THE ANNALS "DUNĂREA DE JOS" OF GALAȚI
FASCICLE V, TECHOLOLOGIES IN MECANICAL ENGINEERING, ISSN 1221-4566
2008

The Promotion of a Research Project in the Composite Materials Field Using Microsoft Project Software

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Abstract:

Promoting the researches carried out in the field of composite materials involves a series of specific activities that can be grouped according to the contribution made to achieve the objectives. The Microsoft Project offers a real support for organizing these activities, taking into account their complementarity and allows the exemplifies the real size of the project, as well as allocation of resources necessary for the project activities, which involve the possibilitiy to control over costs. The simulation of the basic features of this software emphasizes the obvious opportunities related to the efficient management of this research project in the field of the composite materials.

Keywords: *composite materials, software, Microsoft Project*

1. Introduction

General considerations regarding the capabilities of Microsoft Project software Microsoft Project is a software which provides many facilities for planning, implementation and evaluation of project management. Its main capability consists into managem a project from its design to its carrying out, emphasizing the following functions:

- keeps the evidence of all the information referring to work requirements, duration and resources allocated to a project;
- visualizes a project plan in standard templates associating Gantt Chart diagrams to the activities involved in the project;
- allows the configuration of main and secondary activities, the configuration of resources and their allocation to the activities, the observation of the over-allocated resources;
- balances the three dimensions of a project triangle: goals, time and costs;
- assures the costs monitoring process, in function of user's specifications;
- allows the visualisation of the critical path, emphasizing the activities that can affect project's deadline.
- allows the information flows exchange between team project members in Intranet system.

2. The configuration of the composite materials promotion project in Gantt Chart approach

Microsoft Project provides the opportunity to organize project's activities in function of their complexity, using "indent" tool which allows the division of main activities in secondary ones. The composite materials promotion project involves three stages, emphasizing two complementary market researches, one at the global level of composite materials and other focused only on the composite materials resulted from the project and the implementation and evaluation of a marketing plan which will be able to promote the competitive advantages of the composite materials.

First stage of this project concerning the promotion of research results in the domain of composite materials has in view to accomplish two goals related to the following activities: the scientific and methodological foundation of the research study on composite materials market and the planning of the market research in composite materials field. (figure 1)

The tasks associated to first goal are seeking to the information gathering, selection and identification of offer evaluation criteria on composite materials market, chosing composite materials' offer reliyng upon certified competences of project's partners and using

multi-criteria models simulation in order to select the best composite materials' offer which will be promoted.

From marketing point of view, we consider that the results of the research project must generate a competitive offer which can be differentiated from other offers on composite materials market. The role of marketing specialists consists in the promotion of differentiation criteria that will facilitate the strategic positioning on composite materials market.

The specific activities referring to the planning of the market research in composite materials field include: the definition of composite materials' market segmentation criteria, target group identification and selection of the tools for market research in composite materials field and the management of the activities associated to the market research planning.

The identification of the segmentation criteria on composite materials market allows to choose the target where will be positioned the relevant offer resulted after the implementation of the research project. The management activities involve the selection of the appropriate market research tools, the project research team building and the allocation of the tasks to each participant as well as the coordination of research activities based on complementary competences.

