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PRICING IN THE WIRELESS TELECOMMUNICATION COMPANY

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ЦЕНООБРАЗОВАНИЕ В ТЕЛЕКОММУНИКАЦИОННОЙ КОМПАНИИ
СОТОВОЙ СВЯЗИ

The methodical basics of pricing of wireless communication services are considered. As a result of the performed calculations, a monthly fee and a time rate payment are determined.

TELECOMMUNICATION. WIRELESS SERVICES. PRICING. SERVICE FEE. TIME RATE PAYMENT.

Рассмотрены методические основы формирования цены услуг сотовой связи. В результате проведенных расчетов определены величины абонентской и повременной плат за эти услуги.

ТЕЛЕКОММУНИКАЦИИ. УСЛУГИ СОТОВОЙ СВЯЗИ. ЦЕНООБРАЗОВАНИЕ. АБОНЕНТСКАЯ ПЛАТА. ПОВРЕМЕННАЯ ПЛАТА.

A rapid development of information and communication technologies has molded the most perspective ways on the market of information services. In the order of significance, they are: mobile wireless telecommunications, internet, broadband communications (stationary and mobile), stationary telecommunications. It should be pointed out that stationary telecommunications is in downtrend now. Taking into account that wireless telecommunications has become the major service provided, pricing in this sphere seems to be of importance.

The principles of pricing in telecommunication services are:

- orientation on the market situation while maintaining a competitive level;
- affordability (attracting new clients);
- clients' loyalty;
- flexibility in various stages of the services' lifecycle.

While pricing, the main pricing factors that influence the costs of a service, should be taken into account. They can be divided into technologic, economical (both external and internal) and sectoral factors. The set of factors, influencing the price of wireless communication services is represented in Fig. 1.

The well-known pricing model consists of the following stages:

- determination of the firm's goals;
- demand analysis;

- costs analysis;
- competitors' prices and products analysis;
- methods of pricing analysis;
- the final price determination.

This pricing method has been adjusted for a wireless telecom operator on the Fig. 2.

The first stage – requirements and goals of pricing

In the worldwide practice one can point out three main goals of pricing that are applicable to a telecom company:

- profit maximization;
- sales maximization;
- market stability.

In a case when managers of a telecom company are primarily concerned with boosting up sales, building up a reputable brand name, increasing the market share, a policy of price penetration seems to be applicable. The policy suggests setting up of reduced prices during the initial period, i. e. pursuing pricing competition. For profit maximization, one can set up prices with a high-level profit margin provided that the market condition and the services quality gives an opportunity of sustaining such a price. This may not be used any time as many factors may appear obstacles – new competitors on the market, when maintaining the sales volume is of importance. If the telecom company is not a monopoly or oligopoly and operates as a price-taker, it will maximize profits through varying sales volumes.

