Fulea, Mircea; Șandru, Gabriela; Brad, Stelian; Maftei, Mihaela

Article

A New Entrepreneurial Decision-Making Support Framework for Assessing Business Line Correlations

Amfiteatru Economic Journal

Provided in Cooperation with:
The Bucharest University of Economic Studies

Suggested Citation: Fulea, Mircea; Șandru, Gabriela; Brad, Stelian; Maftei, Mihaela (2015) : A New Entrepreneurial Decision-Making Support Framework for Assessing Business Line Correlations, Amfiteatru Economic Journal, ISSN 2247-9104, The Bucharest University of Economic Studies, Bucharest, Vol. 17, Iss. Special No. 9, pp. 1198-1212

This Version is available at:
https://hdl.handle.net/10419/168975

A NEW ENTREPRENEURIAL DECISION-MAKING SUPPORT FRAMEWORK FOR ASSESSING BUSINESS LINE CORRELATIONS

Mircea Fulea[1*], Gabriela Șandru[2], Stelian Brad[3] and Mihaela Maftei[4]
[1) 2) 3)]Technical University of Cluj-Napoca, Romania
[4)] The Bucharest University of Economic Studies, Romania

Please cite this article as:
Fulea, M., Șandru, G., Brad, S. and Maftei, M., 2015. A New Entrepreneurial Decision-Making Support Framework for Assessing Business Line Correlations. *Amfiteatru Economic*, 17 (Special No. 9), pp. 1198-1212

Abstract
Sustainability is probably the ultimate goal of any entrepreneur when initiating or developing a business. As it involves competitiveness, companies aim to produce differentiated economic offerings by reusing and sharing processes, components, information and knowledge – many times from different domains. However, to be effective, this should be envisaged already when developing the entrepreneurial plan or when assessing the opportunity of extending the business – therefore the need for planning / implementing / integrating several business lines (from various domains). As many of them may look attractive, an effective decision of starting one business line or another should be supported by some tool that allows a systematic assessment of the opportunity of implementing them.
This paper proposes an algorithm that supports entrepreneurs in this respect. The opportunity of developing new business lines is assessed by estimating the mutual impact between them and existing business lines, their impact on organizational performance, and additional indicators such as financial effort, the estimated return on investment, technical and organizational difficulty, risk level or domain financing opportunities. An application example is presented in which an SME in an interdisciplinary domain (covering IT and life-sciences) assesses the opportunity of opening two new business lines.

Keywords: diversification strategies, business lines, support framework, SMEs

JEL Classification: O20, O22, O30

[*] Corresponding author, **Mircea Fulea -** mircea.fulea@staff.utcluj.ro

Introduction

Every entrepreneur, when setting up or developing a business, envisages its sustainability, which means to be able to last or continue for a long time (Candea, 2007). Sustainability implies three major aspects – environmental, societal and economical (Seliger et al, 2008) (Meier et al, 2010), which have to be carefully balanced (Schonsleben et al, 2010). For companies, innovation – which is strongly related to sustainability (Klewitz et al, 2014) – should focus not only on products and services offered, but on all their key business processes.

By reusing and sharing processes, components, information and knowledge (many times from different domains) over a family of products and/or services, companies can efficiently produce a set of differentiated economic offerings (Aggarwal et al, 2013), thus creating more added value for their customers. However, to be effective, this should be envisaged already in the stage of developing the entrepreneurial plan, or when assessing the opportunity of extending the business – therefore the need for planning / implementing / integrating several business lines from various domains (for instance to integrate software with electronics in order to provide smarter household devices, or graphic design with communication abilities in order to create better corporate identity services). In other words, an adequate *related diversification strategy* should be developed (Boz et al, 2013).

Nevertheless, there are a lot of possible directions for diversification of products and/or services (either if differentiation, customer loyalty or target group extension is envisaged), therefore many business lines may look attractive to the entrepreneur or the management team. However, a diversification strategy alone will not produce superior performance (Boz et al, 2013). An effective decision of starting one business line or another should be supported by some tool or method that allows measuring or systematically assessing the opportunity of implementing that business line (i.e. to estimate if (and how much) it contributes to the business sustainability, if it has a positive impact on other existing business lines, if there is some difficulty or risk related to it or if it is too expensive). For instance, a company providing web development services might want to provide also multimedia processing services and also consulting on communication and branding. However, as diversification is a time and resource consuming process (Park et al, 2013), the opportunity of starting new business lines should be thoroughly assessed.

This paper proposes a framework (decision-making support algorithm) that supports entrepreneurs in this respect. The opportunity of developing new business lines is assessed by estimating the mutual impact between them and existing business lines, their impact on organizational performance, and additional indicators like financial effort, estimated return on investment, technical and organizational difficulty, risk level or domain financing opportunities.

Paper outline. The remaining of the paper is structured as follows: the second section reviews the related scientific literature, the third section discusses the proposed algorithm (the core idea and the algorithm steps), the fourth section discusses an application example (the case of an SME in the IT and life-science domain wishing to start two new complementary business lines), and the fifth section discusses the conclusions and future work.

Review of the scientific literature

A survey was conducted within both scientific literature and over the world-wide-web to identify similar approaches on assessing the opportunity of starting new business lines (within related diversification strategies). Scientific literature databases were queried by the following series of keywords: *+specialized +diversification*, *+diversification +strategy*, and *+related +diversification*. Results related to the approach in this paper are discussed below.