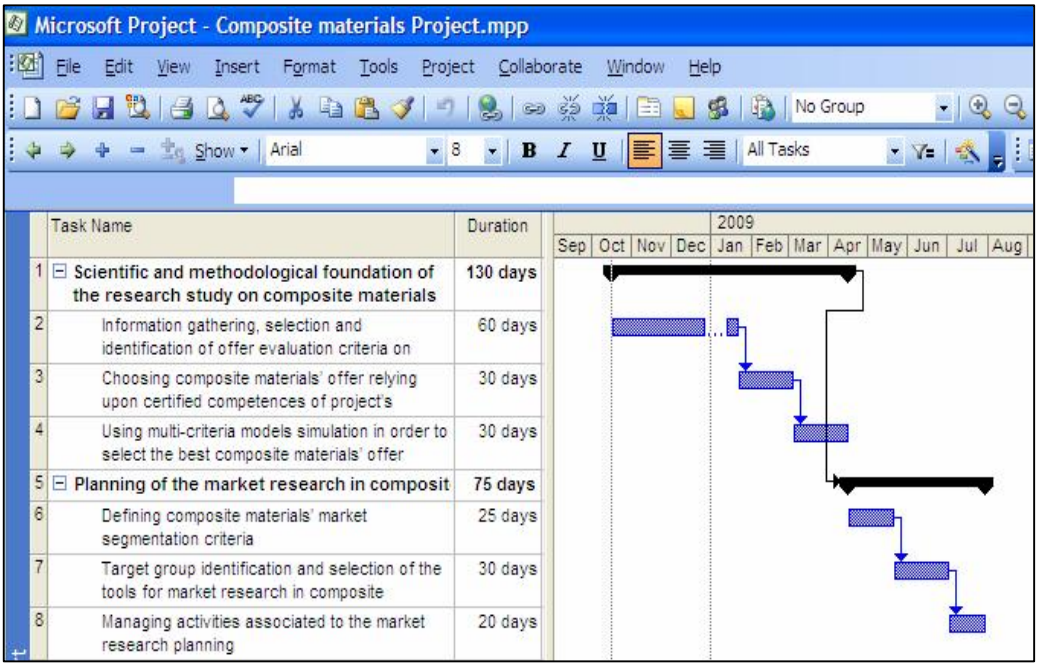


Figure. 1 – *Gantt Chart associated to activities involved in the first stage of the composite materials promotion project*

Second stage of this project concerning the promotion of research results in the domain of composite materials supposes the following three main activities: the auditing process concerning the degree of awareness of composite materials resulted from the project in order to design the relevant offer, the development and promotion of a website in view to increase the visibility of composite materials resulted from the project and the evaluation of perceived reputation of composite materials resulted from the project.

During first activity related to this project's stage, the following tasks must be taken into account: the selection of the tools and techniques of Market investigation for composite materials resulted from the project (questionnaires, focus-groups, semi-structured interviews), the information processing and positioning of composite materials resulted from the project upon the degree of awareness and the dissemination of market research results on target groups.

Unlike the research realized during first stage, which reflects a global vision of the composite materials market, this research strictly refers to the composite materials resulted from the project and has in view the identification of project's results competitive advantages in order to receive an efficient response from the target group.

During the second activity, the following

tasks must be accomplished in order to reveal project's visibility in the on-line environment: the design and the implementation of a website which will promote composite materials resulted from the project, the website promotion via banner-exchange, viral marketing and the optimization of the website in specific search engines.

The website that will promote research results must respect permission marketing principles in view to provide personalized relationships with its visitors (target group – potential customers and investors); banner exchange programs and viral marketing techniques will determine the increase of the traffic on this website.

During the third activity related to this project's stage, we propose the following task list: an on-line research focalized on target groups (potential customers and investors), the participation to international fairs and show-rooms in composite materials domain and the analysis of the feedback resulted from online research and participation to fairs and show-rooms. (figure 2)

