Management Decisions in Insurance

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The decision represents the essential factor of the management development, being the specific tool, and designating an action for achieves one or more objectives.
The management decision has one particularity. This particularity is that the management decision represents that decision which has consequences for decisions, actions and the behavior of at least one person. So, we can conclude that the managerial decision always involves at least two persons, namely: the manager – which decide, and one or more persons - which apply the decision.
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The management decision affects directly the group, influencing the individual behavior, actions and results. For the conception of the decision is important to consider the characteristics of each person on training, interest and motivation, and who this can be modified.

In insurance, the management decision affects the departments and the employees of the insurance company, but affect and the group from which the company take part.

For example, on 6 august, Asiban Insurance was bought by Groupama Insurances. This French financial group holds and the companies BT Insurance and OTP Garancia Insurance. All managerial decision taken by the manager of Asiban, affect directly Groupama Insurance and indirectly BT Insurance and OTP Garancia. Actually, any managerial decision taken in one of this companies affect the other companies from the financial group. On 25 January 2008, the Board of Administration decided an increase of the Cash net premiums with 30% for all company, and for each branch. Each branch will be spreading the cash net premiums at the agencies, which are subordinated. Also, the Board of Administration decided that:

• the car insurance class should not exceed 45% from portfolio
• the motor vehicle liability insurance class should not exceed 25% from portfolio
• the portfolio of each branch should be composed of a minimum 7 class of insurance.

In the situation in which where are required only an increase of the cash net premiums with 30% for all company, compared to net premiums earned in the previous year, the largest share of the entire portfolio will be car Insurance, taking into account the financial result. But in this new conditions, director of the branch Unirii plan annually distributed as follows:

No. Crt	Insurance class	The plan of the cash net premiums	The share of the class in portfolio
1	Life insurance	330.769,50	2,53
2	Accident and sickness insurance	7.220,88	0,06
3	Health insurance	1.320,00	0,01
4	Car insurance	5.888.566,21	45,00
5	Rail insurance	0,00	0,00
6	Aircraft insurance	0,00	0,00
7	Shipping insurance	0,00	0,00
8	Goods in transit insurance	373.304,13	2,85
9	Fire and natural calamities insurance	2.576.450,70	19,69
10	Damage to property insurance	209.727,48	1,60
11	Motor vehicle liability insurance	3.271.425,67	25,00

12	Insurance for air transport	0,00	0,00
13	Civil liability insurance for maritime transport	0,00	0,00
14	General liability insurance	276.477,08	2,11
15	Credit insurance and guarantees	0,00	0,00
16	Insurance financial loss	75.772,20	0,58
17	Travel insurance	74.668,85	0,57
Sum		13.085.702,70	100,00

Asiban Insurance – Unirii Branch has concluded a tripartite contract with Omega Insurance Broker and EFG Eurobank Leasing IFN, for 01.03.2006-01.03.2009. In this contract it is set that the policies made by EFG Eurobank Leasing IFN for user FMS, commission will be made by Omega Insurance Broker. In the case of car insurance class, the grid commission is:

Net premiums earned/ months	Commission percentage of revenue
until 150 000	10,00
250 000	12,00
350 000	14,00
450 000	16,00
over 450 000	18,00

Under the new conditions Asiban – Unirii Branch has concluded a partnership with another company in the group, OTP Garancia Insurance – Bucharest Branch. The protocol stipulates that where ASIBAN – Unirii Branch cannot meet demand of EFG Eurobank Leasing IFN, will redistribute the policies to the OTP Garancia Insurance – Bucharest Branch for a higher fee of 1% above the grid of Omega Insurance Broker.

The contract signed with Omega Insurance Broker SRL provides that if the broker does not cover the insurer bid, it will be penalized by subtracting commission with 1% to the original grid commission, for each difference of 100 000 lei.

The evaluation is done in light of the outcome of the sale.

Unirii Branch must choose one of following:
- The first variant – subscribe insurance policies with a total net premiums earned up to 150 000 lei
- The second variant - subscribe insurance policies with a total net premiums earned up to 250 000 lei
- The third variant - subscribe insurance policies with a total net premiums earned up to 350 000 lei
- The fourth variant - subscribe insurance policies with a total net premiums earned up to 450 000 lei

The branch cannot accept to subscribe insurance policies which have a sum more then 450 000 lei total net premiums earned, because they exceed the monthly plan.

According to the tripartite contract, can determine the following state of nature:
- The first state of nature – demand of insurance policies with a total net premiums earned up to 150 000 lei
- The second state of nature – demand of insurance policies with a total net premiums earned up to 250 000 lei
- The third state of nature - demand of insurance policies with a total net premiums earned up to 350 000 lei
- The fourth state of nature - demand of insurance policies with a total net premiums earned up to 450 000 lei
- The fifth state of nature - demand of insurance policies with a total net premiums earned up to 600 000 lei.

Decisional matrix is:

	N1	N2	N3	N4	N5
V1	135000	133000	131000	129000	127500
V2	136500	220000	216000	212000	208500
V3	138000	222500	294000	295000	289500
V4	139500	225000	308000	378000	370500

To determine the best option we can apply decision-making criteria in terms of uncertainty.

Applying the criterion of Wald, called crite-

rion pessimistic, obtain the following result:

$$\max_i \min_j V_{ij} = \max_i \begin{bmatrix} 127500 \\ 136500 \\ 138000 \\ 139500 \end{bmatrix} = 139500\ lei \cdot$$

According to the criterion of Wald, the best result is that of the 4th option.

Applying the criterion of Hurwicz, called criterion optimistic, obtain the following result:

$$\max_i \max_j V_{ij} = \max_i \begin{bmatrix} 135000 \\ 220000 \\ 295000 \\ 378000 \end{bmatrix} = 378000\ lei \cdot$$

According to the criterion of Hurwicz, the best result is that of the 4th option.

Applying the criterion of Savage, called criterion regrets, obtain the following result:

$$r_{ij} = \max_i V_{ij} - V_{ij}$$

$$r_{ij} = \begin{bmatrix} 4500 & 92000 & 177000 & 249000 & 243000 \\ 3000 & 5000 & 92000 & 166000 & 162000 \\ 1500 & 2500 & 14000 & 83000 & 81000 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\min_i \max_j r_{ij} = \begin{bmatrix} 249000 \\ 166000 \\ 83000 \\ 0 \end{bmatrix} = 0.$$

According to the criterion of Savage, the best result is that of the 4th option.

Applying the criterion of Laplace, called criterion insufficient grounds, obtain the following result:

$$\max_i \left(\sum_j \frac{1}{n} V_{ij} \right) = \max_i \begin{bmatrix} 131100 \\ 198600 \\ 247800 \\ 284200 \end{bmatrix} = 284200.$$

According to the criterion of Laplace the best result is that of the 4th option.

Applying the criterion of average-variation, obtain the following result:

$$M(V_1) = 131000 \qquad D(V_1) = 7500$$
$$M(V_2) = 198600 \qquad D(V_2) = 83500$$
$$M(V_3) = 247800 \qquad D(V_3) = 157000$$
$$M(V_4) = 284000 \qquad D(V_4) = 238500$$

The first rule of this criterion may not apply, because

$$M(V_1) < M(V_2) < M(V_3) < M(V_4) \text{ and }$$

$$D(V_1) < D(V_2) < D(V_3) < D(V_4).$$

Applying the second rule, obtain:

$$\frac{M(V_1)}{D(V_1)} = 17,46 \qquad \frac{M(V_3)}{D(V_3)} = 1,58$$
$$\frac{M(V_2)}{D(V_2)} = 2,38 \qquad \frac{M(V_4)}{D(V_4)} = 1,19$$

It notes that $V_1 \succ V_2 \succ V_3 \succ V_4$. Therefore, according to this criterion the preferred option is the first one.

In this situation, the expected earnings (average) and the risk (variation between the best and the least good option), lead to the preferred solution. From this point of view, the first option is less risky, because it leads to the biggest expected earnings for a given risk assumed. But the decision is the one who decides, according to his inclination to the risk.

So, as we see version 4 is the best for the most criteria. Concluding, is the ideal situation that the intermediary to cover the exact needs of the branch, to bring the net premiums collected as close to monthly plan.

In most situations, the manager does not provide a range of information. This information can be essential, because the objective of determining the probability on possible results is difficult to achieve.

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