In Duhaime (2015) advantages and disadvantages of the related (or horizontal) diversification are discussed, the approach being in line with the one hereby proposed for analyzing potentially new business lines. In (Bowen et al, 2015) the impact of diversification on firm performance is discussed, but it is noted that this has to be still better understood. In (Boz et al, 2013) the non-linear influence of (related) diversification on a company performance is discussed, highlighting its advantages over unrelated diversification. The relationship between diversification strategies and organizational performance is also discussed, but the latter is measured rather by financial indicators like Return on Assets and Return on Sales. The work (Teece, 2015) focuses on cross-industry diversification, analysing also approaches in literature claiming that diversification on average reduces performance compared with comparable single-business firms. The work (Park et al, 2013) investigates the effects of within-industry diversification and related diversification strategies on company performance, highlighting that diversification strategies inevitably require large organizational changes and rearranging resources within a company.

More results, more or less in line with the above ones, can be identified in literature (for instance a plain web search using the "related diversification strategy" keywords returns nearly 2 million results). However, no relevant result could be identified to deal with assessing the opportunity of starting new business lines by using the approach proposed within this paper (being either too general or not sufficiently related).

The proposed algorithm

To address the challenges described above, the authors propose a novel algorithm, targeted towards decision makers in SMEs, aiming to support them in deciding whether the initiation of a new business line (as part of their diversification strategy) is attractive or not.

The proposed algorithm is built upon the following core ideas:

- (a) the new business line should have a positive impact on the existing business lines,
- (b) the other business lines (and supporting business processes) should support the new business line,
- (c) the new business line should be able to exist (with a specific performance level) also independently, and
- (d) the new business line should have a positive impact on the organizational performance.

Ideally, core idea (d) should be formulated as „the new business line should have a positive impact on the organization's sustainability", but it would be extremely difficult, if not impossible, to find an algorithm to prove this. The authors of this paper consider, however, that organizational culture (which determines organizational performance) has a strong

positive impact on sustainability, so increasing organizational performance may significantly contribute to sustainability. This idea is in line with several approaches found in the scientific literature (systematically reviewed in (Linnenluecke, 2010)).

The algorithm is graphically represented in (figure no. 1). It consists of seven phases, preceded by one preliminary step.

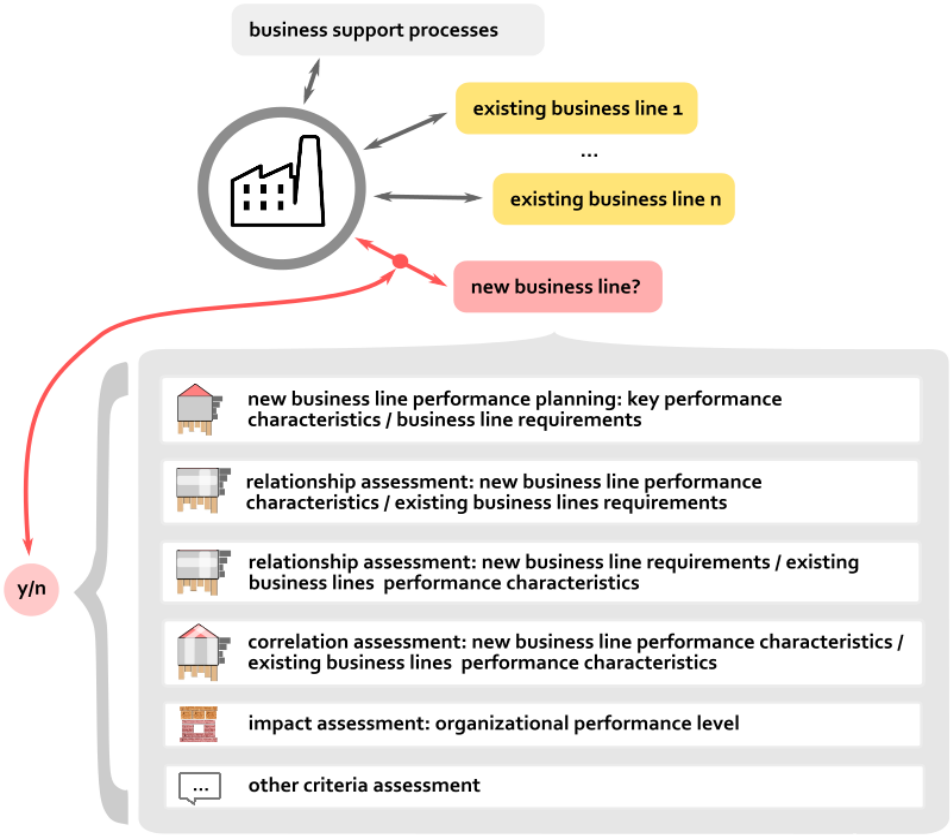

Figure no. 1: The proposed algorithm

The **preliminary step** of the algorithm consists in describing the existing business lines of the company by considering, for each one, its (market) requirements and its key performance characteristics (like in a traditional performance planning approach). The support business processes (for instance idea management processes or employee skills development processes) should be also described in a similar manner (by using requirements and performance characteristics).

