

PROJECT European Support



STUDY

**TOOLS & METHODS OF
PRODUCT DEVELOPMENT^(I)**
(IDEA GENERATION)
Innovation Management

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This study was made on 9 Romanian Companies during Nov. – Dec. 2004.

1 Short summary of the questions

Question 1

The companies which participated in the study comes mainly from the manufacturing industry, some of consultancy and advertisement.

Question 2,3

38% of the companies have just 1-10 employees and most of them has existed between 0-10 years.

Question 4

The strategies they use for success in the market is mostly customer orientated , but there is also quality leadership as well.

Question 5

All of the basic conditions for innovation friendly companies in the study are quiet important.

Question 6

Quality and price are the specifications that can be improved by product development.

Question 7

Management, marketing and R&D are highly integrated in the product development. HR is hardly ever involved .

Question 8

Most of the companies knows about ISO 9000 and “integrated management systems” and also uses it.

Question 9

Most of the companies are using products easy to maintain, sustainable development and also recycling of materials.

Question 10

The essential restraints which is not repressive for innovation is the time for searching new ideas and the financial resources.

Question 11

The companies detect ideas internally from individuals and from market and competition analysis. Externally they get motivated by customers.

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Question 12

The criteria's of an innovation method to be used by a company are mostly structured description of customers requirements, fostering team work and the description of my product.

Question 13

The companies uses the most brainstorming and SWOT analysis which also is a good method. Other useful methods are the resource checklist and the trends of evolution.

Question 14

The companies involves very often the customers , the competition and the technical consultant in their development process.

Question 15

General knowledge is the most common training possibilities, also communicating and team management are important.

Question 16

The most used criteria for selection of training participants are discussions between employers and employees and second is equally the engagement at work, qualification and analysis of education requirements.

Question 17

Most of answered people belongs to General management and second on product development.

Question 18

The most important environmental problems defined are the storage and deposition of waste products.



2 Detailed result of the questions

Question In which industry does your company operate ?	
1	
*****	2 Manufacturing and equipment selling 1 Bakery products and specialities 1 IT and mobile phone products, services 1 Consultancy and training 1 Consultancy and software products 1 Advertising 1 Construction 1 Production

Question How many employees does your company employ?				
2				
*****	1-10	11-50	51-250	250<
	4	1	2	2

Question How many years does your company exist?			
3			
*****	0-10 years	11-50 years	50< years
	5	3	1

Question Which strategies does your company embark on for success in the market?		
4		
*****		Use
1	quality leadership	3
2	price / cost leadership	2
3	market leadership	1
4	customer orientation	6
5	environment orientation	-
6	innovation orientation	2
7	no strategy known	-

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Question 5		Which basic conditions do in your experiences signalise innovation friendly companies?	
		very important	unimportant
1	promotion by management (colleagues acceptance)	1 - 3 2 - 4 3 - 1 4 - -	
2	time for searching new ideas	1 - 3 2 - 4 3 - 1 4 - -	
3	financial resources	1 - 6 2 - 3 3 - - 4 - -	
4	use of methods and tools (e.g. creativity methods)	1 - 3 2 - 3 3 - 2 4 - 1	
5	team work	1 - 7 2 - - 3 - 2 4 - -	
6	scope for development of unorthodox ideas	1 - 1 2 - 3 3 - 2 4 - 3	
7	integration of external experts	1 - - 2 - 3 3 - 1 4 - 1	
miscellaneous		1 - - 2 - - 3 - - 4 - 1	

Question 6		Which product specifications can for your opinion be improved with product development?	

1	Price	a - 1 b - 4 c - 2 d - 1 e - -	
2	Quality	a - 7 b - 2 c - - d - - e - -	



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3	Quantity	a - - b - 2 c - - d - 2 e - 3
4	Image	a - 4 b - 1 c - 2 d - 1 e - 1
5	Launch	a - - b - 1 c - 1 d - 4 e - 2

Question		Which departments of your company are integrated in the product development process?		
7				
*****		department not existent	highly	hardly ever
1	Research & Development	2	1 - 5 2 - - 3 - - 4 - -	
2	Sales	-	1 - 2 2 - 2 3 - 1 4 - 3	
3	Marketing	1	1 - 4 2 - 1 3 - 1 4 - -	
4	Production	-	1 - 3 2 - 3 3 - 2 4 - -	
5	Human Resources	3	1 - - 2 - 1 3 - 2 4 - 1	
6	Management	-	1 - 6 2 - 1 3 - - 4 - 1	



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Question 8		Which management systems or standards do you know / do you use?	
		know n	in use
1	ISO 9000 ff	7	4
2	EMAS / ISO 14000 / BS 7750	3	-
3	Prepare	-	-
5	integrated management systems	4	2

Question 9		Which aspects of environmental product design are considered by your company?	
		very important	unimportant
1	use of environmentally friendly materials	1 - - 2 - 2 3 - 1 4 - 2	
2	recycling of materials	1 - 2 2 - - 3 - 2 4 - 1	
3	easy to maintain or to repair	1 - 4 2 - - 3 - 2 4 - 1	
4	sustainable development	1 - 4 2 - - 3 - 2 4 - 1	
5	eco balances	1 - - 2 - - 3 - 3 4 - 1	



