Equating Business Value of Innovative Product Ideas

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Abstract
Investing in new product development crucially depends on the capacity to estimate the business value of the product idea in the very early phases of the development process. Several empirical formulations have been proposed by now in this direction, but they lack of scientific tools to relate the business potential of the new product with the key decision-making factors. Strategic and general dimensional analyses are applied to define the relationship between the product business value and the influential factors. A key finding is the strong non-linear relationship between the business value of the new product and the market acceptance.

Keywords:
New product business value, product innovation, dimensional analysis

1 INTRODUCTION

High-tech industries are key driving forces for economic development at regional and national levels. This justifies the interest of governments and venture capitalists to support the foundation and development of businesses operating in the high-tech sector.

High-tech companies are those engaged in the design, development and introduction of new products and/or innovative manufacturing processes through the systematic application of scientific and technological knowledge [1].

Various studies have revealed that the high-tech industry is characterized by market uncertainty, technological uncertainty and competitive volatility [1], [2], [3]. High levels of uncertainty and volatility generate high business risks. Because of these aspects and because the cost of developing the prototype of a high-tech product is very high relative to the costs of reproduction, the conception and development of new high-tech products require a careful analysis before getting a financial support, both from governments (e.g. in the form of spin-offs) and/or venture funds [3], [4].

2 ABOUT PRODUCT BUSINESS VALUE

2.1 Components of business value

In management theory, business value is a concept including various forms of "value" that determine the well-being of an organization in the long-run [5]. This means the concept of value is expanded beyond the economic value (economic profit), including other forms of value such as customer value, supplier value, employee value, partnership value, managerial value, and societal value. These categories of value have an indirect effect on the economic value, even if they are not directly measured in monetary terms. Viewing business value from this broader perspective, methodologies like balanced scorecards look to be very popular for measuring and managing business value [1], [2], [6]. Up-to-date, there are no well-grounded theories about how the various categories of business value are related to each other and how they might contribute to the organization's long-term success [7]. A promising approach is the business model, but countless opinions let knowing that a well-formalized model was not yet proposed.

2.2 Criticisms on business value

There is no consensus on the meaning of business value, either in theory or practice, as well as about its role in effective decision-making, as long as measuring the economic value is enough to guide the decision-making process [1], [5], [6], [8].

While it would be very desirable to formulate all categories of business value to a single economic measure, many practitioners and theorists believe this is either not feasible or theoretically impossible [9], [10]. Therefore, advocates of business value consider that the best approach is to measure and manage multiple forms of value as they apply to each issue under consideration [5], [6], [9], [10].

2.3 Assessing business value of new product ideas

The present paper focuses attention on a specific component of the business value - the one which is related to the market value of a new product. From this perspective, the ratio between "benefits" associated with the extended product (product plus related services plus related relations) and "sacrifices" (monetary and non-monetary) has to be determined. This actually leads towards measuring the effects of both driving and constraining factors acting upon the product (seen as a system) and determining on which side the balance is inclined.

3 THE PROBLEM

Various studies have shown that new ventures have a high rate of failure [4]. Statistics highlight that only a small percentage of these initiatives (around 30%) succeeded to survive more than three years [3], [4]. There are various causes that keep the success rate only at this level, but a major one is the lack of understanding the complex nature of innovation by the people which initiate innovative businesses.

In most of the cases, the entrepreneurs are mainly focused on technological innovation (product innovation), omitting the key roles which some other business aspects play upon the commercial success [2]. Usually, the initiators of high-tech innovative companies are people with very good technical and creative skills, but with poor managerial and business aptitudes and experience – this makes them “not seeing the forest from leafs”.

To get financial support from venture capitalists or business angels, the entrepreneurs need to demonstrate the market potential of their innovative, “product-oriented” business idea [11]. In this respect, several approaches have been experienced for quantifying the market potential of a given innovative product idea. These approaches are mainly based on empirical formulations, which use criteria for identifying the most effective mechanisms to measure the performance of product introduction [3], [11], [12].