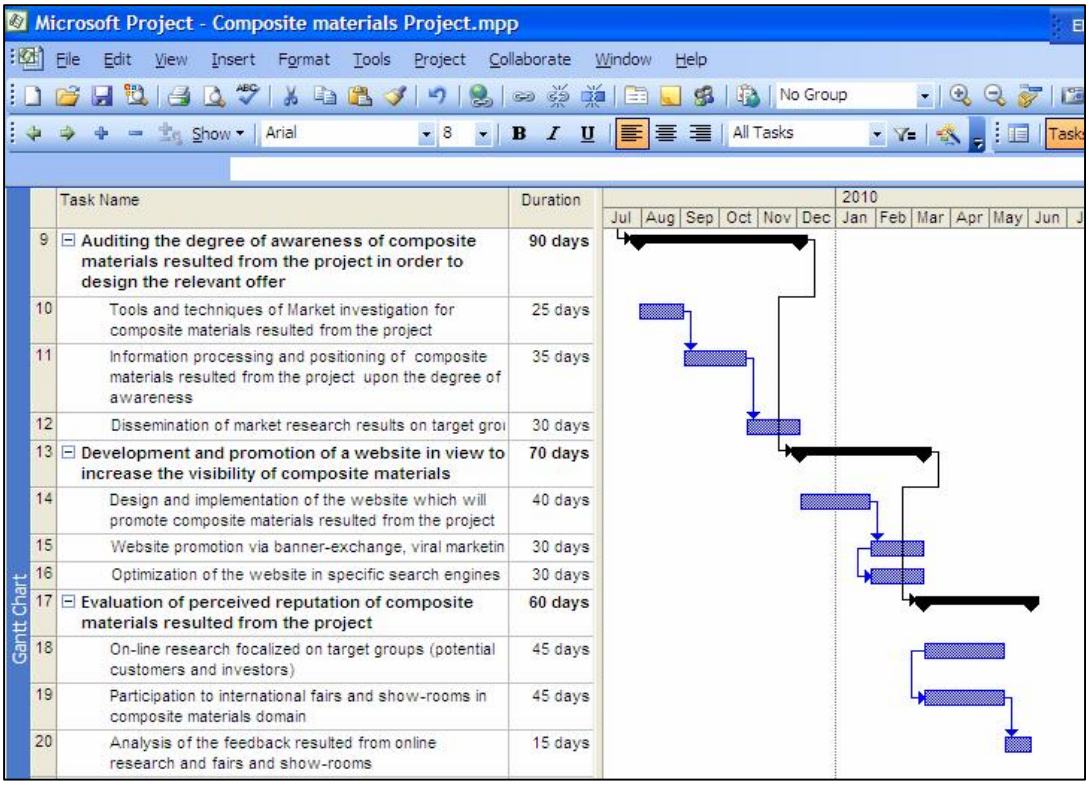


Figure 2 – *Gantt Chart associated to activities involved in the second stage of the composite materials promotion project*

Third stage of this project concerning the promotion of research results in the domain of composite materials involves three main activities: the implementation of the marketing strategy for the composite materials resulted from the project, the evaluation of the marketing strategy for the composite materials resulted from the project using a Balanced Scorecard and the dissemination of the project's results. (figure no. 3)

The implementation of the marketing strategy is focused on the value certification of the composite materials resulted from the research project and the creation of a marketing plan which emphasizes the role of each specific policy ("4P" – Product, Price, Placement and Promotion) within the communication strategy that will promote the competitive advantages of the composite materials. As the promotion of the composite materials involves an industrial marketing approach, we propose the association of "4T" model to the classical "4P": Targeting (the segmentation of composite materials market in view to emphasize the relevant offer), Tailoring (the adaptation of the relevant offer to target group demands and requirements), Tying (cost control management at each stage of this project) and Tapping (the correlation of the offer to the specificities of each target group).

The evaluation of the marketing strategy

supposes the following tasks: the definition of the performance key indicators for the marketing plan, the attachment of a Balanced Scorecard to the results of the marketing plan and the analysis of the marketing strategy for the composite materials resulted from the project using Balanced Scorecard Designer software.

We appreciate that Balanced Scorecard analyses the promotion strategy taking into account all possible perspectives and allows the division of strategic goals into individual actions until the last operational level. The greatest value of this tool reveals the opportunity to link the research results to financial targets.

From the dissemination ways of the research project results, we can mention: research papers on prestigious BDI and ISI ranked publications, business environment certification for project's results and feedback from target groups in order to improve the project's results in the future.