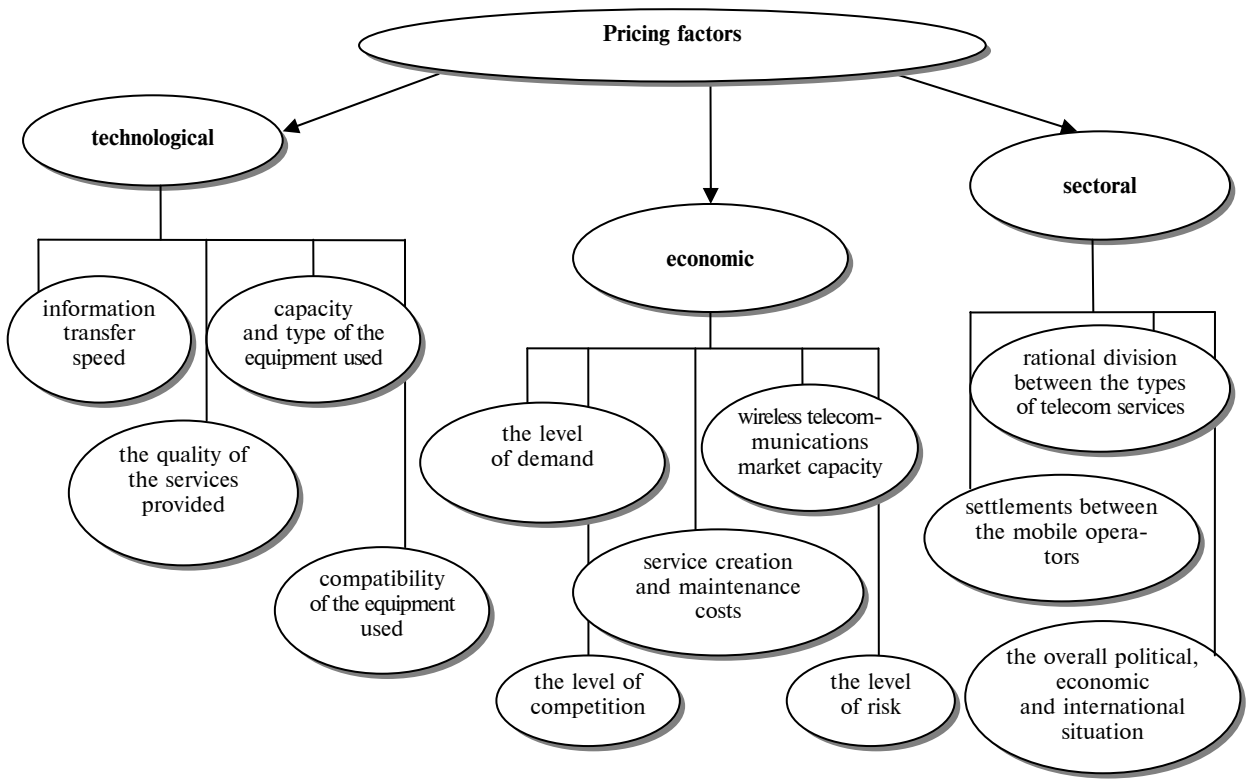


Fig. 1. The major pricing factors concerning the wireless telecommunication market