Question 10		What do you think are the essential restrains for innovation in your company?	
*****		very repressive	not repressive
1	promotion by management (colleagues acceptance)	1 - 2 2 - 0 3 - 3 4 - 3	
2	time for searching new ideas	1 - 3 2 - 2 3 - 2 4 - -	
3	financial resources	1 - 4 2 - 2 3 - 3 4 - -	
4	use of methods and tools (e.g. creativity methods)	1 - - 2 - 6 3 - 2 4 - -	
5	team work	1 - 2 2 - 3 3 - 1 4 - 3	
6	scope for development of unorthodox ideas	1 - - 2 - 1 3 - 4 4 - 2	
7	integration of external experts	1 - 1 2 - - 3 - 1 4 - 5	

Question 11		How do your company find/detect ideas for product development?
*****	12a.) internal	*****
1	sales / customer statistics	4
2	market and competition analysis	8
3	with team work	4
4	from individuals	7
*****	12 b.) external	*****
1	technical literature	4
2	motivation through costumers	8
3	consultants	3
4	R&D institutions	1

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Question 12 Which criteria must a "innovation method" provide to be used in your company?		

1	design of a "ideal product" to derive medium- and long term intentions for product development	3
2	description of my product/process with general trends of evolution	5
3	development of the main contradiction, which have to be overcome, to achieve inventive solutions	4
4	fostering team work (creativity inside teams)	5
5	abstractions of problems to increase creativity	1
6	database of physical effects (e.g. How can we move liquids?)	-
7	structured description of customers requirements	6
8	using knowledge from other industries	1
9	integrated validation tools	-
10	early recognition of error risk of products and processes	3
miscellaneous		

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Question 13		I. Which methods or tools are known respectively used for product development in your company?			
		II. If these methods or tools are used in your company, can you evaluate by your experience the usability of them for product development			
		knowing the method	Using the method	(1)“super“ (4)“useless“	
*****		creativity methods:			
1	brainstorming	4	7	1 - 4 2 - 1 3 - 1 4 - -	
2	SWOT – analysis	3	6	1 - 3 2 - 2 3 - - 4 - -	
3	morphology	1	-	1 2 3 4	
4	synectics	-	-	1 2 3 4	
5	bionics	-	-	1 2 3 4	
miscellaneous				1 2 3 4	
*****		TRIZ – theory of inventive problem solving:			
1	resource checklist	2	3	1 - 2 2 - - 3 - - 4 - -	
2	ideality – ideal product	-	-	-	
3	function and attribute analysis	1	2	1 - 2 2 - - 3 - - 4 - -	
4	inventive principles (technical and physical contradiction)	-	1	1 - 1 2 - - 3 - - 4 - -	
5	database of physical effects	-	-	-	

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6	trends of evolution	-	-	
*****	other methods			
1	QFD - quality function deployment	1	-	1 - 1 2 -- 3 -- 4 --
2	patent search & analysis	-	1	1 - 1 2 -- 3 -- 4 --
3	FMEA – failure mode and effects analysis	-	-	-
4	cause - effect analysis (e.g. fishbone diagram)	2	2	1 - 1 2 - 1 3 -- 4 --
5	scenario techniques	1	1	1 - 1 2 - 1 3 -- 4 --
6	Pareto - analysis (ABC-analysis)	4	-	1 -- 2 -- 3 -- 4 - 1
7	mind mapping	-	-	-

Question 14 Whom does your company include in the product development process?		

1	competition	7
2	customer	9
3	R&D institution	-
4	university	-
5	technical consultant	3

Question 15 Which training possibilities are offered by your company?		
	seminars/courses/workshops for:	
1	communicating – increase the capability of communicating	5
2	conflict management – get to know different conflict strategies	3
3	presentation – structure, composition, performance of presentations	1
4	team management – how to work in a team	4
5	Persönlichkeitsstruktur – wie bringe ich Ideen besser ein	1
6	creativity techniques – impart creative thinking and acting	1
7	general knowledge – foreign language course, computer course, technical courses etc.	6

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miscellaneous	
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Question 16 Which criteria are used for selections of training participants?		

1	company affiliation	1
2	engagement at work	4
3	qualification	4
4	after solicitation	2
5	analysis of education requirements	4
6	discussion between employers and employees	6

Question 17 In which department of your company do you work?		

1	R & D	1
2	Sales	1
3	Marketing	1
4	Production	2
5	EDP	1
6	Human Resources	-
7	General Management	6
8	Product Management	3
miscellaneous	<i>Purchase, logistics</i>	



Question	
18	Please describe in keywords the three most important environmental problems which your company is facing with ?
1	Deposition
1	Unknown problems
1	Waste
1	The nature of activity does not create environment problems
1	The storage of products from the production and from clients
1	Discharge (from combustion engines)
1	Missing space for storage of used oil, used products
1	Recycling (waste products, materials)
1	Low importance for this raw
1	Variety of the market
1	The financial insecurity of the clients
1	There are no problems
1	Make use of waste products as oil, rubber.