The Selection and Training Framework (STF) for Managers in in (e-)Business Innovation Transformation Projects-The Literature Review

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Abstract

In this article, as one in a planned series of articles related to the research of failure rates in business transformation projects, the authors present the literature review. This research deals with one of the riskiest factors in transforming a traditional business environment (BE) into an innovative and automated BE: the role of the business and (e-)business transformation manager (BTM). The current literature has not sufficiently investigated the BTM's capacities to carry out such projects and especially his or her capacities to finalize the implementation phase. There is a lack of a holistic approach to the topic. This research phase concentrates on the resources related to the optimal BTM profile, one who would be capable of successfully completing the implementation. Therefore, this literature review verifies the resources related to the preferred BTM characteristics that make it possible to cope with complex e-business automation projects; projects which mainly fail because of the BTM's lack of concrete knowledge required for the implementation. It is important to understand that these projects need a set of specific skills. This set of skills must also encompass the knowledge of real-time integrated business environments, knowledge of organizational behaviour-change and implementation know-how. The researchers recommend the profile of a polyvalent technocrat as the base profile for the BTM of such projects that require cross-functional skills.

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1. Introduction

In this article, one of a series of articles related to the research on business innovation and transformation, the authors focus on the literature on the characteristics of the business transformation manager (BTM) [1]. Currently a selection and training framework (STF) is being designed [2] to assist in the selection of a BTM who would be able to carry out the business transformation and to successfully conclude the implementation. This framework will propose to the executive management the optimal BTM profile, through the use of a tuneable heuristics model [3][26].

The authors started from the fact that only around 12% of organizations successfully manage innovation related to business transformations. Therefore there is a crucial need for a specialized and automated way of selecting and training the future BTM, i.e. one who is capable of implementing such complex systems [5][6]. In the literature exploration phase, the authors favour mainly the just-in-time hands-on holistic approach to knowledge. This knowledge is compulsory for the BTM, especially in the project implementation phase [7][8].

In this research, the authors would like to apply an innovative and unconventional research method; that is by combining 1) the business engineering domain, 2) business integration techniques, 3) management sciences and 4) the link to innovation and technology. At the same time, they want to avoid an old-fashioned method of massive literature scanning. Therefore, the focus is on a systemic spiral approach.

This article’s main purpose is to offer a generic overview of a significant problem, endemic to business and related research work. The literature review will prove the existence of a possible gap and the necessity of this work [11]. The actions within this phase consisted of reviewing journal articles, books, frameworks, projects, dissertations and conference papers, relevant to the research question or the subareas of the researched topic. The literature review research localized important books and methodologies, where transformations of business environments and brands were significantly present [13].

After the selection of major books, the authors had to adopt those insights that were useful, while they noticed a lack of significant handling of (e-)business transformation failures in a holistic and hands-on manner. At the moment of writing, the authors found that there were few credible literature items that could be considered for serious usage and adoption; thus they consider the research topic as acceptable [6][12].

2. The research review database

The research knowledge database, containing the literature review, stores descriptions, summaries, and critical evaluations of each work that the authors estimated as relevant. Researching of complex fields such as (e-)business transformations, using a holistic approach, might generate a complex research pattern. In addition, the pattern description might be difficult to interpret. Unfortunately, that is intrinsic to such topics. The authors hope that the valuable reader accepts this approach that combines: 1) (e-)business transformations, 2) education of managers, 3) decision support systems, 4) business processes, 5) heuristic models and 6) business information systems [24].

The literature review constitutes an important section in this research [18]; its purpose is to provide the background and the justification for the research model design and hence define the gap [7], knowing that the research question has been formulated [8].
The reviewed literature was stored into different literature categories and a final category was defined and focused on. This research project's model and knowledge management system, or simply the database, is a database system used to store the retrieved relevant works. The purpose of the database is to enable quick access to information and to facilitate the development of future works. The authors have implemented all these elements, trying to ensure full compatibility with the requirements from the literature review design. This database will be used in the research prototype to define the model factors.

All research findings are stored in the database as indexed research items, as shown in Fig. 2. These stored knowledge items are grouped into clustered knowledge sets, which are concrete objects of the research model. Knowledge items may generate factors or variables (dependent and independent) that may be used in the research model, which is in fact a primitive decision support system. The authors use the term "heuristics" to replace the word "primitive". In Fig. 1 the database is shown as a backbone of the heuristic literature review system.
3. Design of the literature review

There are crucial reasons for a long planning period and for investing efforts in the literature review [19][7]. The literature review is a jumpstart for the design of the research model [20]. The idea is to use the literature review phase to tune the research model. Bruce, for example, has published widely on the topic of the literature review, and has identified six elements that are important for the development of the literature review [20]. These elements comprise:

- A list of resources that are used for (re)search (primary and secondary resources); this list is classified in well-defined categories.
- A basic survey or prototype that will confirm the research approach. The authors developed a prototype of such a framework and a survey artefact to be handed over to the targeted company.
- A method for learning and evolution; this is achieved by creating the STF knowledge database.
- A research facilitator for future work; this point has been implemented in the research activities and this work can be easily reused.
- A final research report structure; this has been designed.