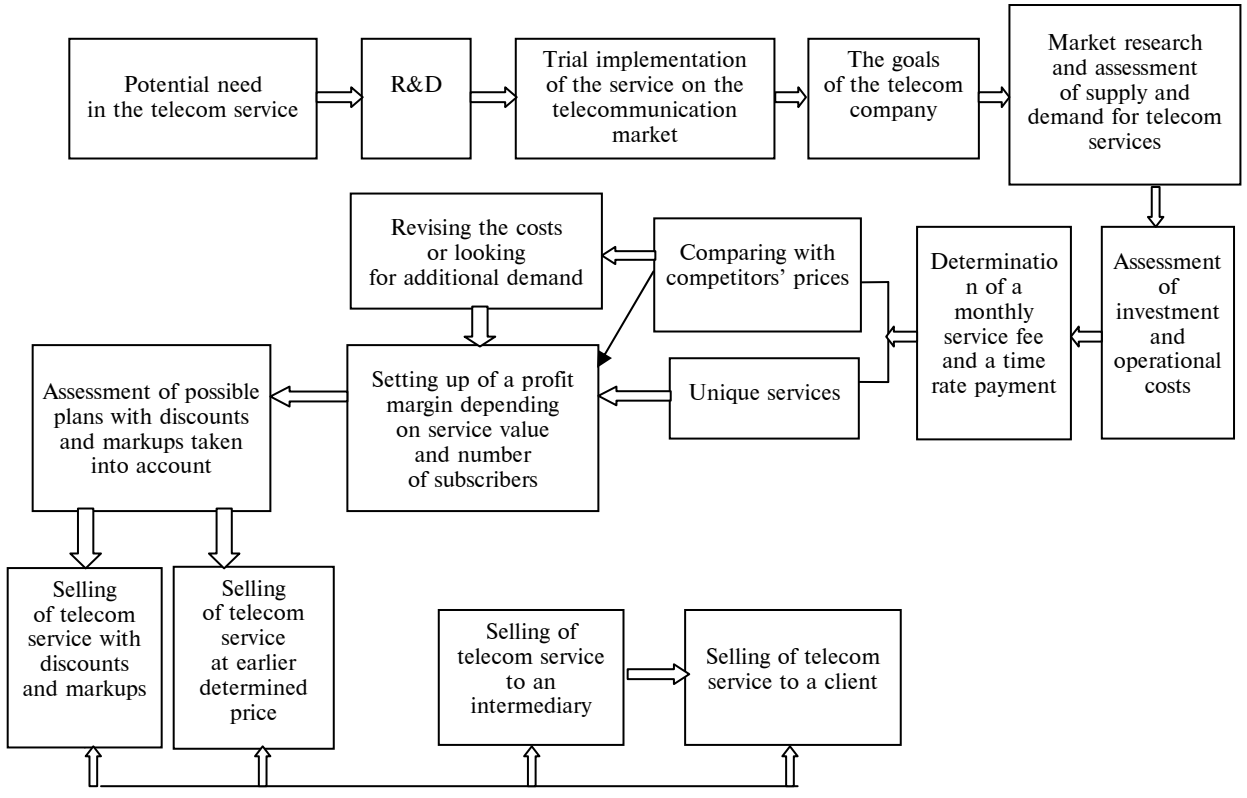


Fig. 2. The diagram of wireless telecom pricing

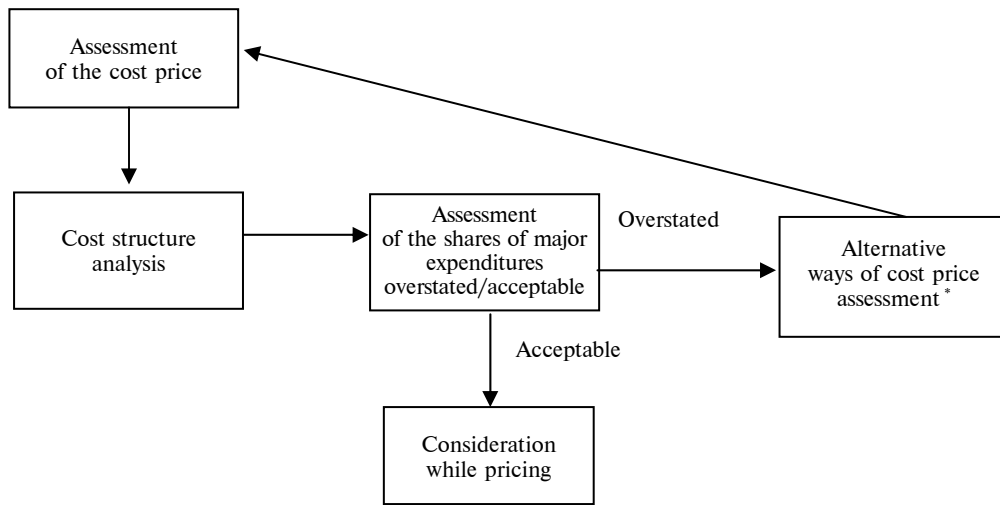


Fig. 3. The stages of telecom services cost analysis

* Selection of other suppliers of equipment and accessories is carried out

The pricing policy focused on stability, say, of assortment of the provided telecom services, is very widespread. The introduction of new services increases the level of risk for a telecom company and requires large-scale investments. Consequently, sometimes it is much more reasonable to extend the lifecycle of the existing services by using a discount system.

The second stage – demand analysis

Demand means the volume of services that can be purchased during a certain time period at a certain price provided all other factors stay unchanged. The demand dependence of external and internal factors can be expressed in the following way:

$$Q_d = f(P, P_s, Y, A, D, R, T);$$

$$Q_d = b_1P + b_2P_s + b_3Y + b_4A + b_5D + b_6R + b_7T,$$

where P – the price of the telecom service; P_s – the price for a substitute service; Y – customers’ income; A – advertising of this telecom service; D – number and age structure of the customers; R – interest rate on consumer credit; T – characteristics of consumer tastes; b_1 – b_7 – the coefficients of demand elasticity of consistent factor.

The demand analysis determines the needed production volumes for the provided telecom services.

The third stage – costs assessment and looking for the ways of their reduction

The reduction of the cost price leads to higher profits from each telecom service traded

and facilitates the choice of financing schedule, while minimizing debt service.

Cost analysis for telecom services production and selling could be fulfilled according to the diagram in Fig. 3.

The analysis of the telecom services cost structure allows to estimate a share of each cost type in total. It becomes evident which elements determine the cost price, and which can be cut. It should be mentioned that fixed costs constitute approx. 92 % in the telecom services cost structure.

