Change Controlling

Suggestions for the design of Change Controlling

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Abstract

Research questions: Exploring the correlation of change controlling usage and success of change projects. Therefore this thesis investigates the characteristics of change controlling and their correlation with a successful measurement process. Furthermore, it aims to provide a proposal for a change controlling framework.

Methods: Three hypotheses are proposed. Then a two-stage method including a qualitative method and a quantitative method were adopted by this study.

Results: It was determined conclusively that the implementation of change controlling leads to a significant success of a change project. The results of this study contribute to the change management knowledge that the consideration of the three change controlling characteristics lead to project success.

Structure of the article: 1. Essay; 2. Literature Review; 3. Theoretical framework 4. Research questions & methods; 5. Detailed empirical results; 6. Conclusions; 7. About the author; 8. References

1. ESSAY

Companies are facing more frequent and larger changes in our current economic climate. In the current business environment companies need to continuously renew themselves to survive and prosper. Skilled managers face this complex business environment, full of opportunities but pitted with risks, in which they can make effective business decisions, improve interpersonal relations and meet societal obligations with the right strategy. There are several best practice methods in literature to implement change management successfully in a company. Interestingly, despite these examples, there is a high failure rate in the implementation of change management projects. There are several studies which indicate a failure rate of up to 70% of all change management projects. Apparently, implementing successful change management projects in companies is quite problematic. What are the key reasons for this high failure rate? Suggestions how to implement change in practice successfully in a company are needed. Most previous change management literature has been conceptual or case oriented in nature. Academic literature tends to be conceptual oriented, while practitioner literature tends to be case oriented. This article aims to offer a contribution to research on change management by exploring the correlation of change controlling usage and success of change projects. How do successful companies monitor the implementation of change management? Do these companies use common performance measurement frameworks? Specifically do these companies consider similar characteristics in the implementation of change management monitoring? Therefore the thesis investigates the characteristics of change

controlling and their correlation with a successful measurement process. Furthermore, it aims to provide a proposal for a change controlling. The holistic change controlling framework developed in this study draws from the findings in literature and existing empirical findings to extend change management literature. It offers fresh academics fresh insights on the significance of the successful change implementation by using change controlling. In addition it offers managers and practitioners a holistic and practical tool to monitor, communicate and review the change implementation process. This study contributes to the understanding of the relationship between change controlling and change project success. Additionaly, this study makes significant contributions to the change management literature. First, the thesis empirically derives and characterises that three attributes of change controlling influence the success of the measurement method. Specifically, these are clearly set goals, which communicate the progress and define intermediate objectives. Second, the thesis provides a summary of the current state of knowledge on change management and change controlling. Specifically, the triggers for change, a definition of change and change management, as well as the key success and failure factors of change management are presented. Furthermore the literature on change controlling is analysed, in particular the definition of change controlling, the requirements for change controlling, the evaluation of change success, and possible change controlling tools. Third, a proposal for a change controlling framework with empirically tested characteristics is made which leads to a successful change management implementation. The results of the empirical study show differences in the used monitoring tools according to the company size. In addition, the study outlines differences according to the used KPIs and the suitable KPIs described by the respondents.

2. LITERATURE REVIEW

Change Management

Organizational change is a complex phenomenon. Correspondingly the used terms and definitions are diverse. Change has been studied and researched for many years. Philosophies, theories, models and techniques abound; all aim with various degrees of credibility and success, for delivering successful organizational change (Todnem By, 2005). Although it is a frequently used concept, no commonly accepted and used definition of change exists. Even dictionary definitions list several processes as a definition for change – including substitute, replace, switch, alter, become different, convert and transform (Marshak, 2002). Change is a generic concept with many differentiations and characteristics that does not distinguish between different sources, types or magnitudes of change (Wöbken, 2010).

Like change, the term change management is widely used but not clearly defined in literature. Literature contains many change management approaches with many classifications (Adcroft, Willis, & Hurst, 2008; Dawson, 1994; Garvin, 2003; Kotter & Cohen, 2002). Murthy, 2007 defines change management as managing the process of implementing changes to reduce risks and costs of change and optimise its benefits. There are many approaches, tools and methods proposed for managing change. There is not the one “right” approach.