However, as other researches demonstrate [13], [14], [15], [16], the market impact of products depends also on factors that are not best quantified by the current empirical assessment approaches of product’s business value (e.g. technical: design and manufacturing, contextual and customer-related factors).

Therefore, efforts are required for setting up tools capable to link, on a scientific basis, the market potential of a new product with the key decision-making factors.

Literature in the field does not reveal too much work on mathematical models for quantifying the market value of a product-related innovation. As of yet, an unconventional model for calculating the value of innovation by associating it with the Albert Einstein’s equation of energy-mass equivalence is reported in [17] ($E = m \cdot c^2$, where: E is the energy, m is the mass and c is the speed of light, $3 \cdot 10^8$ m/s). Thus, adapting the Einstein’s equation for valuing innovation one gets:

$$V = H \cdot \left[\frac{K + C + S}{3} \right]^2, \tag{1}$$

where: V is the value of innovation, H the resources, K the knowledge level, C the capacity to combine knowledge into feasible solutions, and S the part from an ideal solution that can be implemented into practice [17].

However, relationship (1) is somehow doubtful for practitioners, as long as it is not very much directed towards the most common decision-making factors used by investors in assessing new technology ventures.

In this respect, an improved model for assessing the market potential of an innovative product idea is introduced in this paper. It attempts to define a mathematical relationship between the value of innovation and the major influential factors for the commercial success of the technology-based venture.

The proposed model intends to be beneficial both for developers, entrepreneurs and investors in estimating the potential of a given high-tech business idea from the very early phases of its life-cycle, thus minimizing the failure rates and preventing to invest in business initiatives with low market potential.

The next sections of the paper describe the methodology applied to set up the model, the model itself, as well as a case study for exemplifying its use into practice.

4 THE PROPOSED MODEL

4.1 The methodology

An unconventional approach is proposed for establishing the mathematical relationship between the value of innovation and the major influential factors leading to the commercial success of an innovative product, namely the general dimensional analysis [18].

In advance to the application of this formalism, several preparatory actions are required. Thus, a five-step algorithm is further considered for defining the model which quantifies the market potential of an innovative product idea. These steps are:

Step 1: Determine the key influential factors for the commercial success of an innovative product idea.

Step 2: Establish the mechanical equivalence both for the influential factors and for the market potential of the innovative product.

Step 3: Visualize the units of measurement for each mechanical equivalent.

Step 4: Apply the general dimensional analysis to elaborate the mathematical model.

Step 5: Normalize the variables from the mathematical model for harmonizing the units of measurement.

4.2 Identifying the major influential factors

In the algorithm from section 4.1, the first step requires to determine the key influential factors. This is a major challenge, as long as there are so many opinions around this topic [1], [2], [3], [4], [5], [6], [7], etc. Many questions arise in this respect: Which are all these factors? Which of them are essentials? Which is the reference system for measuring essentialness? And so on.

For breaking this vicious circle, an unconventional approach has been considered. It emerges from the philosophy of complex systems, which says that there is no optimal solution to a complex problem, but several possible solutions [19]. The approach is about relating all known influential factors to a set of critical business objectives. Among the exhaustive set of influential factors there is a minority of factors that mainly affect the whole set of business objectives. They are actually the major influential factors. In other words, they comprise most of the “value weight” which contributes to the business success of the new product idea.

By screening the representative literature in the field, a set of eight widely accepted business objectives has been worked out and used for analyzing the complex system concerning to the valuation of the market potential of innovative product ideas. Thus, the following business objectives have been finally considered as being comprehensive in relation with this subject:

Objective 1: Getting as high as possible financial performances.

Objective 2: Leading to as low as possible technical risks.

Objective 3: Leading to as low as possible commercial risks.

Objective 4: Getting as high as possible competitive advantages.

Objective 5: Meeting market needs.

Objective 6: Achieving on-time product launching.

Objective 7: Leading to a long-run product.

Objective 8: Leading to product extensions.