Having assessed the costs that determine the lower price boundary, one can estimate the initial price for the telecom service. This price affects the overall profit, economic efficiency of the production and, finally, the living standards of the society. The price for the telecom services depends on demand and supply, the volume and assortment of services provided, the costs of production and circulation and the number of intermediaries. For each participant of the producer-customer chain, the price includes the costs of service itself, the costs of marketing and the added value at every stage. The price, the costs and the profit are related in an equation:

$$W_p = \sum_{i=1}^N q_i z_i - \sum_{i=1}^N q_i p_i,$$

where W_p – profit from the telecom services traded; q_i – quantity of type i telecom service; z_i – price of type i telecom service; p_i – cost price of 1 unit of type i telecom service.

Pricing strategies

Competitive	Differentiated pricing	Assortment pricing
Market penetration strategy	Discount on the second market strategy	«Set»-strategy
«Cream skimming» strategy	Periodical discount strategy	«Kit»-strategy
Neutral strategy	Random discount strategy	Cost-plus strategy
Pricing strategy according to the implementation curve		«Image»-strategy
Pricing strategy of signaling		
Geographical pricing strategy		

While pricing the breakeven sales volume is taken into consideration, where the total revenue equals the total costs. To determine the breakeven sales volume, we can use the breakeven production point method (BEP).

The minimal price can be calculated based on the costs with the following formula:

$$P_{\min} = C / (1 - R),$$

where C – the cost price of the service; R – the minimal acceptable profit margin in the price.

The calculated initial price specifies a possible market entry strategy. The pricing strategies known in the international practice are presented in Table.

The initial price on the telecom services' market is usually set at a relatively high level, i. e. these companies follow the «cream skimming» strategy. This price is stipulated by high expenditures. As the demand on the service expands and the number of clients grows, the price usually goes down because of decreasing marginal costs.

The choice of the strategy can't be made without fulfilling *the fourth stage of pricing – analysis of competitors' products and prices.*

The level of competition on the wireless telecom market depends on many factors. Among them is the number of mobile operators in the region, their characteristics (supported wireless technology, federal or regional operator), their marketing strategies (entry to the market, preserving of the market share, redivision of the market, etc.), the progress the wireless communication market has made so far in the region (inception, upsurge, maturity, etc.) and a general economic situation in the region.

The level of competition on the wireless communications market has direct influence on the penetration degree in each region.

The fifth stage – the pricing method

One of the most popular pricing method is called cost-plus pricing. According to it, the price consists of three elements:

- variable costs per unit;
- average fixed costs (overheads);
- marginal profit.

The application of the method implies the use of the most appropriate profit margin and the justification of the profit margin within the selling price, which should reflect the influence of all major factors on the telecom company. One of the methods used in the cost-plus pricing is the determination of the price using a profit-cost ratio standard.

$$P_t = C_{1t} (1 + R),$$

where C_{1t} – expenses of the production and selling of telecom services in period t ; R – profit margin.

Because of shorter pay-back times for the investments, it is recommended to use a unified profit margin, calculated in relation to the total costs of production.

The calculation of the price according to the cost-plus method is only the first step of the price determination. The type of the service provided can lead to some price corrections reflecting political, social and economic factors. As a result, a mutual subsidizing system appears. One can talk not only of mutual subsidizing between separate services, but also between groups of clients. As a rule, this process goes at the expense of the so called business segment.

The system of mutual subsidizing is needed at some stage, where the wireless communications' development level doesn't match the socio-economic requirements, where economic interests of mobile operators and social interests go apart, while the state plays an important regulatory role on the market.

The economic approach to pricing of the telecom services is primarily concentrated on the price as a function supply meets demand. The needed amount of services will be determined by multiple variables, including price, a possibility of making choice, consumers' income, prices of other goods and services (including the service substitutes), future expectations, taxes, advertising and affordability of credit. A research shows that, nowadays, consumers (especially from the business segment) pose even higher requirements on the quality and versatility of possibilities offered by the telecom services than on the price.

The optimal combination of market forces is when supply meets demand. The equilibrium price gives some certain information to the producers. A change in the equilibrium price is a sign to change output volume and to look for better technology. The demand curve can shift to the right due to the increase in consumers' income, or inflation expectations as well as changing fashion or political circumstances, or even due to population changes.

It means that, under this approach, the main thing is to find the equilibrium price. Under real market conditions, pricing is based not on optimizing methods, but primarily on gradual search (with a lot of unknown data) of the acceptable price. The market approach to pricing of services may depend on the type of market competition or on market segmentation (different clients may pay different prices for the same service). The calculation of the consumer-oriented price could be based on expert estimations and customers' survey.