As defined in point a), the essential step is the review of relevant literature and related resources. Therefore, this phase cannot be omitted and its outcomes are feasible. The literature review phase has not resulted in serious deviations from the original research question, so the research model design is feasible. The research consistency is therefore ensured by strongly interlinking the research phases [18].
4. Publications that have influenced this research

The most important works, identified during the literature review phase, are stored in the STF database:

4.1. Primary publications and sources

The authors have created two levels of literature resources: 1) primary resources which represent the most significant works that have directly influenced their work [14][6][12], and 2) secondary resources. The authors consider their research consider their research to have built upon:

- Maamari's influence. Maamari's doctoral thesis, entitled "What is the impact of the use of information systems on job satisfaction in the commercial bank sector in Lebanon", is the most significant work because of its methodological approach and the role of technology in the financial industry of Lebanon. The context of a total Lebanese rebuild shows an excellent combination of collective business transformation capabilities and a fundamental acceptance of innovation and technology [25].

- Farhoomand's influence. Farhoomand's "Managing (e-)business Transformation: A Global Perspective" [12] is one of the main writings which influenced this work. Its holistic perspective on (e-)business and business transformations, technology and management is the main factor of the research methodologies and design.

- Works from the University of Zagreb Faculty of Electrical Engineering and Computing. One of these works, which proposes: "a methodological framework tailored to support projects running in virtual team environments. The proposed framework is characterized by iterative approach, adequate planning, monitoring and control, supported with intensified utilization of software tools and information and communication technologies", can be considered as a concrete jumpstart for an STF [4].

- Belbin's influence. Belbin's "Team Roles at Work" is an important piece of writing, which also considerably influenced this work. The BTM's basic profile can be described as a combination of Belbin's three roles: shaper, implementer, and starter [15].

- Tidd's influence. Tidd's "Managing Innovation, Integrating Technological, Market and Organizational Change" is a very important work, which influenced this research. It is a further confirmation of the importance of including innovation and technologies in the transformation process [6].

- The impact of Capgemini's survey and articles. The survey was carried out by TNS Sofres in June 2009, and comprised responses from 302 top executives of companies employing over 10,000 employees from all sectors of activity. Countries covered by the survey were: the United Kingdom (81 interviews), Germany (61 interviews), the Netherlands (80 interviews) and France (80 interviews) [16][17].

- The impact of Whitten and Bentley. Their book is of major importance for this research, because it presents an excellent design of business information systems [5].

- The impact of Uhl and Gollenia. Their handbook presents the Business Transformation Management Methodology, which strongly supports this research concept. Business Transformation Management Methodology (BTM2) is a new approach for the holistic management in business transformation projects. The methodology was developed through a holistic approach by the Business Transformation Academy (BTA), a business consulting division of SAP. An interdisciplinary team of thought leaders from psychology, information technology, strategic management, process management, and social sciences joined together to create a "360-degree" view of what business transformation means [9].

- Kelada's influence. Kelada's "Why do the majority of change initiatives fail and what to do about it - The example of TQM" is an interesting text, which influenced this work. It is a further confirmation of the importance of the problem of high failure rates. Another important point is the usage of business process management [14].
4.2. Secondary publications and sources

As mentioned, the authors have also accumulated a second set of literature resources that indirectly influenced the research. These literature resources are stored in the research database as sources of factors.

4.3. Personal Justifications

The authors were driven by their professional experience as a consultants in information systems' projects, where they encountered the complexity in the implementation of business information systems. They realized that the main issue lies in the management and coordination of such business systems; where there are a very small number of people with the required cross-functional skills. These skills which combine information systems' design & implementation coordination, business engineering and organisational skills. Added to that the authors have experienced that the academic institutions do not offer such mixed profiles. These elements have influenced this research work and the authors hope to give a set of recommendations at the end of the research.

5. Gap Analysis

The literature review was built on categories of literature to be used. The idea is to structure the work and avoid an immense mountain of information that drowns the reader and creates understandable rejection. The current literature review tries to find if there are similar approaches and to define a possible gap. The review’s secondary aim is to help in finding complementary work that can be used to support the research and define the model's factors. All the findings and associated research works are stored in the research database that will be used in the proof of concept phase, by selecting the right factors. That database is a part of the knowledge management system that stores the factors for the proof of concept.