These objectives might be ranked, but in a dynamic business environment, as well as in relation with various business contexts, ranking of objectives has less relevance.

Therefore, a balanced approach should consider all business objectives as being of the same significance. In fact, ranking business objectives exceeds somehow the scope of this analysis.

In order to identify potential influential factors, a comprehensive literature in the field has to be examined, too. The survey led to over 50 possible influential factors. Framing the business objectives and the possible influential factors into a strategic analysis matrix makes possible the identification of the key influential factors.

This means putting the business objectives along the matrix's rows and the possible influential factors along the matrix's columns and afterwards filling the intersection boxes of each pair "business objective-influential factor" with a value showing the level of relationship.

Transferring the know-how from the field of quality planning to this problem, the following levels of relationship could be taken into account: 0 – no relationship; 1 – weak or possible relationship; 3 –medium relationship; 9 – strong relationship; 27 – very strong (critical) relationship. An influential factor belongs to the sub-set of major influential factors if it has a strong or very strong relationship with more than 50% of the business objectives.

Considering this approach, nine major influential factors have been finally extracted. They are shown in table 1. The relationships between the major influential factors and the business objectives are shown in table 2.

Symbols (see table 1) have been attached to the major influential factors for a more convenient use in the forthcoming mathematical formulation. As table 2 reveals, all nine factors have strong and very strong relationships with the majority of business objectives.

In theory, every influential factor could be taken into account for modelling the business value of new product ideas.

No.	Factor	Symbol
1	Emergency for satisfying a certain market need	*U*
2	Market size	*M*
3	Financial power of the target market	*P*
4	Difficulty to copy the idea by competitors	*D*
5	Originality/Novelty (opening a completely new market niche)	*O*
6	Return on investment (investor; customer)	*R*
7	Market elasticity	*E*
8	Market resistance to changes	*I*
9	Effort required to put idea into practice	*L*

Table 1: Major influential factors.

0 - blank 1 - ○ 3 - ⊙ 9 - ◎ 27 - ●	Factor 1: *U*	Factor 2: *M*	Factor 3: *P*	Factor 4: *D*	Factor 5: *O*	Factor 6: *R*	Factor 7: *E*	Factor 8: *I*	Factor 9: *L*
Business objective 1	◎	●	●	◎	◎	●	◎	●	●
Business objective 2				●	◎	○		⊙	●
Business objective 3	●	◎	●	●	●	●	◎	●	●
Business objective 4	◎	◎	◎	●	●	●	◎	◎	●
Business objective 5	●		●		◎	◎	⊙	●	⊙
Business objective 6	○			◎		⊙		⊙	●
Business objective 7	◎	●	◎	●	◎	●	●	●	⊙
Business objective 8	●	●	●	●	◎	◎	●	●	◎

Table 2: The relationships between business objectives and major influential factors.

This approach would lead both to complications in mathematical formulation and to a less practical model (because of too many variables in the system). The idea is to consider the minor set of factors which brings the major influence in the system (the 80-20 rule).

4.3 Model elaboration

As the step 2 of the algorithm requires (see section 4.1), dimensional analysis is further applied for modelling the relationship between system's variables [18]. In order to apply the formalism of dimensional analysis, equivalence with homogeneous physical entities must be established for the influential factors (e.g. mechanical entities).

Table 3 reveals the physical equivalent of each influential factor. A new symbol is also added in table 3, namely *V*. It is associated to the market value of the innovative product idea. The unit of measurement (U.M.) of each physical equivalent is put into evidence in table 3, too. With this information available, the next step of the algorithm consists in formulating the system of equations according to the methodology of general dimensional analysis [18].