In practice, wireless telecom companies set a price which secures economic viability, i. e. the price that covers all the expenses of the company both in the short and in the long run, and maximizes the profits. In order to increase the price competitiveness, the price which customers are ready to accept is also taken into consideration. In other words, the cost-plus pricing is combined with demand-oriented pricing.

The sixth stage – final price determination

While determining the final price, one important price-correcting factor is to be analyzed. That is the system of discounts and markups.

Trading discount – a certain percentage of the selling price.

$$P_c = P_p / (1 - M_{sp}),$$

where P_c – the selling price of the service traded; P_p – the price actually paid for the service; M_{sp} – trading discount in decimal points.

Trading discounts can be used not only by mobile operator, but also by its subsidiaries in order to attract new clients. Discounts on the wireless telecom market may also be caused by growing competition. The discount level shouldn't affect the gross profit indicator negatively (the latter can be even larger because of the increased number of services sold).

Service quality accounting

One of the possible ways of service quality accounting is the use of a quality coefficient? That can be defined as a percentage of the service selling price or a percentage of service fee.

$$P_1 = PK_k,$$

where P_1 – the final price; P – the initial price; K_k – quality coefficient, percentage of the price.

This approach is however subjective and approximate because the same quality improvement can be estimated differently in telecom companies, so this quality coefficient, calculated through expert estimations, can vary.

If the company is unable to provide the service with the quality stipulated by the contract (equipment failure or unstable connection, failure of information transfer), the service price is to be lower. The percentage of this price corrections is set by the contract.

Price elements in wireless communications

The base price for wireless communications is the sum the client must pay for the first month. It can be defined as a single payment for the network access and a monthly service fee. This sum is not affected by the call duration:

$$P_2 = P_l + P_A + P_p,$$

where P_l – single payment for network access; P_A – the service fee; P_p – payment for the calls made or for the information downloaded (time rate payment).

The payment for the next month is simply the service fee plus the time rate payment.

$$P_3 = P_1 + P_A .$$

Here the service fee can be calculated as a ratio of the total cost for producing and selling of the telecom services that constitutes the service fee to the number of clients.

$$P_A = C_2 / Q ,$$

where C_2 – the total cost for producing and selling of the telecom services that constitutes the service fee; Q – the number of clients.

The time rate payment is determined as a ratio of the total cost that constitutes the time rate costs including profit margin to the total duration of the calls for the period

$$P_{\min} = \frac{C_1 R + C_3}{Q_{\min}} ,$$

where C_1 – the cost of producing and selling telecom services; C_3 – the total cost of the telecom services in terms of duration of the services provided; Q_{\min} – total duration of the calls for the period; R – the profit margin.

Increasing the capacity of the equipment needed by the expanding telecom market leads to an increase in service production and selling expenditures because of an increase in depreciation, maintenance and service costs. The latter means peak wise increase in the service fee. Thus, the service fee tends to decrease during the initial period t where the number of clients is at a certain level (say, 1000). Later on, the expansion of additional capacities makes the service fee

larger, but the increase is not as high as in period $t - 1$ because of a larger customer base.

It means that the service fee decreases not gradually, but in spurts. Managers of a telecom company may modify the level of a service fee and a time rate payment, whereas a redistribution of costs between the payments is also possible. Finally, the managers' choice determines the profit margin and is dependent on the overall market situation. While determining the service fee, the operator may use at least 4 variants with each additional 1000 clients: maximal service fee level, intermediate service fee level (the mean level), minimal service fee level, and the real service fee level which fluctuates constantly.

The research shows that the telecom services pricing can involve well-known methods supplemented by the stage approach typical of this branch. This concerns the distribution of the price between two major elements – the monthly service fee and the time rate payment. It also involves the dynamics of these elements under the influence of pricing factors, the number of clients (the level of demand), and the technical level of the provided service. The service fee has certain peak values that are stipulated by the growing scale of production. However, the monthly service fee increase seems to be insignificant with a large number of clients. The service fee reflects expenditures (in per client terms) of a telecom company that ensure the normal functioning of the whole wireless communication system. These expenditures contain depreciation, maintenance, energy casts, payment of wages and overheads. The time rate payment reflects other costs not included in the monthly service fee.

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