6. This research review categories

The STF's literature review content is subdivided into the following knowledge categories:

- The Similarity Category (EQU)
- The Organizational Category (ORG)
- The Management Category (MNG)
- The Methodology Category (MTH)
- The Finance Category (FIN)
- The Educational Category (EDU)
- The Knowledge Category (KNW)
- Agile Holistic Management (AHM)
- Business Transformation Managers (BTM)

The last four categories have been chosen as the basis of the second resources level for this literature review. These categories are stored in different parts of the STF database, as shown in Fig 3. This second category of resources is a direct link to the research and it expresses the need to focus the scope of the review on only one final category, and that is the BTM category. Accordingly, the authors consider the BTM category as the most important one, and the one the research will focus on [21].
The BTM category

The primary set of publications is considered as the cornerstone of this category. In this category, the authors researched the methods related to the BTMs' profiles and to the continuous development of their capacities. These works are very important because of their relevance to the BTMs' implementation skills and are this article's most relevant findings. For a detailed analysis, scanning of this category in the STF knowledge database will be required. This category comprises: 1) The BTMs' background and education, 2) Project training and coaching, and 3) Concrete implementation capacities.

BTM category gap synthesis

How to bridge the divide between a business scholar and an implementation practitioner? In other words, the focus here is on the gap between archaic knowledge and doing, in business transformation projects. The gap that exists is not between rigorous and relevant research; it is between the relevant, or traditional, business knowledge and the useful business integration knowledge necessary for the implementation of the transformation. Hence, this emphasizes the need for a hands-on approach of the BTMs during their schooling,
9. **Link the research methodology and design**

As this research project is based on actions and on a positivist qualitative approach, the authors designed a factors-based reasoning model. In general and as far as the literature review process is concerned, ultimately the main goal of this research was to define the gap in the context of the research question and to make a strong link to the research model and design. This is achieved by extracting the relevant hypothesis and the associated factors; hence the model variables [20]. These BTM category variables are the physical link to the research design methodology and design. The authors consider that the variable **Knowledge_Doing_Gap_Metrics** is the most relevant one [7][1].

10. **The review outcomes**

The following are the outcomes of the literature review process:

- The literature review process avoided "reinventing the wheel". That should prevent the research project from failing and save valuable time. Above all, it ensures a jumpstart for other research projects.
- The authors have continued the research based on other researchers’ contributions. These researchers have reached specific results and published valuable books and articles on the topic. Reviewing their field of research allowed the authors to build on their results, existing knowledge and recommendations.
- The authors have used previous research work on the topic; both by fellow researchers and companies working in this field, such as A. Farhoomand, J. Tidd and Capgemini. This is compatible with the research approach.
- The authors believe to have improved their knowledge related to the subject area, especially in modifying their view from a **Fachidiot's** approach of a pure information system technocrat to one more aware of business integration requirements.
- The literature review, the authors have found very few important seminal works related to the research question.
- The main opposing view is a very specialized approach and probably is the main cause of business transformation failure. In this research a holistic approach is adopted, avoiding the traditional business-specialized view. The work has a holistic perspective on the research topic and related business fields. This makes it unconventional. The authors have given a holistic and intellectual depth to the researched topic, in linking and defining relations with other research works.
- The authors have designed information requirements, factors, variables and hypotheses that are the main artefacts of the research model and design.
- The authors have integrated the methods, such as the action research, as a qualitative method, with the heuristic model and the spiral model to structure and implement the research project.
- The authors are currently developing a feasible and extensible research model prototype.

The literature review followed the research question definition (as shown in Fig. 4) and initiated an extensive search in various categories of literature related to the research question. As a result, the authors feel confident that such a framework does not exist. There is definitely a knowledge gap, which is documented by the following arguments:

- There are no serious studies on the BTM's combined "holistic and practical intelligence" that is necessary for the implementation phase. For simplification, the expression "holistic and practical intelligence" can be replaced with the term "implementation capacities".
- There are no serious studies on "e-business automation transformation" initiatives, especially not in the transportation industry.
There are no serious studies that combine points a) and b). It is important that the combination of the three points justifies the notion of a knowledge gap.

11. The research gap—the justification

![STF research pattern](image)

Fig. 4. The STF research pattern.

12. Conclusion

The focus in this research is on the managers' capabilities to holistically design and implement (e-)business transformations. That is the major factor enabling real time enterprises to deliver real business performance [15].

This research presents a framework for the selection of BTMs which is based on a holistic and integrative management approach. As the work aims to qualify the BTMs' profile capacities, background and skills, which are fundamental for the co-ordination of the implementation of the transformation, the notions of business engineering are the core of this category. Therefore, the literature related to BTMs' business engineering hands-on capacities is fundamental. In addition, it is essential to make the system work and to make it accessible to eventual business users. Analysis of this category was again a new level of narrowing the research model and that contributed to finding the crucial research factors and variables, which help the selection of BTMs who are among the middle managers, and are technocrats and knowledge workers, capable of transforming the (e-)business environment [7][10].

In this research, the authors present the primary and secondary references that have influenced the research and the ones that justify its necessity. That concludes the literature review process. The main outcome is
classification of the research resources into various categories and selection of the main category that supports the research question.

This article presents the literature review outcomes and their strong links to the research design pattern of the STF framework. Therefore, this part of the project opens the door to the next research phase in which the authors will try to define the research methodology and design model in order to confirm the optimal business transformation manager’s profile.

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