In the case of this particular problem, there are m^* = 10 variables (*V*, *U*, *M*, *P*, *D*, …, *L*) and d^* = 3 fundamentals quantities (kg, m and s) (see table 3). For the set m^*, the distributed relationship is the following:

$$f_1(V, I, L) = f_2(U, M, P, D, O, R, E)\,. \qquad (2)$$

The dimensional matrix of the m^* variables, for the d^* fundamental quantities, is:

	V	*I*	*L*	*U*	*M*	*P*	*D*	*O*	*R*	*E*
kg	1	1	1	1	0	1	1	1	0	1
m	2	1	2	-1	2	2	1	1	3	-1
s	-2	-2	-2	-2	0	-3	-1	-1	-1	-2

. (3)

The monomial relation, having unknown exponents for all variables, is:

$$V^p \cdot I^i \cdot L^j = k \cdot U^a \cdot M^c \cdot P^d \cdot D^e \cdot O^f \cdot R^g \cdot E^h\,. \qquad (4)$$

In (4), *k* represents a constant. It should be determined for each market sector by experimental analysis. The system of linear algebraic equations expressing the dimensional homogeneity is presented in (5).

As one can see, it is an indeterminate system of equations. In such cases, the rule of Diophantine systems of equations is applied. According to the theory of general dimensional analysis and the theorem of quantity exponent values the rule to solve the system of equations from (5) is to identify positive, integral and small quantity exponents [18].

Symbol	Equivalent entity	U.M.
V	Energy	$kg \cdot m^2 \cdot s^{-2}$
U	Pressure	$kg \cdot m^{-1} \cdot s^{-2}$
M	Surface	m^2
P	Power	$kg \cdot m^2 \cdot s^{-3}$
D	Percussion (force impulse)	$kg \cdot m \cdot s^{-1}$
O	Impulse	$kg \cdot m \cdot s^{-1}$
R	Volume flow-rate	$m^3 \cdot s^{-1}$
E	Elastic modulus	$kg \cdot m^{-1} \cdot s^{-2}$
I	Inertial force	$kg \cdot m \cdot s^{-2}$

L	Mechanical work	$kg{\cdot}m^2{\cdot}s^{-2}$

Table 3: Equivalence with physical entities.

$$\begin{cases} p+i+j=a+d+e+f+h \\ 2\cdot p+i+2\cdot j=-a+2\cdot c+2\cdot d+e+f+3\cdot g-h\cdot \\ -2\cdot p-2\cdot i-2\cdot j=-2\cdot a-3\cdot d-e-f-g-2\cdot h \end{cases} \quad (5)$$

Solving the system of equations (5), the following results are obtained: $p = 1$; $i = 3$; $j = 1$; $a = 1$; $c = 1$; $d = 1$; $e = 1$; $f = 1$; $g = 1$; $h = 1$.

This leads to the following relationship between the market value of an innovative product idea and the influential factors of the commercial success for the innovative business:

$$V = k\cdot\frac{U\cdot M\cdot P\cdot D\cdot O\cdot R\cdot E}{I^3\cdot L}. \quad (6)$$

As relationship (6) reveals, the market resistance to change is the most critical factor for the success of the business. This is also proved in practice. There are cases of breakthrough innovations which are so revolutionary that markets are not prepared to assimilate them.

Therefore, a huge effort for educating the market is required; as well as relevant time. Hence, innovative companies have wide marketing campaigns with a lot of time in advance the new product is launched, for educating the market with the upcoming product and for showing its benefits.

4.4 Model normalization

For a better use in practice of the model (6), some transformations are required. They emerge from the fact that variables have different units of measurement. The usual procedure in such cases is normalization. In order to normalize the right-side variables in equation (6), two cases have to be considered: a) the case of variables that should be maximized; b) the case of variables that should be minimized.

For normalizing, the so-called "utility" function is introduced. In the case of variables that have to be maximized, utility 0 will be associated to every value which is below the limit value and utility 5 will be associated to every value that reaches or exceeds the target value.

For values in between, the three-simple rule is applied. In the case of variables that have to be minimized, the rule is opposite. Thus, variables *U, M, P, D, O, R* and *E* have to be maximized, whereas variables *I* and *L* have to be minimized.