An assessment of the current organizational performance level (to be further used as a reference) should also be made in the preliminary step. A dedicated software tool like *business eXXplorer* can be used (Brad et al, 2006); the main characteristics of this tool will be briefly presented after discussing the rest of the algorithm. The seven algorithm phases,

described below, focus on assessing the opportunity of starting a new business line by implementing the core ideas (a-d) discussed above.

Phase one consists of identifying the market requirements and defining the performance characteristics for the new business line (only). Requirements should be ranked (for instance by using the Analytic Hierarchy Process (AHP) method) and performance characteristics should be planned (for instance using the well-known Quality Function Deployment (QFD) method) (Fulea et al, 2014). Target values should be established so that the new products or services (offered through the new business line) would be competitive on the market.

Phase two consists of analysing the relationships between the new business line performance characteristics and the existing business lines requirements. The graphical support of the QFD method can be used to complete this step. More numerous and stronger relationships indicate that the products or services envisaged through the new business line may have a good potential added value for the customers as they already respond to their needs. A phase score (s1) is computed (e.g. the weighted sum of the relationship values).

Phase three consists of analysing the relationships between the existing business lines and support processes performance characteristics and the new business lines requirements. The graphical support of the QFD method can be used to complete this step. More numerous and stronger relationships indicate that some features of existing products or services offered by the company already address some requirements corresponding to the new business line, which might for instance increase the acceptance of the new products or services (at least for the existing customers). A phase score (s2) is computed (e.g. the weighted sum of the relationship values).

Phase four consists of analysing the correlations between the existing business lines and support processes performance characteristics and the new business line performance characteristics. The graphical support of the QFD method (i.e. the House of Quality roof) can be used to complete this step. A higher number of positive correlations could mean that obtaining better target values for new products or services would allow obtaining better performance also for existing products or services (or for support business processes). A phase score (s3) is computed (e.g. the number of positive correlations). Negative correlations can be addressed by using innovation tools like the TRIZ Contradiction Matrix (Brad et al, 2009).

Phase five consists of analysing what impact on organizational performance the new business line would have. The same tool or approach as in the initial step should be used. If using the *business eXXplorer* tool, a *what-if* scenario assessment could be performed (by considering a successful implementation of the new business line) and results could be automatically be compared to the initial assessment. A phase score (s4) is computed (e.g. the improvement of the global performance value computed by *business eXXplorer*).

Phase six consists of assessing more criteria related to the opportunity of starting the new business line. The algorithm proposes a criteria set, but it could be customized to fit any business domain specificity. The criteria set could be:

- (c1) financial effort,
- (c2) the estimated return on investment,

- (c3) technical and organizational difficulty,
- (c4) risk level,
- (c5) domain financing opportunities (e.g. grants).

For each criterion a score should be calculated (or estimated).

Phase seven (the last one) consists of deciding, based on the data determined in the initial step and phases 2-6, whether the new business line is worth starting or not. Given the specificity of each business domain, it is difficult to propose a fixed decision algorithm; however, some approaches can be highlighted. For instance, the new business line could be attractive if each score is above some level, if some scores are significantly high, or if there is a fair balance between the obtained scores. The criteria can also be ranked (for instance using the AHP method) and an aggregate score can be computed.

Assessing the organizational excellence level. The algorithm proposed in this paper employs the *business eXXplorer* software tool (Brad et al, 2006) for organizational excellence level assessments. Although other means of measuring organizational excellence could be used as well within the algorithm, *business eXXplorer* provides key features that make it suitable for this algorithm, features discussed in the rest of this section.

The most important feature of *business eXXplorer* is that it measures the global performance level of the business system against a mixture of two organizational excellence models (the European EFQM model (The European Foundation for Quality Management, 2015) and the American MBNQA model (The Malcolm Baldrige National Quality Award, 2015), thus reflecting the European philosophy concerning organisational excellence, that aims at providing a balance between the business potential and its outcomes, and the American philosophy, that is mainly oriented towards business outcomes.

The *business eXXplorer* software tool also measures the performance level of each key component of the business system, returning numerical values. It also computes two aggregate indicators – the global performance level (GPL) and the capability index of the organization (OCI) - by evaluating the 9 key components of a business (leadership, strategies / policies / marketing, resource management, personnel management, technical processes, employee satisfaction, customer satisfaction, society satisfaction, financial performance) through 166 criteria. It also emphasizes the imbalances within the business system and automatically proposes guidelines for reducing them. *business eXXplorer* has also the capability of managing multiple assessment projects, thus allowing comparative analyses of the organizational performance at various time intervals (used in Phase 5 of the algorithm proposed in this paper).

The reports produced by *business eXXplorer* for an assessment session are presented in (figure no. 2). Apart from getting the aggregate scores regarding the business performance, one can also more thoroughly evaluate the various business lines in terms of requirements, characteristics, and correlations to other business processes (like leadership, strategies / policies / marketing, or employee and resource management). This can significantly support the first four phases of the algorithm.