The most frequently quoted model of change is the one presented by Lewin, 1947. Applying force-field analysis to portray the array of forces acting on a system at any given time, he argues that even social systems which are currently not changing are newer static but exist in a quasi-stationary equilibrium. In this state, the resultant of forces that promote change and those working in opposition to it are zero. Driving forces encourage the change to occur; restraining forces attempt to maintain the status quo. Lewin distinguishes between three different phases in change processes as ‘‘unfreezing’’ from the current state, ‘‘moving,’’ and ‘‘freezing’’ (or ‘‘refreezing’’) at the new level.

Drawing from Lewin’s perspective, it is essential in any change initiative to fully understand and describe the current situation, need, or problem. According to Schein, 2010, unfreezing involves the

creation of a dissatisfaction or frustration generated by data that refute our expectations and hopes.

According to Graetz & Smith, 2009, p. 150 traditional change management frameworks represent change as a programmatic, step-by-step process with a clear beginning, center and end, largely choreographed and controlled by a transformational leader. Examples of the traditional change management approaches are, Grundy, op. 1993 power tools for change, Kanter, Stein, & Jick, 1992 ten commandments, Kotter, 1995 eight steps to transforming your organization and Hammer & Champy, 1993 business process re-engineering.

The focus on re-establishing order and stability therefore sidesteps the concept of change as a naturally occurring, on-going phenomenon which serves to nourish and affirm continuity (Graetz & Smith, 2009). Several researchers indicate that organizational change is not a linear, straightforward and sequential process, but it is iterative and complex, with unintended as well as intended outcomes (Burke, op. 2008, p. 146; Whelan-Berry & Somerville, 2010).

Change controlling

Change controlling is an elusive construct but in order to define the research scope for this thesis it must nevertheless be clearly sketched. On the one hand, organizational life is complex, ambiguous, and difficult to navigate (Peters & Waterman, 2004) on the other hand, the establishment and effective application of control processes facilitates the achievement of change aims, monitoring results both at a business unit and corporate level (Rieley & Clarkson, 2001). At the same time, the necessity of multidimensional control systems is affirming, by integration of qualitative and quantitative measures, in order to go up to value drivers (Kaplan & Norton, 2010). The monitoring or evaluation of a change process is called change controlling (Lang & Zangel, 2008). The evaluation of a change program can be done retrospectively or during a change process (Brännmark & Benn, 2012). Greif, Runde, & Seeberg, 2004 distinguish between process evaluation and result evaluation. To evaluate a change project both methods are required. During the transition, the change needs to be monitored to gauge progress (Beer, Eisenstat, & Spector, 1990). On completion, the subsequent performance needs to be monitored to ensure the organisation does not slip back into its old habits (Bourne, Neely, Mills, & Platts, 2003).

The use of performance measurement systems (PMS) is frequently recommended for facilitating strategy implementation and enhancing organizational performance (Davis & Albright, 2004). A successful performance measurement system is a set of performance measures that provides a company with useful information that helps to manage, control, plan, and perform the activities undertaken in the company (Bond, 1999; Parker, 2000; Tangen, 2005). In management accounting research, several authors categorize the uses of PMS. They adopt different labels with many overlaps and most authors neglect an empirical operationalization of the underlying concepts (Dossi & Patelli, 2008). Dossi & Patelli, 2008 present a variety of uses attributed to PMS and highlight Henri, 2006 who idea proposes a broader managerial perspective on the uses of PMS. His arguments are rooted in the classical framework developed by Simon, 1978, c1954, which deals with the use of accounting information.