Considering a generic variable Σ that has to be maximized and denoting with Σ_T the ideal value to be achieved (the target value), with Σ_L the limit value (the lowest acceptable value) and with Σ_E the estimated value, the normalized value Σ_N of the variable Σ is calculated with the formula:

$$\Sigma_N = \frac{5\cdot(\Sigma_E-\Sigma_L)}{\Sigma_T-\Sigma_L}. \quad (7)$$

For example, having the variable *M* (market size) and assuming for the sake of exemplification the values M_T = 1 000 000 units, M_L = 100 000 units, M_E = 600 000 units, the normalized value M_N, calculated with formula (7), is 2.50 from the maximum value 5.

Considering a generic variable Ω that has to be minimized and denoting with Ω_T the ideal value to be achieved (the target value), with Ω_L the limit value (the highest acceptable value) and with Ω_E the estimated value, the normalized value Ω_N of the variable Ω is calculated with formula (8).

$$\Omega_N = \frac{5\cdot(\Omega_L-\Omega_E)}{\Omega_L-\Omega_T}. \quad (8)$$

For example, taking into account the variable *L* (effort required to put the idea into practice), counted in money spent for product development, implementation and launching, and assuming for the hypothetic case study L_T = 10 000 000 €, L_L = 30 000 000 €, L_E = 15 000 000 €, the application of formula (8) leads to the normalized value L_N of 3.75 from the maximum value 5.

Thus, the model which expresses the business value of a new product idea gets the following normalized form:

$$V_N = 125\cdot k\cdot\frac{\prod_{\Sigma=U,M,P,D,O,R,E}\frac{\Sigma_E-\Sigma_L}{\Sigma_T-\Sigma_L}}{\prod_{\Omega=I,L;\,Y=3\text{ for }I;\,Y=1\text{ for }L}\left(1-\frac{\Omega_L-\Omega_E}{\Omega_L-\Omega_T}\right)^Y}. \quad (9)$$

A new product idea brings value in the business if and only if $V_N > 1$. The higher the value of V_N the higher business potential is embraced in the respective product idea. From two product ideas, the one having a higher value of V_N should be primarily taken into account.

5 APPLICATION EXAMPLE

For exemplifying the practical application of the model equating in the relationship (6) (or (9)), the case of a software product emerging from a research project, run under the coordination of the author of this paper in the framework of a grant financed by the Romanian Ministry of Education and Research, is further considered.

The innovative software product is actually an expert system for quality cost planning, monitoring and control. Quality cost management is an important issue to increase the visibility of the business processes and to make more "tangible" the process's maturity within an organization; and from here to make more "visible" the market value of the business.

Therefore, companies that are oriented on capitalizing their businesses have an interest in implementing quality cost management systems. For software prototyping (the beta version), a budget of 300 000 € was spent (considering the costs in the Romanian labour market).

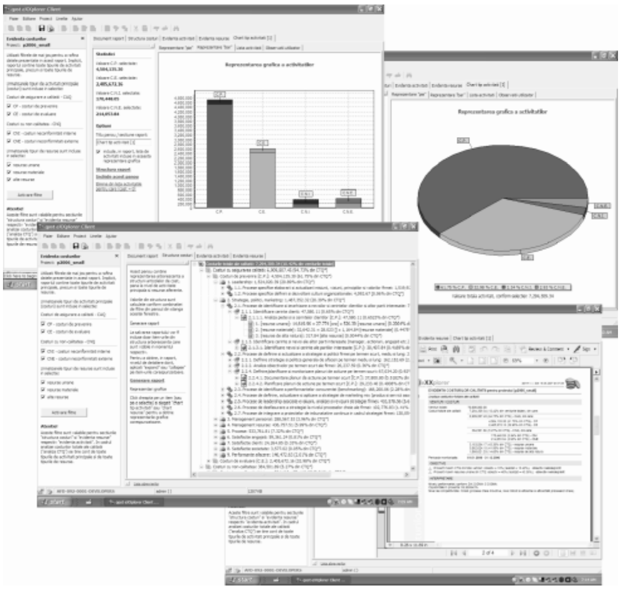

Figure 1: Screenshots exemplifying the expert system.