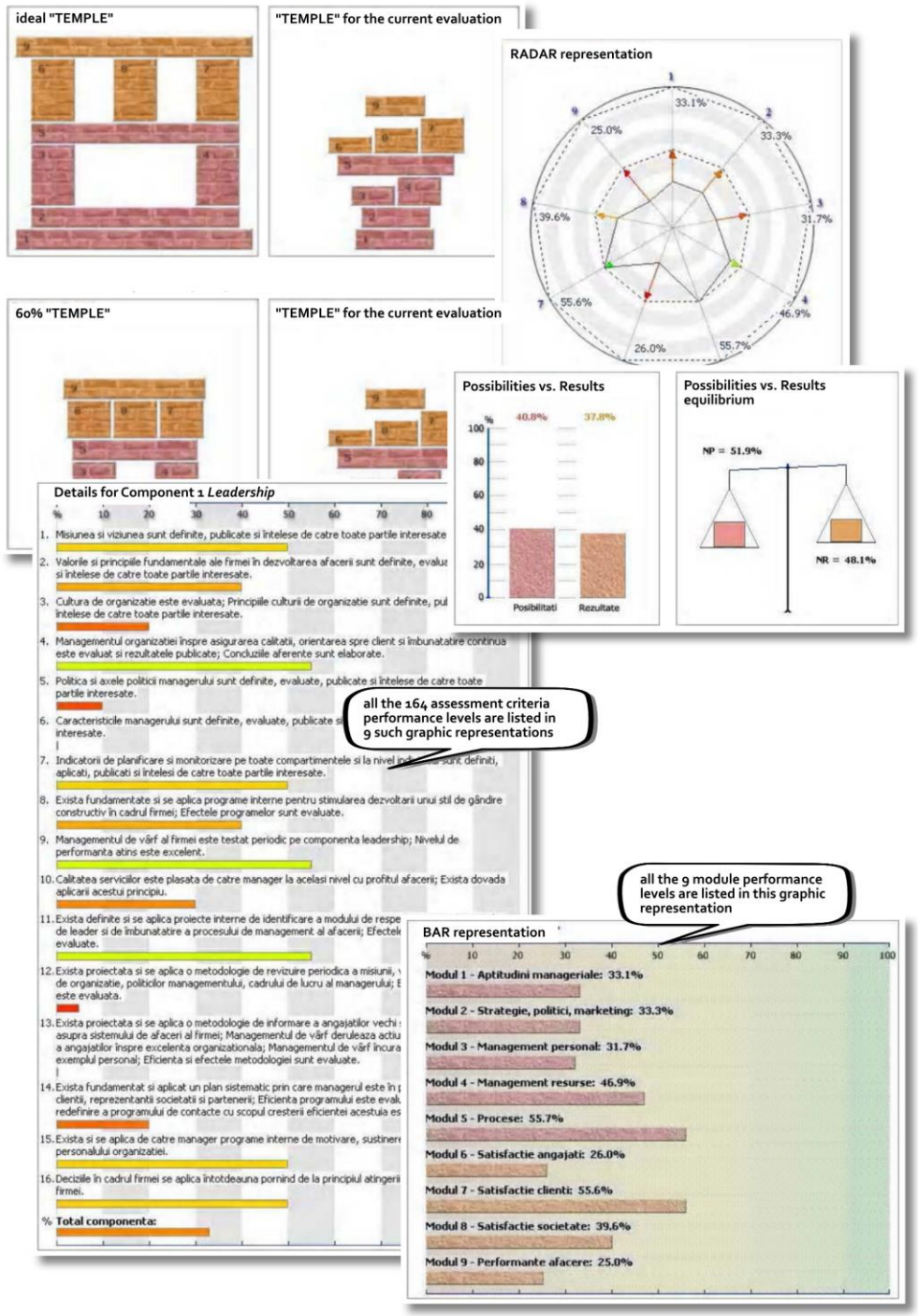

Figure no. 2: The reports produced by *business eXXplorer* (sample pages)

Application example

The proposed algorithm was applied for an SME in an interdisciplinary domain covering IT and life-sciences. The company was founded 4 years ago and initially offered services related to e-learning content creation, having 2 employees. With an adequate diversification strategy (envisaging sustainability), it now has over 15 employees and several (correlated) business lines:

- (b1) software development (web & mobile) for life-sciences,
- (b2) data management & statistics (life sciences),
- (b3) IT auditing,
- (b4) general IT support,
- (b5) e-learning content creation (for life-sciences), and
- (b6) general graphic design.

The algorithm proposed in this paper was applied by the company in order to assess the opportunity of opening two new business lines: (n1) branding & identity services and (n2) general HR services (both targeted to companies in the life sciences sector).

Both new business lines seem appropriate, (n1) being strongly related to (b6) and (n2) being a request from existing customers. However, the company would like to quantify their impact on the overall business performance in order to (also) estimate their potential contribution to the business sustainability. The results obtained by applying the algorithm are presented below.

Preliminary phase. Each existing business line was described by market needs and performance characteristics. The following support business processes were considered for the analysis: (s1) internal knowledge base repository management, (s2) employee idea management, (s3) employee skills development management. For space reasons, requirements and performance characteristics are detailed here only for one existing business line and for one support process.

For business line (b6) *general graphic design* the following requirements were formulated:

- (b6.r1) service should be fast,
- (b6.r2) results should be creative and original,
- (b6.r3) needs & wants should be understood or foreseen,
- (b6.r4) there should be a repository with demo work.