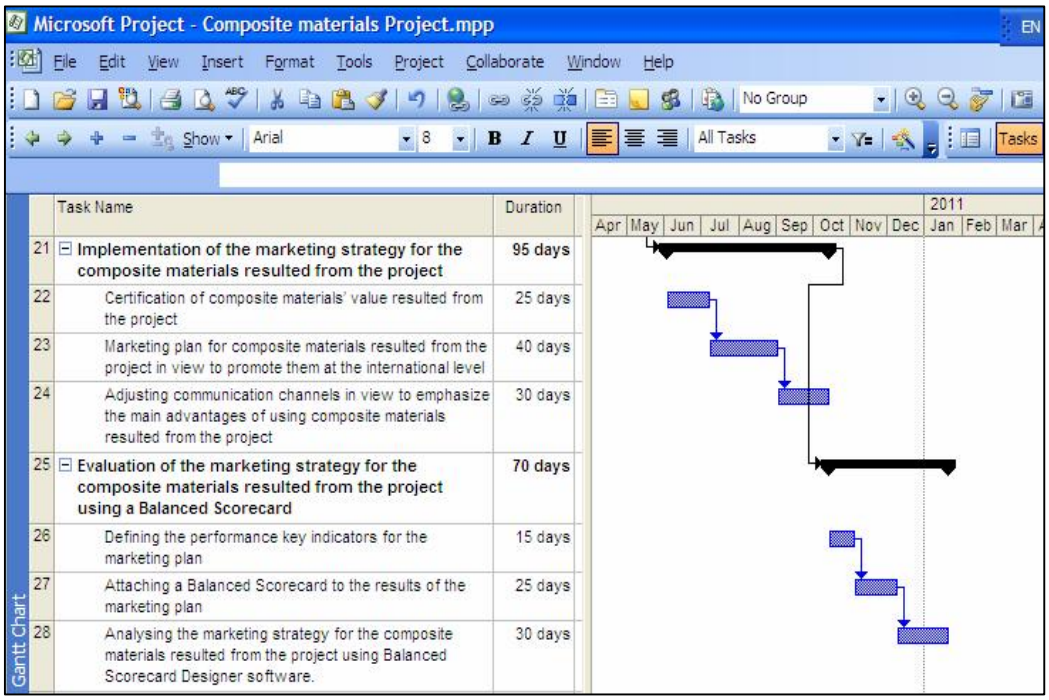
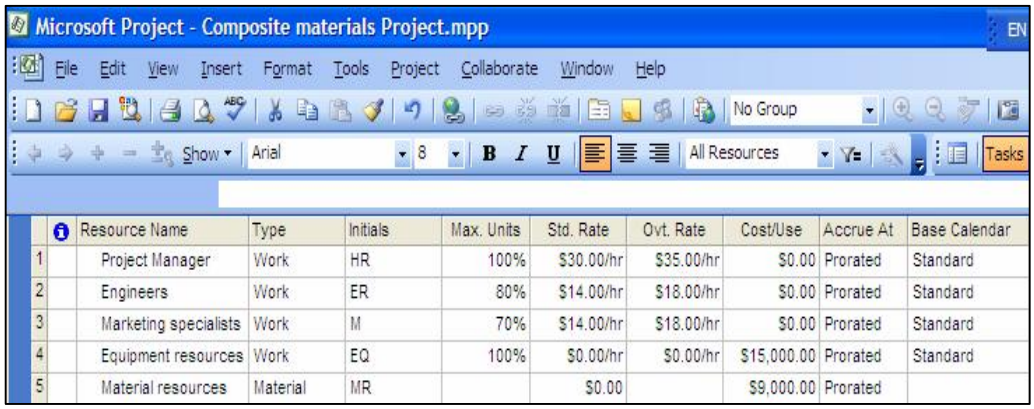


Figure 3 – *Gantt Chart associated to activities involved in the third stage of the composite materials promotion project*

The links between the activities involved in composite materials promotion project represent the success key for project management organization; in many cases, the activities are linked by a Finish-to-Start relationship which reflects that the deadline of an activity determines the start date of the next activity. There are situations in which the project manager decides that two activities must be developed in the same time, the link between them being designed as a Start-to-Start relationship. The major advantage of this type of relationship consists in the decrease of the project duration, but in the same time can generate an over-allocation of resources.