The selection of performance measures and the setting of targets for these measures are seen as concrete formulations of the company's strategic choices (Lohman, Fortuin, & Wouters, 2004). Quantitative measures (e.g. financial ratios, staff turnover and number of customer complaints) are, on the one hand, easy to measure and manage. On the other hand, qualitative measures (e.g. quality, customer satisfaction, innovation, motivation, morale, leadership and customers' perception) are difficult to measure, and are often at different levels of aggregation and linked loosely, if at all, to the current strategies of the business (Bourne, Neely, Platts, & Mills, 2002).

The analysis of performance measures results provides an important sign of change effectiveness, a mechanism that serves to show if the planned improvements have been achieved (Parker, 2000). Grünberg (2003) points to the use of measurement as a monitoring tool to assess progress and results while (Lantelme & Formoso, 2000) refer to it as a way of supporting the effective evaluation of the change impacts.

Although PMS has been successfully used in conjunction with change management initiatives,

several studies have remarked how PMS can actually act as an obstacle to change (Micheli & Manzoni, 2010). Certainly, the latter happens when PMS is too pervasive, rarely reviewed or not subdivided in levels of importance, and when responsibilities are not delegated (Micheli & Manzoni, 2010; Tonchia & Quagini, 2010). Ittner & Larcker (1997), also show that several strategic control practices are negatively associated with performance. Nonetheless, even when a PMS is reviewed and redesigned to support a change in strategy, it can push the company in a direction opposite to the one intended (Micheli & Manzoni, 2010). In addition, Ford & Greer, 2005also identify a number of arguments against the usefulness of implementing change with PMS. These are (1) the reactive nature of many control systems (Schreyögg & Steinmann, 1987), (2) difficulties with goal identification and measurement (Nadler & Tushman, 1989), and (3) the intrusive nature of many monitoring-based control systems (Amsler, et al., 2001). On the other hand, the interactive use of PMS's could foster capabilities of entrepreneurship, market orientation, organisational learning and innovation. As Dossi & Patelli, 2008 suggest, they could be used as a means to generate and disseminate new strategic objectives and knowledge across the organisation.

Suggestions for change controlling

The present study suggests three characteristics which contribute to a successful application of change controlling. These are (1) set clear goals, (2) communication, (3) and set intermediate goals. This is in line with recent research that advocates formal strategy deployment processes in companies must include setting key performance indicators (KPIs) and linking the strategy to departmental and unit level objectives, with clear action plans, allocation of roles and responsibilities, tying these to performance evaluation systems and periodic review mechanisms (Hacker & Washington, 2004). Each company has to take its decisions concerning how to develop clear goals in change management projects. It is well acknowledged that changes that are initiated without an accurate analysis of contextual relevance are more likely to fail, as then they would not be aligned with the real needs of the company (Kee & Newcomer, 2008; Nadler & Tushman, 1989; Self & Schraeder, 2009). It seems obvious to assert that performance metrics should be simple and clearly defined and yet even sophisticated companies suffer from inconsistently defining terms, and so managers rarely speak the same language (Allio, 2006). As a result, employees often have difficulties in making sense of the necessity for change, in comprehending how their own operational reality will be affected, and, above all, in understanding their own critical role as contributors to the desired change. On the contrary Saunders, Mann, & Smith (2008) found companies with significant linkages between both hard practices such as choosing appropriate performance measures, identifying the business drivers for the change project planning and resource allocation and soft practices such as ensuring buy-in for the initiative through open and constructive communication, and continuous learning. Several authors stress that it is critical that change goals are developed in a way that they capture the critical essence of the desired final outcomes of the change and meet the expectation of divergent stakeholders. Clearly articulating change objectives may increase the probability of success in change implementation, but not always (Kee &Newcomer, 2008). Inadequate measurement systems have also been found to be a major reason why change efforts fail (Kee &Newcomer, 2008). There is ample evidence (Frigo, 2003) showing that good solid metrics can facilitate the implementation of a strategy, whereas poor or distorted ones actually obstruct implementation (Neely, Gregory, & Platts, 2005).

The visibility and accountability of performance are core requirements for being perceived as a strategic contributor to business performance (Ellram, Zsidisin, Siferd, & Stanly, 2002).