The results have been tested in a large chemical plant, thus proving the technical potential of the new tool.

Screenshots with examples of reports produced by the expert system under discussion are illustrated in figure 1. In this context, the idea of transferring the results towards a spin-off has been encouraged by the university.

Opportunities for further financing the development of the product from structural funds in the amount of 200 000 €, as well as the possibility of the entrepreneurs to add two other prototypes in the framework of this initiative additionally motivate the initiation of a high-tech spin-off.

To simplify the exercise, for this case study the target market in the introduction phase of the product's life-cycle is limited to the Romanian mid and large size companies, where the economic context has generated opportunities to sell such products.

The beginning of year 2008 was taken into account as temporal reference for analysing the business potential. For the variable *U* (emergency onto the market), considering the characteristics of the target market, the following values have been obtained: U_T = 1/0.2 years^{-1}; U_L = 1/2 years^{-1} and U_E = 1/0.5 years^{-1}. Therefore, U_N = 1.66 (see formula (7)).

In the case of the second variable, *M* (market size), for the product under consideration and the target market, the following results have been obtained: M_T = 6 000 units; M_L = 500 units; M_E = 2 000 units. From formula (7) the value of M_N is 1.36.

For the third variable, *P* (financial power of the target market), the focus is on the price policy. In the context of the target market, the following results were taken into account: P_T = 7 000 €/unit; P_L = 3 500 €/unit; P_E = 5 000 €/unit. The normalized value, calculated with formula (7), is P_N = 2.14.

For the variable *D* (difficulty to copy the idea by competitors) the estimations are on how much money a potential competitor has to spend in order to get at least the same results as the current product. In this respect, the following results were obtained: D_T = 700 000 €; D_L = 200 000 € (the same as for the current product); D_E = 480 000 €. From formula (7), the normalized value is D_N = 2.80.

In the case of *O* (originality), the focus is on identifying the unique features of the current product with respect to other competing products and further on calculating the costs for competitors to bring these features within their products, too. For the product under consideration, the following results have been obtained: O_T = 150 000 €; O_L = 50 000 €; O_E = 100 000 €. The normalized value is O_N = 2.50 (formula (7)).

For the sixth variable, R (return on investment: ROI), the focus is on determining the mean value between the ROI for customers and the ROI for producer. In this case, the following results are reported: R_T = 250%; R_L = 150%; R_E = 200%. Thus, the normalized value is R_N = 2.50 (see formula (7)).

For the seventh variable, *E* (market elasticity), in the case under consideration the following results have been obtained: E_T = 1.5; E_L = 1.0; E_E = 1.2. Using formula (7), the normalized form gets the value E_N = 2.00.

With respect to variable *I* (market resistance to changes), the challenge is to estimate the effort (in monetary units) necessary to spend for educating the target market about the utility of the product and about the way to use it effectively and efficiently. In the case of the product under consideration, the estimations over the time horizon of 5 years have led to the following results: I_T = 40 000 €/time horizon; I_L = 200 000 €/time horizon; I_E = 150 000 €/time horizon. With formula (8), the normalized value is I_N = 1.56.

For the last variable, *L* (effort required for putting the idea into practice), the following results are reported (in monetary units): L_T = 200 000 €; L_L = 350 000 €; L_E = 300 000 €. The normalized value of *L* is L_N = 1.66 (calculated with formula (8)).

The business value of the product idea is calculated with the formula below:

$$V_N = k \cdot \frac{U_N \cdot M_N \cdot P_N \cdot D_N \cdot O_N \cdot R_N \cdot E_N}{\left(5 - I_N\right)^3 \cdot (5 - L_N)}. \qquad (10)$$

Replacing the symbols from (10) with their numeric values for the case study under consideration and operating the calculations, the estimated potential of the product idea in the moment of analysis is: $V_N = 1.24 \cdot k$. In this very specific case, the constant *k* shows the potential to sell the product on new markets (which are quite large), too, as well as the capacity to attach the product as module to various ERP platforms (opportunities for business partnerships). Thus, *k* >1; this makes the product even more attractive.