3. The simulation of Microsoft Project functions on composite materials promotion project

Any project involves human, equipment and material resources. Microsoft Project offers the possibility to configure the resources implied by the goals' accomplishment in Resource Sheet diagram, focusing on two major aspects related to resources: the availability and costs. The availability determines the moment and measure in which a certain resource can contribute to the accomplishment of an activity, and costs refers to the amount that will be necessary to pay the respective resource. The configuration of three generic resources in composite materials promotion project emphasizes the following Resource Sheet diagram: (figure 4)



	Resource Name	Type	Initials	Max. Units	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calendar
1	Project Manager	Work	HR	100%	$30.00/hr	$35.00/hr	$0.00	Prorated	Standard
2	Engineers	Work	ER	80%	$14.00/hr	$18.00/hr	$0.00	Prorated	Standard
3	Marketing specialists	Work	M	70%	$14.00/hr	$18.00/hr	$0.00	Prorated	Standard
4	Equipment resources	Work	EQ	100%	$0.00/hr	$0.00/hr	$15,000.00	Prorated	Standard
5	Material resources	Material	MR		$0.00		$9,000.00	Prorated	

Figure 4 – *Resources configuration for composite materials promotion project*

The allocation of resources supposes their implication within project's activities in view to accomplish its goals. Microsoft Project is based on a method called "effort driven scheduling" which reveals that the necessary work for any activity remains constantly without taking into account the number of resources allocated. Any allocation implies the definition of a percentage for all types of resources related to the project's activities. (figure no. 5)

The way in which was conceived the resources' allocation by the project manager emphasizes three distinct situations:

- incomplete allocation – the maximum capacity of a resource isn't covered by the means of its allocation to project's activities;
- complete allocation: the maximum capacity of a resource corresponds to the tasks' attribution;
- over-allocation: the maximum capacity of a resource is overtaken by the means of its allocation to project's activities.

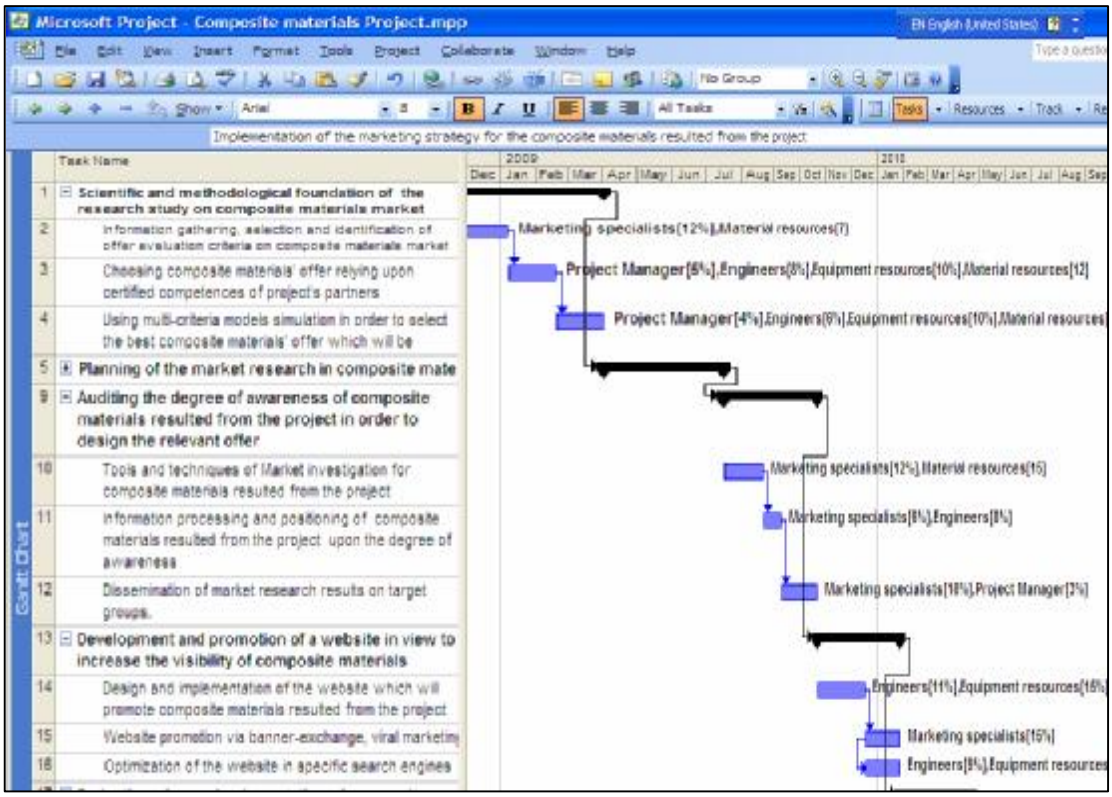
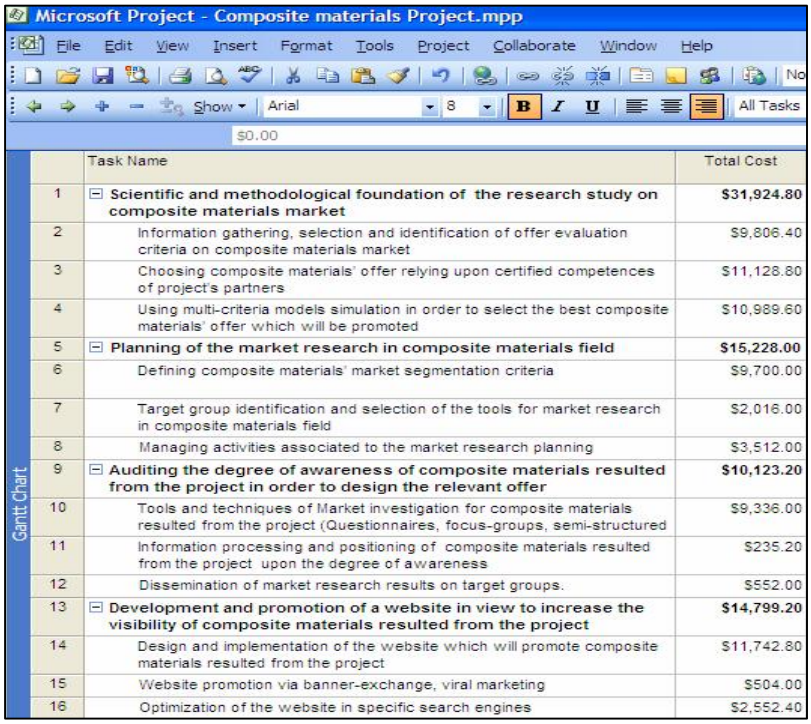