The following performance characteristics were formulated (measurement units and target values are within brackets):

- (b6.c1) deployment time [days, 2-14],
- (b6.c2) refinement steps [#, 1-3],
- (b6.c3) result scalability [#, >5 environments],
- (b6.c4) result originality [1-10 mark, >7],
- (b6.c5) repository design categories [#, >10].

For support business process (s1) *internal knowledge base repository management* the following performance characteristics were formulated:

- (s1.c1) repository topics [#, >12],
- (s1.c2) kb entries relevance [1-10 score, >7],
- (s1.c3) contribution frequency [new kb entries / employee / month, >2],
- (s1.c4) kb entry understandability [1-10 score, >7],
- (s1.c5) kb searches [hits/employee/day, >1].

The assessment of the current organizational performance level (to be further used as a reference) was made with the *business eXXplorer* software tool. The obtained values were GPL (Global Performance Level) = 40.6% and OCI (Organizational Capability Index) = 0.932.

According to the tool, this corresponds to a good level of organizational excellence (as expected for a software SME in an interdisciplinary domain). However, as the capability index is slightly smaller than 1, the company did not get adequate effects (results) based on the invested effort. The automated recommendation issued by *business eXXplorer* is to adopt minor product and process innovations and increase the effectiveness and efficiency of the processes.

Excerpts of the report produced by the tool (showing the performance level for each key business component as well as imbalances between business components and between company possibilities and results) are presented in (figure no. 3).

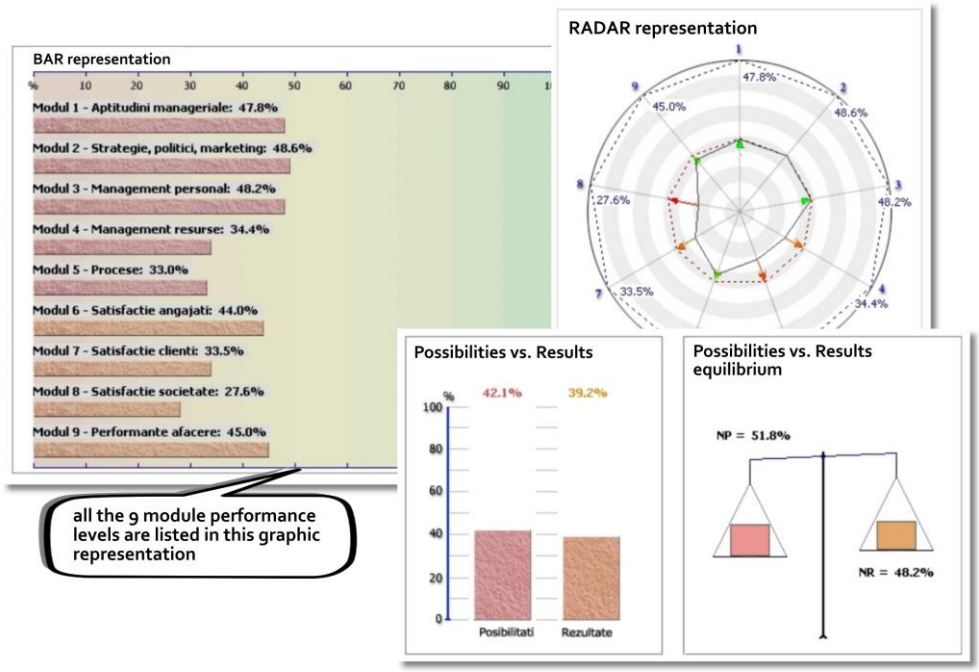

Figure no. 3: Business performance assessment key figures obtained with *business eXXplorer*

Phase one. Market requirements were identified and performance characteristics were defined for the two proposed business lines; they are summarized in (Table no. 1), values in brackets representing the requirements weights (obtained with the AHP method) and the performance characteristics measurement units, target values and weights (obtained by using the QFD method).

Table no. 1: Requirements and performance characteristics for the proposed business lines

Line/Process	Requirements	Performance Characteristics
(n1) branding & identity services	• visual identity theme should be original [13%] • needs & wants should be understood / foreseen [21%] • additional support (e.g. for a professional blog) [18%] • help in gathering feedback on brand [19%] • help in raising awareness on the brand/identity [29%]	• visual identity theme originality [1-10 mark, >7, 16%] • visual identity refinement steps [#, 3, 19%] • brand impact reports [# (frequency), 2/year, 30%] • additional tools [professional blog / local events / etc, >6, 35%]
(n2) general HR services (both targeted to companies in the life sciences sector)	• assistance in HR planning (recruitment, selecting, training, evaluation etc) [32%] • assistance in employee remuneration strategies [17%] • assistance in employee performance management [33%] • assistance in employee relations management [18%]	• phases of Employee Lifecycle supported [#, >4, 28%] • trainings (topics on life-sciences) offered [#, >30, 24%] • candidate database [no of CVs, >50, 48%]

Phase two. The relationships between the new business lines performance characteristics and the existing business lines requirements were analysed using the graphical support of the QFD method. Partial results (due to space constraints) are shown in (figure no. 2). A score was computed for each potential business line (representing the number of significant relationships between each new business line's performance characteristics and existing business lines requirements); (n1) *branding & identity services* scored 41 and (n2) *general HR services* scored 23.

