HIERARCHICAL MODILING.

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Introduction. Very often management problems have several solutions. Often, choosing one solution from the set of possible ones, the person making the decision is guided only by intuitive ideas. As a result of this decision-making is of an uncertain nature.

The relevance and practical importance. The Hierarchy Analysis Method is used to make decisions in a variety of situations. Allows you to intelligently and rationally structure a complex decision-making problem in the form of a hierarchy, compare and quantify alternative solutions.

Aim. Buying an e-shop from two proposed options A and B.

Materials and methods. MAI is a procedure for the hierarchical representation of elements that determine the essence of the problem. MAI stages:

1. Statement of the problem.

2. Building a hierarchy.

3. The construction of a set of matrices of paired comparisons for each of the lower levels - one matrix for each element of the layer adjoining from above.

The task is to select a DI shop from two proposed options A and B (in the presence of more options, the problem is easily reduced to their pairwise comparison).

At the top level of the hierarchy is the goal - the purchase of an electronic store. At the second level, the criteria specifying the purpose for which systems can be compared (the criteria proposed below are considered as examples) are:

1. Cost.

2. Terms of purchase.

3. Accompanying the developers.

4. User interface.

5. Provided functions.

The matrix of pairwise comparisons for the second level of the problem of buying an electronic store

	Cost	Terms of purchase	Accompanying developers	User interface	Functions provided
Cost	1	4	7	9	2
Terms of purchase	1/4	1	3	8	1/2
Accompanying developers	1/7	1/3	1	3	1/4
User interface	1/9	1/8	1/3	1	1/5
Functions provided	1/2	2	4	5	1

Matrices of pairwise comparisons for the third level of the problem of buying an electronic store

Cos	А	Б
А	1	1/7
Б	7	1

Terms of purchase	А	Б
А	1	1/2
Б	2	1

Accompanying developers	А	Б
А	1	1/5
Б	5	1

User interface	А	Б
А	1	1/3
Б	3	1

Functions provided	А	Б
А	1	1/6
Б	6	1

Global Priorities for A and B Stores

Store evaluation parameter	$\|L_i\|$	$\|L_{iA}\|$	$\|L_{iБ}\|$
Cos	0,48	0,88	0,13
Terms of purchase	0,17	0,33	0,67
Accompanying developers	0,07	0,17	0,83
User interface	0,03	0,25	0,75
Functions provided	0,25	0,14	0,86
Generalized priority G		0,53	0,47

Thus, we get that buying a store A is somewhat preferable to buying a store B.

Conclusions. Similar calculations can be easily carried out for any other set of comparison criteria for electronic stores and for an arbitrary set of compared objects. For calculations, the mathematical functions of MS Excel were used.