Figure 5 – *Resources allocation to project's activities using Assign Resources tool*

Microsoft Project provides the opportunity to level the over-allocated resources using a predefined function from Tool menu. In many projects, the resources' costs represent the main factor which limits the objectives. The project manager can visualize the costs related to all the activities selecting the menu option: View Table: Cost from Microsoft Project. (figure. 6)



	Task Name	Total Cost
1	**Scientific and methodological foundation of the research study on composite materials market**	**$31,924.80**
2	Information gathering, selection and identification of offer evaluation criteria on composite materials market	$9,806.40
3	Choosing composite materials' offer relying upon certified competences of project's partners	$11,128.80
4	Using multi-criteria models simulation in order to select the best composite materials' offer which will be promoted	$10,989.60
5	**Planning of the market research in composite materials field**	**$15,228.00**
6	Defining composite materials' market segmentation criteria	$9,700.00
7	Target group identification and selection of the tools for market research in composite materials field	$2,016.00
8	Managing activities associated to the market research planning	$3,512.00
9	**Auditing the degree of awareness of composite materials resulted from the project in order to design the relevant offer**	**$10,123.20**
10	Tools and techniques of Market investigation for composite materials resulted from the project (Questionnaires, focus-groups, semi-structured	$9,336.00
11	Information processing and positioning of composite materials resulted from the project upon the degree of awareness	$235.20
12	Dissemination of market research results on target groups.	$552.00
13	**Development and promotion of a website in view to increase the visibility of composite materials resulted from the project**	**$14,799.20**
14	Design and implementation of the website which will promote composite materials resulted from the project	$11,742.80
15	Website promotion via banner-exchange, viral marketing	$504.00
16	Optimization of the website in specific search engines	$2,552.40

Figure. 6 – *Costs involved by the composite materials promotion activities*

As a **conclusion**, the application of project management functions offers to the users of Microsoft Project the possibility to plan and manage efficiently a project and assures the balanced optimization between the project's dimensions: objectives, resources, costs. The organization of the activities involve by the promotion of a research results in composite materials domain, the setting of their duration after the resources allocation, cost control views and online collaboration tools for project team represent the strengths of this software that arrives to be among the leaders on its market.