As the results reveal, $V_N > 1$, therefore the conclusion is that this product idea has market potential. However, value 1.24 is not very high with respect to the limit 1. This means that, for the product under consideration, there are business risks in the respective target market. Therefore, a decision to invest in this specific business will be strongly influenced by the capability of entrepreneurs to co-finance the business, especially for supporting promotion and market education. An opportunity might be the access to structural funds for granting spin-offs in the amount of 200 000 €, distributed 105 000 € for promotion, marketing and communication and 95 000 € for development and launching.

This means, the new values for L_E and I_E from the perspective of venture capitalist will be: L_E = 205 000 € and I_E = 45 000 €/time horizon, thus the new values for L_N and I_N will be: L_N = 4.83 and I_N = 4.84. The new value of V_N will be $V_N = 294.71 \cdot k >> 1$, which makes the project very attractive for a potential investor.

A remark has to be done with respect to formula (9) or formula (10): if L_E or I_E reaches their target values, the result is a division with 0, therefore, in such cases, instead of 1 (in formula (9)) or 5 (in formula (10)) it should be used another value (e.g. 1.1 and 5.1). This tip does not affect the conclusions at all.

It should be noted that calculation of V_N is a supplement to the feasibility study of the business, as well as to the business plan, and must not replace them. However, it offers a way of speeding up the decision of investing or not in a business idea. If V_N does not show attractive values, maybe supplementary efforts for setting up the feasibility studies and business plans are not justified.

6 FURTHER RESEARCHES

Researches to identify if it is justified or not (in terms of the effectiveness of conclusions) to enhance the relationship (6) with new factors will be taken into account. The idea of defining equivalent relationships for other areas of innovation (e.g. marketing innovation, process innovation, organizational innovation, etc.) is of interest, too.

7 CONCLUSIONS

A novel model for quantifying the market potential of an innovative product idea is described in the paper. The quality of the model arises from its potential to reveal the type of relationship (direct or inverse) and the value weight of each factor with respect to the market value of the new product. The use of scientific tools, both for the identification of the key influential factors and for the elaboration of the mathematical formula of the model, contributes to the quality of the results, too.

The key influential factors are in strong relation with the business objectives taken as inputs in the system. This issue might induce certain relativity in the model, in the sense that some additional influential factors, not included in the model, could be also critical. However, this aspect does not affect the methodology and so far the business objectives here considered look to be quite comprehensive.

According to this model, the market inertia looks to be very critical in the equation of product competitiveness. This conclusion is extremely important, as long as many (just for not saying most) of the spin-off entrepreneurs do not spend enough effort on marketing, promotion, advertising and communication, appreciating that technical innovation is the major driving force for the commercial success of the new product.

The model is relatively simple without losing the essence of the problem. Usually, people dislike writing elaborated documents, such as feasibility studies or business plans, before having some credits that their idea is of interest for potential investors. This model gives them the chance to prove the business potential, without missing the essential aspects of the business.

Nevertheless, even the model looks somehow simple it is in the same time comprehensive. Actually, all important aspects that should be included in a business plan or a feasibility study are elegantly comprised in the model. In addition, the model forces to think in terms of targets, acceptable limits, as well as in terms of estimates with respect to the effective capability of the entrepreneurs to put the idea into practice, taking also into account the market conditions.

The model is also sensitive to the temporal and spatial location of the business. This means that, applying the model to the same product idea but on different markets, at different moments in time, and related to different entrepreneurs, the results might differ. In fact this issue is specific to any business plan, too; thus the model proofs its “aliveness”.

In conclusion, the model provides a practical tool for assessing the potential of new technology ventures. It is a useful guide both for entrepreneurs and investors in the incipient phases of the innovation process.

8 ACKNOWLEDGMENTS

Financial support from the Romanian Ministry of Education and Research within the research grant CEEX / INOVEX 140 is acknowledged with gratitude.

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