parking lots and places to go. Gradually the U.S. auto market matured, meaning that it leveled out, thus stabilizing the rate at which we added vehicles to stocks.

The story of many mass-produced items roughly parallels that of automobiles. Refrigerators are mature, personal computers are in the same cycle. Americans became accustomed to product-centered growth sprees with few aftereffects. Another new technology, another whoopee on the roller coaster. They can no longer bury problems under fresh economic growth, leaving their mess behind. In the information wave computer technology is profoundly transforming agriculture, industry, and everyday life, just as industry radically transformed agricultural societies several centuries ago.

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ALGORITHMS FOR SOLVING LOGISTICS PROBLEMS UNDER CONDITIONS OF UNCERTAINTY

Decision-making under conditions of uncertainty is a decision-making process characterized by the multivariate development of events and the possibility of unforeseen situations. The task is to find a vector of target variables that satisfies the imposed constraints and optimizes a vector target function that forms a system of criteria and interdependent characteristics. The multi-criteria problem of mathematical programming is modeled on their basis. In this case, it is difficult to find a solution that satisfies all the conflicting criteria and the system of constraints. In general, the optimization logistics problem has the following form**:**

$$\begin{cases} y = f(x) \to max\ (min) \\ x \in X \end{cases},$$

where X is the set of admissible plans (alternatives, actions, previous variants of logistical solutions); f – a numerical function defined on a set X, which together with the maximization or minimization requirement is called the target function.

The solution of the optimization logistic problem is formed by the pair X^*, y^*, where X^* is the set of optimal plans, y^* is the optimal (maximum, largest or minimum, smallest – depending on the optimization orientation) value of the objective function, which is achieved by it on the set of admissible of plans X. Usually limited to a partial (rather than general) solution of the problem, determining only one among the set of optimal plans, and not the whole set.

They find a solution to the optimization logistics problem using special mathematical methods of optimization, computer programs and computer tools based on the appropriate source information.

An arbitrary optimization logistic problem contains two components: an objective function and constraints. The objective function formalizes the criterion of optimality, according to which the best one is determined among alternative options of logistics solutions. Constraints, on the other hand, define a set of acceptable alternatives. Constraints are given in the form of inequalities and/or equations.

Examples of optimization logistics tasks are the following:

- formation of a better economic plan for transportation of products, raw materials or other production resources from suppliers to consumers – directly or through certain distribution centers;
- determination of the maximum carrying capacity of the transport network;
- determination of the cheapest transport route between two specified points of the transport network;

The type of problem (linear, nonlinear, discrete) determines the methods that will be used to solve it, namely:

- linear programming (simplex method, dual simplex method, others);
- integer programming (methods of segmentation, branched search, combinatorial, heuristic, random search);
- non-linear programming (direct, indirect; design, linearization, etc.);
- others (depending on the specifics of the problem being solved).

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MODERN RESEARCH IN THE FIELD OF SOCIO-ECONOMIC SCIENCES AND INFORMATION TECHNOLOGIES

In the modern world, socio-economic sciences and information technologies are interconnected and complement each other. The use of information technologies in socio-economic research makes it possible to increase the speed and accuracy of data collection and analysis, which allows making more reasonable conclusions and recommendations.

One of the main advantages of using information technologies is the ability to cover a much larger amount of data, which allows for a more comprehensive and thorough analysis of socio-economic processes and phenomena. The use of artificial intelligence and machine learning in the study of socio-economic processes makes it possible to predict the development of the situation in the labor market, in the market of goods and services, which helps to increase the efficiency of decision-making.

The use of information technologies in socio-economic research is a necessary component for increasing the competitiveness of enterprises and countries as a whole. Research conducted using information technologies can become the basis for the development of innovative products and services, which can contribute to increasing the profitability of enterprises and raising the standard of living of the population.

However, the use of information technology in socio-economic research can create certain challenges and problems, such as: