THE USAGE OF THE PALISADE PROGRAM PACK IN THE PROCESS OF SUBSTANTIATION AND ADOPTION OF DECISIONS

Cristian VASILE, Asist., Drd.
University of Craiova

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Abstract: In the actual society of knowledge, the impact of the new informational technologies was extended even in an important domain of human activity: the adoption of decisions.

The necessity of objecting at the selection process of the most favorable decision lead to the extension of the usage of information technology also in the conceptual phase. The decision tools suite (DTS) and the expert systems have the answer for the computer science workers at the needs of the deciders, used especially in the case of the decisions adopted in conditions of risk or uncertainty.

The PALISADE package of programmers is a support system of decisions, which overlaps the processor tables, increasing the possibility of usage, especially for simulation problems, calculating the risk, building decision trees etc.

At the rank of companies, usually the informatisation included the routine, the calculus and the editing activities, etc. In consequence, in preparing the decision the information technology was used especially for obtaining and for systematization of the information necessary for the substantiation process of the decisions, the adoption decisions process remaining just a manager attribute and depending in a big part of experience, of intuition and of other human qualities of this. [Splivalo David, 2006]

DTS (The Decision Tools Suite) PALISADE is a pack of programs which was designed to work with Microsoft Excel application (the Excel programs bare of commands completes itself, with peculiar commands after installing PALISADE pack), so it can admit the prosecution of complexes analyses and, than, to allow taking optimal decisions on the base of these prosecution analyses.

The package DTS (The Decision Tools Suite) brings together the following components:

1) @RISK
2) TopRank
3) Precision Tree
4) Risk Optimizer
5) Best Fit
6) Risk Accelerator

These modules from DTS they were designed so that it can work together and to be activated from a bare of commands available in the superior menu of Microsoft Excel application. All those modules mentioned have interface, menus and compatible buttons bares Microsoft Excel (figure 1).

Each component from the DTS pack can realized an analyze of a certain type of data and exist information in a Excel page, by combining those analyses it can take very

precise decisions connected whit the process or phenomenal studied at that moment. [Schwanebeck Allison, 2008]
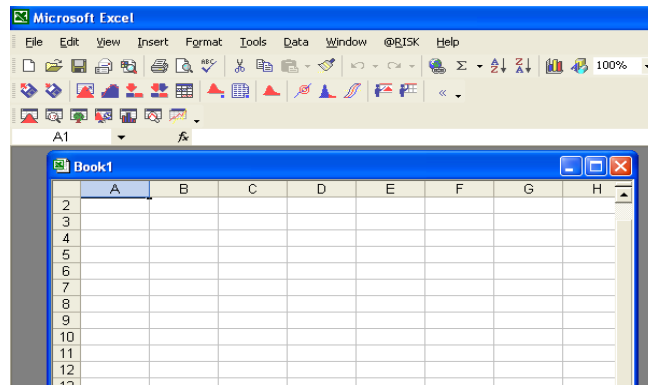

Fig. 1

Further we will try to present few details about the most important work modules which form the DTS pack. [Parish Wendy, 2007]

The module @RISK

It admits the analysis of the risks which can appear in a phenomena and a studied process according to the already existing information in a ".xls" file, so it helps us to identify the new opportunities of work, or to avoid the possible errors and traps which can appear during the progress of this process or phenomena. For this it is filled in the available dates in the Excel document that have attached even the module @RISK with the adequate functions, it is used the information considered sure for selecting a certain type of function which will be used to evaluate the risk, then to activate the module of simulation of the calculation risk and in the end it can be used the options of graphic presentation with the aim of presenting more clear the obtained results.

The TopRank module

It permits the quick determination of the risk factors (the critical factors) from the studied process by taking into account of the all available dates in the current sheet of the Excel document. So the TopRank module allows the crossing of the all dates introduced by the operator in the sheet and according to these allows the identification of that cells which affects the most wished evolution of the studied process and phenomena and then classifies and places these elements of risk in distinct statitic reports of different forms or in easy understanding and interpreting graphics for the beneficiarys.

Precision Tree module

This module form DTS pack allows the user, that according to the accomplished analyses with the dates and information available in the sheet, to display as a tree of decisions what it is wanted to be done in that process or phenomena and why. So we can say that the tree of decisions allows the visualisation of some midsequent of events in function of the decision that will be adopted by the user.

After how we see, the DTS modules pack permits the calculation and the simulation of the risks by the support of the Microsoft Excel application. We can to distinguish here that the Decision Tools Suite is compatible with Excel versions 2000 through 2007. The @RISK simulations are calculated 100% within Excel, supported by Palisade sampling and statistics proven in over twenty years of use. Palisade does not

attempt to rewrite Excel in an external recalculation to gain speed. Palisade harnesses the power of multiple CPUs and multi-core processors to give you the fastest calculations.

Further we will try to present in detail how work the @RISK module.

Utilization of the @RISK module

The execution and examination of the available data and information with the support of the @RISC module from the DTS package presume the crossing of the following stages:

1) the insertion of data and initial information in the Excel calculation page, corresponding the process or phenomenon that will be studied (figure 2). The following exemplification has make at a students group, by starting of the obtaining previous results we can to try what results will be obtain in the follow session.

Fig. 2

2) there will be defined the inputs and outputs that will come under the computation process of the risk and which will be further/ulterior analyzed inside of this application. It s activated the option „Start @RISK" if this module wasn't already activated from the vertical menu which is display by pressing "Start", and from the displayed window we activate „Enable Macros" button (figure 3).
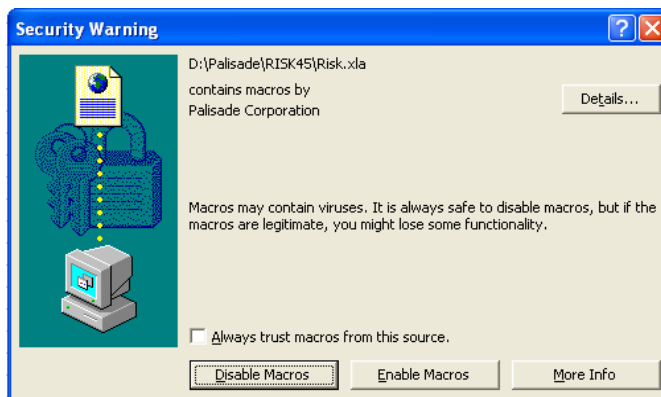

Fig. 3

The definition for the entries of the corresponding data of the process or of the studied phenomenon is made like this:

a) we select the suitable cell of that value which will be studied as an entry size for that process. This value will be that value which will affect in a certain way the exit

which correspond to that process or phenomenon we have studied. For the example presented, we shall considerate the cells corresponding to the students' marks to be sizes of entry. For example, we shall select the B2 cell.

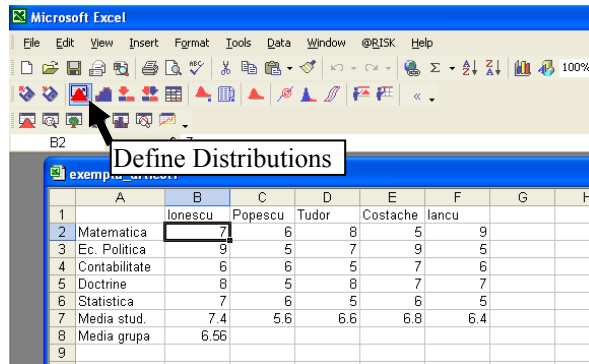b) we activate "Define Distributions" (figure 4)

Fig. 4

c) in the displayed window there are chosen different properties of the distribution of the respective size of entry (the type of the distribution, the central or medium value, the distribution base etc.) as in figure5
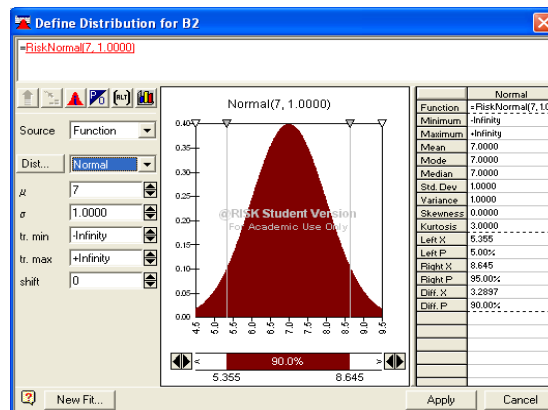

Fig. 5

d) we activate "Apply".

Through outputs we understand that size from the process which we want to follow because it represents a final result, to which the values corresponding to inputs participate. We define the outputs like this:

a) we select the cell that contains the value which will be studied as size of output from that phenomenon or process. For example we can considerate size of output the means of every student, and also the general mean of the students from that group. For example we will chose as size of output the value from the cell B8.

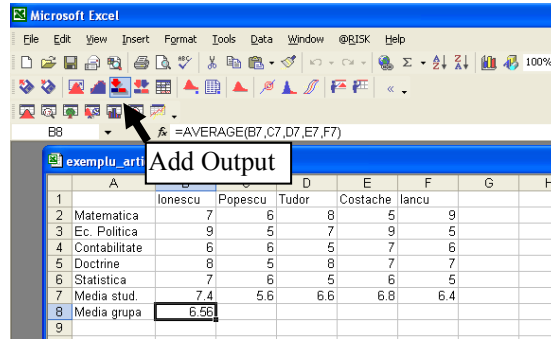b) we activate the button „Add Output" (fig. 6).

Fig. 6

c) if only one cell was selected then we will name that output, and if a group of cells was selected we will name that domain of output from the displayed window and through a click we activate the button "OK"(fig. 7)
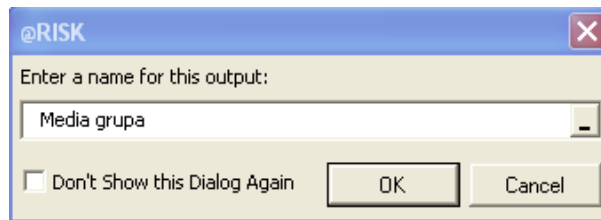

Fig. 7

The display of a list of outputs and inputs previously defined for that process or phenomenon is made through the button „Display List of Outputs and Inputs" (fig. 8).
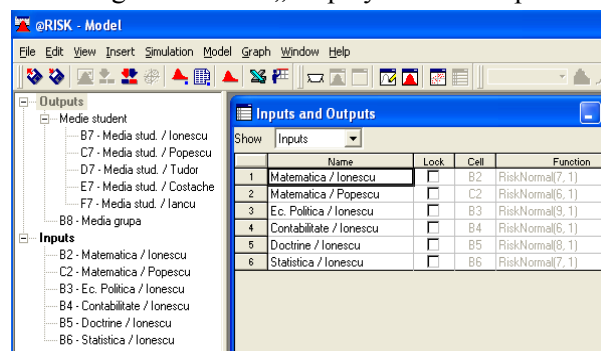

Fig. 8

3) The activation of simulation operation.

To choose the desired options in the phase of simulating a calculus the button "Simulation Setting" is pressed. Then we press "Start Simulation" to effectuate the calculus of simulating the desired process or operation.

From this moment on the modulus @RISK recalculate the data from the given model, every time the program indicates it. Every time @RISK takes randomly the values from the entry defined sizes, attaches them to the model that is being studied and registers the output results. (figure 9)

	Name	Cell	Minimum	Mean	Maximum	x1	p1	x2	p2	x2-x1	p2-p1	Errors
Output 1	Media stud. / Ionescu	B7	6.407907	7.400676	8.369941	6.606851	5%	8.010102	95%	1.403251	90%	0
Output 2	Media stud. / Popescu	C7	5.053394	5.598903	6.093046	5.263119	5%	5.912511	95%	0.6493926	90%	0
Output 3	Media stud. / Tudor	D7	6.6	6.6	6.6	6.6	5%	6.6	95%	0	90%	0
Output 4	Media stud. / Costache	E7	6.8	6.8	6.8	6.8	5%	6.8	95%	0	90%	0
Output 5	Media stud. / Iancu	F7	6.4	6.4	6.4	6.4	5%	6.4	95%	0	90%	0
Output 6	Media grupa	B8	6.306386	6.559916	6.743547	6.385834	5%	6.698184	95%	0.3123503	90%	0
Input 1	Matematica / Ionescu	B2	4.661205	7.000511	9.662683	5.308453	5%	8.560107	95%	3.251654	90%	0
Input 2	Matematica / Popescu	C2	3.266972	5.994514	8.465228	4.315593	5%	7.562556	95%	3.246963	90%	0
Input 3	Ec. Politica / Ionescu	B3	6.04233	8.994802	11.36006	7.295619	5%	10.58266	95%	3.28704	90%	0
Input 4	Contabilitate / Ionescu	B4	2.950482	5.997441	8.416716	4.292249	5%	7.608167	95%	3.315918	90%	0
Input 5	Doctrine / Ionescu	B5	5.53184	8.000391	10.57217	6.251241	5%	9.603556	95%	3.352314	90%	0
Input 6	Statistica / Ionescu	B6	4.595755	7.010237	10.36018	5.261524	5%	8.559042	95%	3.297518	90%	0

Fig. 9

4) The interpretation of the achieved results and the study of possible risks.

The result of the simulation is an image of the whole possible results, including the variants found at random when simulating the calculus.

According to the attached graphics of these calculated results which can be of different types, we can observe the evolution tendencies of output sizes. Following these observations we can take certain decisions.

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