernika.
- Ostrowicz, K. (2017). Wpływ wprowadzania nowych technologii na jakość obsługi klienta w przedsiębiorstwie usługowym. Praca magisterska. Zabrze: Politechnika Śląska.
- Palka, D., Brodny, J. and Stecula, K. (2017). Modern Means of Production and the Staff Awareness of the Technical in the Plant of the Mining Industry, CBU International Conference. Innovations. In: P. Hajek, O. Vit, P. Basova, M. Krijt, H. Paszekova, O. Souckova, R. Mudrik, ed., *Science And Education*. Book Series: CBU International Conference Proceedings, 5, pp.1190-1194. doi: 10.12955/cbup.v5.1094.

Abstract. Nowadays, companies are increasingly forced to fight against competition. The number of competitors on the market is constantly growing, and customer's demands on the products offered by the companies are increasing. The role of customers on the market has changed in recent years. Customers are more active than before, i.e. they started to actively co-create value, so they stopped being passive to the purchase process. Organizations that make appropriate use of the increase in customer activity can count on large benefits for the company. One of the methods to increase competitiveness is continuous introduction of new technologies based on the Internet, which recently resulted in easier cooperation between customers and suppliers, making and settling transactions, coordination of orders in the supply chain thanks to e.g. solution supporting electronic exchange of EDI documents. Therefore, the development of information and communication technologies has significantly influenced the development of organization through its improvement. This paper presents the importance of new technologies for the customer that improve the process of its service in a selected clothing sales network in Poland.

Keywords: new technologies, customer, improvement, quality of service, questionnaire surveys