Phase three. The relationships between the existing business lines and support processes performance characteristics and the new business lines requirements were analysed using the graphical support of the QFD method. Partial results (due to space constraints) are shown in (figure no. 4). The scores obtained were 23 for (n1) *branding & identity services* and 18 for (n2) *general HR services*.

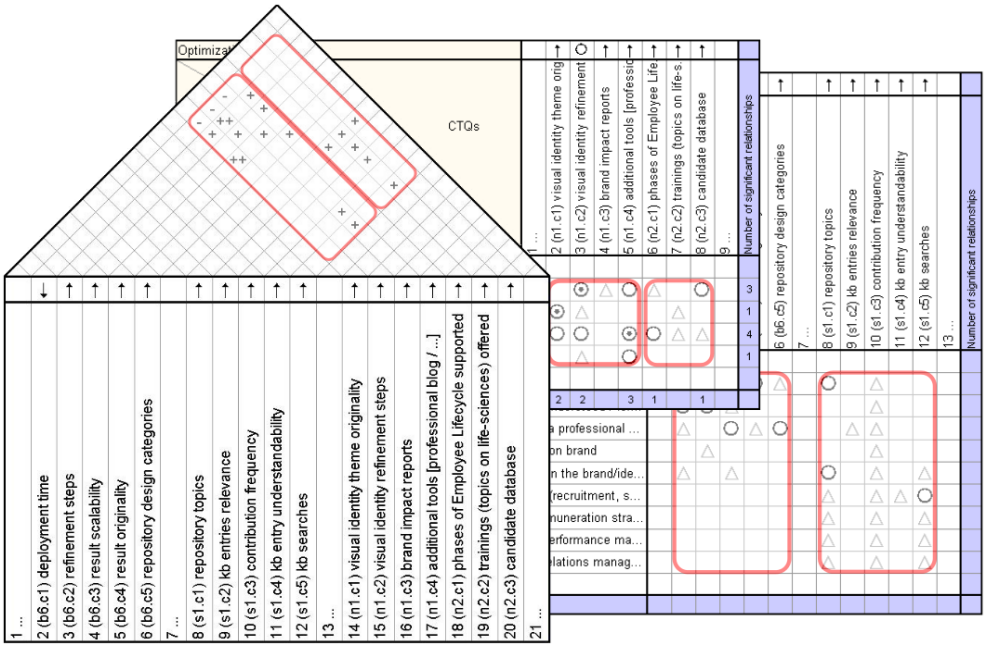

Figure no. 4: Results for phases 2-4 (using the *Qualica QFD* software)

Phase four. The correlations between the existing business lines and support processes performance characteristics and the new business line performance characteristics were analysed using the graphical support of the QFD method (the House of Quality roof). Partial results are also shown in (figure no. 4). The scores obtained (the positive correlation count) were 31 for (n1) *branding & identity services* and 17 for (n2) *general HR services*.

Phase five. Two *what-if* scenarios were constructed and then assessed using the *business eXXplorer* software tool. The scenario based on (n1) *branding & identity services* scored a GPL of 44.1% and an OCI of 1.057, while the scenario based on (n2) *general HR services* scored an GPL of 45.6% and a OCI of 1.064. Excerpts of the report produced by the tool are presented in (figure no. 5).

The *what-if* scenarios correspond to the potential situation in which each business line is started and developed, based on the requirements and performance characteristics identified above, and the estimated results are considered to be the most probable ones. A further detailed analysis could consider three potential scenarios for each business line – a pessimistic, a probable and an optimistic scenario. The probabilities of each scenario to take place could be estimated and thus the expected results could be more accurately foreseen.

While analysing the aggregate results in (figure no. 5), the scenario corresponding to the business line (n2) *general HR services* may seem more appealing, as illustrated by the GPL and OCI indicators. However, in the case of the first scenario, corresponding to business line (n1) *branding & identity services*, an increase of just 1% in the company potential leads to 6% increase in the overall results. Although the second scenario may lead to better organizational results, it might require more effort in terms of financial and human resources (as shown in the next phase).

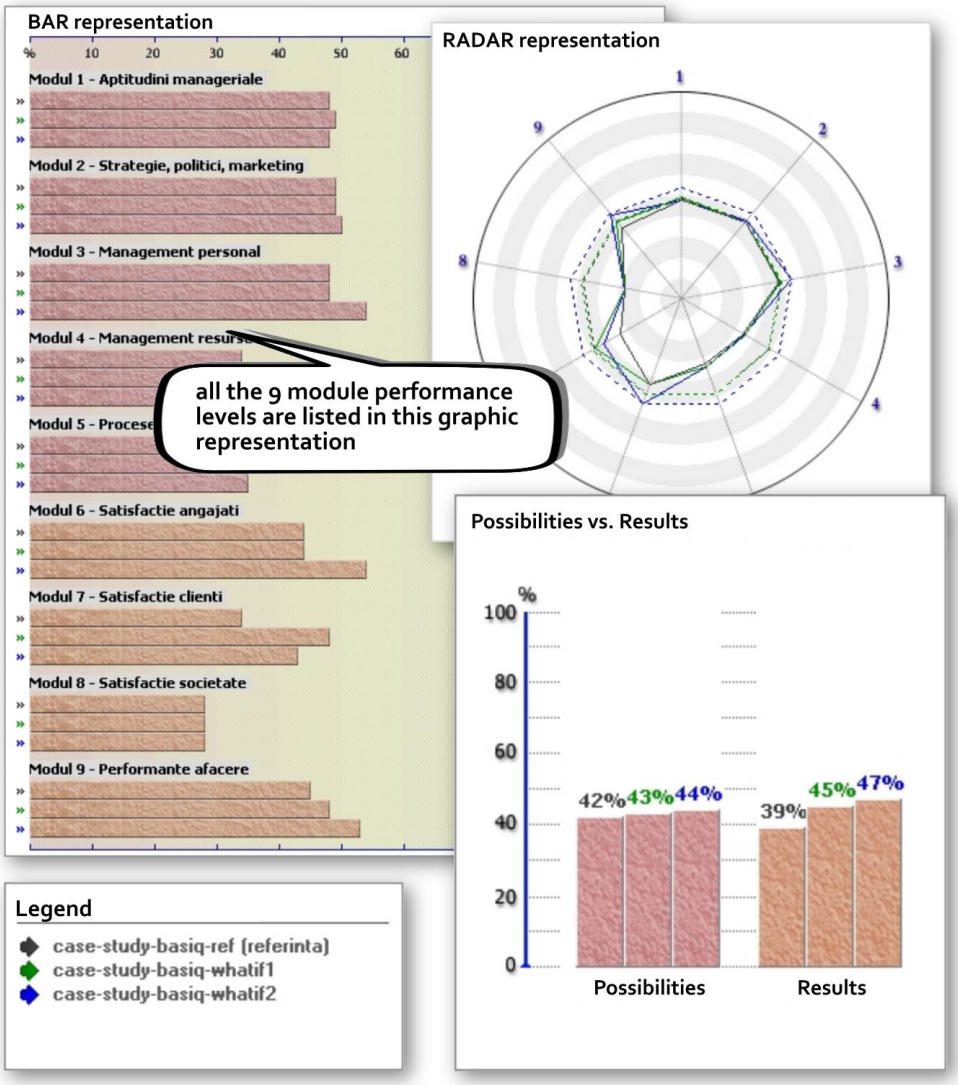

Figure no. 5: Results for the *what-if* scenarios (using the *business eXXplorer* software)

Phase six. The following criteria related to the opportunity of starting the new business lines were also assessed: (c1) financial effort, (c2) the estimated return on investment, (c3) technical and organizational difficulty, (c4) risk level, and (c5) domain financing opportunities.

The scores obtained for each potential business line (on a scale from 1 to 10) were 4 and 5 for c1, 3 and 6 for c2, 5 and 2 for c3, 5 and 4 for c4, and 2 and 6 for c5 (these scores being determined a management brainstorming meeting). As mentioned in Phase 5, (n2) *general HR services* requires more financial resources and human resource effort for implementation, although it is more appealing in terms of organizational performance increase.

Phase seven. Based on the data determined in the phases 2-6, both potential business lines are correlated with the existing ones, especially (n1) *branding & identity services*, although (n2) *general HR services* seems to have a higher impact on the organizational performance and seems to generate more revenue (but being also more difficult to implement compared to *n1*). Therefore, the management team of the company decided to start both of them, with a special focus on (n2) *general HR services.*

For a more detailed analysis of the opportunity of starting one or another business line, an aggregate score may be computed for each case, for instance using the Pugh method (Lugo, 2015). First, the criteria discussed in Phase 6 have to be ranked (the AHP method can be used for this purpose) and then a decision matrix can be completed. The matrix and the results corresponding to the two business lines considered in this case study are presented in (figure no. 6) below.

requirements:	1. (n1) branding & identity services []	2. (n2) general HR services []	Degree of importance	Requirement weight
1. new business lines QCs vs. existing business lines CRs	5	3	9	*0.09*
2. existing business lines and support processes QCs vs. the new business lines CRs	5	4	9	*0.09*
3. existing business lines and support processes QCs vs. new business line QCs	5	3	9	*0.09*
4. impact on organizational performance	3	5	24	*0.24*
5. easy to finance (1 / financial effort)	5	4	17	*0.17*
6. estimated ROI	3	5	25	*0.25*
7. technical easiness (1 / difficulty)	2	5	3	*0.03*
8. straightforwardness (1 / risk)	4	5	3	*0.03*
9. financing opportunities	2	5	3	*0.03*
weight:	*0.47*	*0.53*		

Figure no. 6: The decision matrix for the two business lines under consideration

A consistency index was computed for the criteria ranking (CI = 0.10), thus – as it is below the threshold value recommended by the AHP theory - the analysis can be considered to be consistent. As the results reveal, there are no significant differences in score for the two business lines, with the second one being slightly more appealing to be started first, which is completely in line with the managerial decision highlighted above.

Discussion, conclusions and future work

The proposed algorithm aims to be a relatively simple and straightforward tool to be used by entrepreneurs and management teams that need a decision-making support within their

related diversification strategies. It considers several facets of the problem of starting new related business lines, considering not only their potential direct benefits, but also the impact they could have on existing business lines and on the overall organizational performance. The authors consider that, in this way, sustainability can be better attained within a diversification strategy. However, no "direct" or "correct" route towards business sustainability can be determined, but a robust analysis (and planning) of diversification can nevertheless determine long-term competitiveness which in turn can determine sustainability.