Acknowledgement

The author gratefully acknowledges the financial support of the Romanian Ministry of Education, Research and Youth through grant 71071/2007 .

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- Appendix -

Project management – Composite materials promotion strategy

Project's stage	Main activities		Associated tasks
I	1	Scientific and methodological foundation of the research study on composite materials market	Information gathering, selection and identification of offer evaluation criteria on composite materials market Choosing composite materials' offer relying upon certified competences of project's partners Using multi-criteria models simulation in order to select the best composite materials' offer which will be promoted
	2	Planning of the market research in composite materials field	Defining composite materials' market segmentation criteria Target group identification and selection of the tools for market research in composite materials field Managing activities associated to the market research planning
II	1	Auditing the degree of awareness of composite materials resulted from the project in order to design the relevant offer	Tools and techniques of Market investigation for composite materials resulted from the project (Questionnaires, focus-groups, semi-structured interviews) Information processing and positioning of composite materials resulted from the project upon the degree of awareness Dissemination of market research results on target groups.
	2	Development and promotion of a website in view to increase the visibility of composite materials resulted from the project	Design and implementation of the website which will promote composite materials resulted from the project Website promotion via banner-exchange, viral marketing. Optimization of the website in specific search engines
	3	Evaluation of perceived reputation of composite materials resulted from the project	On-line research focalized on target groups (potential customers and investors) Participation to international fairs and show-rooms in composite materials domain Analysis of the feedback resulted from online research and fairs and show-rooms
III	1	Implementation of the marketing strategy for the composite materials resulted from the project	Certification of composite materials' value resulted from the project Marketing plan for composite materials resulted from the project in view to promote them at the international level Adjusting communication channels in view to emphasize the main advantages of using composite materials resulted from the project
	2	Evaluation of the marketing strategy for the composite materials resulted from the project using a Balanced Scorecard	Defining the performance key indicators for the marketing plan Attaching a Balanced Scorecard to the results of the marketing plan Analysing the marketing strategy for the composite materials resulted from the project using Balanced Scorecard Designer software.
	3	Dissemination of the project's results	Research paper on prestigious BDI and ISI ranked Publications Business environment certification for project's results Feed back from target groups in order to improve the project's results

Promotion des résultats d'une recherche effectuée dans le domaine des matériaux composites en utilisant le code Microsoft Project

Résumé:

La promotion des résultats d'une recherche effectuée dans le domaine des matériaux composites suppose une série d'activités spécifiques qui peuvent être groupées en fonction de leur apport à l'accomplissement des objectifs. Le logiciel Microsoft Project offre un support réel pour l'organisation de ces activités, tenant compte de leur complémentarité et permet l'illustration de la dimension temporelle du projet, ainsi que l'allocation des ressources aux activités du projet qui engendre la possibilité du contrôle des coûts. La simulation des fonctions de base de ce logiciel met en évidence les opportunités liées à la gestion efficiente de ce projet dans le domaine des matériaux composites.

Promovarea rezultatelor cercetarilor in domeniul materialelor compozite, utilizad softul Microsoft Project

Rezumat:

Promovarea rezultatelor cercetarii efectuate in domeniul materialelor compozite presupune o serie de activitati specifice care pot fi grupate in functie de aportul adus la atingerea obiectivelor. Programul Microsoft Project ofera un support real pentru organizarea acestor activitati, tinand cont de complementaritatea lor si permite ilustrarea dimensiunii reale a proiectului, ca si alocarea resurselor necesare activitatilor proiectului, ceea ce implica posibilitatea controlului asupra costurilor. Simularea functiilor de baza ale acestui soft pune in evidenta oportunitatile legate de gestionarea eficienta a acestui proiect de cercetare in domeniul materialelor compozite.