Depending on the complexity of the business lines and company specific aspects, the algorithm can be applied involving a not so detailed analysis (and therefore taking less time and effort). However, an in-depth analysis based on the algorithm should be proportionally reflected in the accuracy of the results.

As the organizational performance assessment is usually done by managers (being actually a self-assessment), due to subjective reasons they have a tendency to enlarge the level of (their) achievements. Although business performance results like the Global Performance Level and Organization Performance Index computed by *business eXXplorer* may be significantly altered, the analysis in Phase seven uses only the estimated differences of the above indicators within the considered scenarios, so – as long as evaluations done by managers are consistent (even if overrated) – the results of the algorithm should not be significantly affected. The same tendency may apply for assessing the other criteria like financial effort, technical and organizational difficulty or risk level.

Regarding future work, to maximize the acceptance level of the proposed algorithm within SMEs (where planning tools like the ones used in this paper are not that common), a software tool to implement the algorithm is foreseen.

Acknowledgements

Support within the project PPN-II-PT-PCCA-2013-4-1319 *innDrive* is acknowledged with gratitude.

References

Aggarwal, A., Chan, F. and Tiwari, M., 2013. Development of a module based service family design for mass customization of airline sector using the coalition game. *Computers & Industrial Engineering*, 66 (4), pp. 827-833.

Brad, S., Fulea, M., Brad, E. and Mocan, B., 2009. Systematic Integration of Innovation in Process Improvement Projects Using the Enhanced Sigma-TRIZ Algorithm and Its Effective Use by Means of a Knowledge Management Software Platform. *Informatica Economică,* iss. 4, pp. 75-89.

Brad, S. and Fulea, M., 2006. An Innovative Software Tool for Assessing Business Excellence. In: University of Miskolc, *MicroCAD International Scientific Conference*, Miskolc, Hungary, 16-17 March 2006. Miskolc: Univeristy of Miskolc.

Bowen, H., Baker, H. and Powell, G., 2015. Globalization and diversification strategy: A managerial perspective. *Scandinavian Journal of Management*, 31(1), pp. 25-39.

Boz, I., Yiğit, I. and Anıl, I., 2013. The Relationship between Diversification Strategy and Organizational Performance: A Research Intended for Comparing Belgium and Turkey. *Procedia - Social and Behavioral Sciences*, iss. 99, pp. 997-1006.

Candea, D., 2007. Conjectures about the Relationship among Business Sustainability, Learning Organization, and Management Systems Integration. *Review of Management and Economical Engineering*, 6 (5), pp. 138-143.

Duhaime, I., 2015. *Diversification Strategy.* [online] Available at: <http://www2.gsu.edu/~wwwsmg/ba8993.html> [Accessed 3 March 2015].

Fulea, M., Ilies, A., Brad, S., Brad, E., Mocan, B. and Murar, M., 2014. An Innovative Approach on Prioritizing Internal Improvement Projects within SMEs. In: Popescu D., *2014 International Conference on Production Research – Regional Conference Africa, Europe and the Middle East and the 3rd International Conference on Quality and Innovation in Engineering and Management*, Cluj-Napoca, Romania, 1-5 July 2014. Cluj-Napoca: Technical University of Cluj-Napoca.

Klewitz, J. and Hansen, E.G., 2014. Sustainability-oriented innovation of SMEs: a systematic review. *Journal of Cleaner Production*, iss. 65, pp. 57-75.

Linnenluecke, M. and Griffiths, A., 2010. Corporate sustainability and organizational culture. *Journal of World Business*, iss. 45, pp. 357-366.

Lugo, J.E., 2015. *Pugh Method: How to decide between different designs?* [online] Available at <http://blogs.nd.edu/jlugo/2012/09/24/pugh-method-how-to-decide-between-different-designs/> [Accessed 1 July 2015].

Meier, H., Roy, R. and Seliger, G., 2010. Industrial Product-Service Systems - IPS2. *CIRP Annals - Manufacturing Technology*, iss. 59, pp. 607–627

Schonsleben, P., Vodicka, M., Bunse, K. and Ernst, F.O., 2010. The changing concept of sustainability and economic opportunities for energy-intensive industries. *CIRP Annals - Manufacturing Technology*, iss. 59, pp. 477–480.

Park, K. and Jang, S., 2013. Effects of within-industry diversification and related diversification strategies on firm performance. *International Journal of Hospitality Management*, iss. 34, pp. 51-60.

Seliger, G., Severengiz, S. and Weinert, N., 2008. Sustainable Industrial Value Creation Nets. In: CIRP, *The 15th CIRP International Conference on Life Cycle Engineering*. Sydney, Australia. Sydney: CIRP.

Teece, D., 2015. Diversification, Relatedness, and the New Logic of Co-Creation. In: J. Wright, ed. 2015. *International Encyclopedia of the Social & Behavioral Sciences*. 2nd ed. s.l: Elsevier. pp. 585-588.

The European Foundation for Quality Management, 2015. *The European Foundation for Quality Management*. [online] Available at <http://www.efqm.org/> [Accessed 3 July 2015].

The Malcolm Baldrige National Quality Award, 2015. *The Malcolm Baldrige National Quality Award*. [online] Available at <http://asq.org/learn-about-quality/malcolm-baldrige-award/overview/overview.html> [Accessed 3 July 2015].