This study proposes a selective distribution of the reporting. It is also important to consider that the information and communication must be adapted to the cultural environment of the company and its specific situation (Kirchmer, 2011, p. 60). Transparency and authenticity is especially important in change management projects. Both successes and failures respectively corrective action in change plan should be communicated. In change management projects not everything runs smoothly therefore a transparent and authentic

communication is very important to achieve trust to the change among employees. This has the positive side-effect that, trust enables sharing of important information, which should drive the promotion of a workplace and service safety culture (Cox, Jones, & Collinson, 2006; Jeffcott, Pidgeon, Weyman, & Walls, 2006). It needs also to be considered that communication is not a one way street; therefore feedback options for employees are important. Therefore qualitative measures of employee surveys are important. In addition, the more relevant the content of a survey to business strategy, the more it informs progress against that business strategy by giving management critical feedback (Wiley, 2012).

Indicators on dashboards often lack adequate context, which weakens their impact and side-tracks executives struggling to interpret them (Allio, 2012). Therefore Allio (2012) recommends a better designed dashboard indicator which injects both judgment and some sharp observations about the causes and implications of this same performance data.

The transformation of a company should also include short-term goals that can be tracked to show executives and employees that progress is being made toward the ultimate vision and that the long journey will be worth it (Kotter, 2012). Milestones are a simple but powerful tool: specific, pivotal activities or events that occur along the implementation path that reinforce the sense of progress the company is making, or signal the alert if implementation is lagging (Allio, 2006).

It is important to consider that real transformation takes time and the loss of momentum and the onset of disappointment are real factors. Therefore celebrating successes in reaching or exceeding targets is another tried and true method to motivate employees, and enhance the relevance of strategic planning overall (Allio, 2006). The celebration of short-term gain will provide proof that efforts are working and add to the motivation of employees to keep going (Kotter, 2012).

To summarize, setting clear goals for company's change can result in better managing - often forcing executives to clarify the structure of their company, encouraging employees to commit themselves to their objectives and helping them develop effective controls. Two important insights therefore emerge from these findings. First, any change must explicitly articulate, what, why and when change, in other words articulation of a change implementation strategy. Second, this strategy must address the needs of multiple stakeholders. A structured, holistic and integrated performance measurement framework would help to close the gaps between the change intent and outcome of large scale generic transformational changes. This is in line with previous research which noted that comprehensive PMS that provide crucial information about the complex linkage between inputs, processes and outputs are particularly significant in monitoring change processes and facilitate desired behavior.(Cheng, Dainty, & Moore, 2007).

3. THEORETICAL FRAMEWORK FOR CHANGE CONTROLLING

It can be stated, that the usage of a change controlling framework depends strongly on the kind of change as well as the characteristics and experience of the company. Yet every company has unique characteristics and special potentials. The present study suggests that the usage of the BSC differs according to company size, measured by the number of employees. This is based on the notion that BSC is better aligned with large companies than with small ones. The BSC model was designed in large business environments and is difficult to implement within a small environment due to a scarcity of resources and inadequate commitment to the support of the BSC design (Neely, Bourne, & Kennerley, 2003). Therefore the assumption is stated that SME use PMS which are easier to implement such as a project controlling or benchmarking.

Earlier researches stressed that there are many aspects why change management succeed, but certain aspects may be particularly significant in examining the usage of change controlling. These are (1) adequate resources, (2) identify stakeholders, (3) communication and cooperation, (4) understand and control the attitude formation processes.

Kaplan & Norton (2010) proposed that measuring company performance through BSC helps in clarifying, communicating and aligning strategic initiatives across the whole company. This is achieved through developing systematic cause and effect linkages, thereby breaking down vertical or horizontal barriers in strategy implementation. Specifically in change management projects a BSC can help in developing and sustaining competencies to facilitate change and continuous feedback processes that monitor and evaluate all stages of change implementation to address the gaps in a timely manner. The BSC helps to encompass a broader view of the company's chance goals. Different dimensions in a change controlling serve the primary purpose of ensuring that one does not overlook any important, relevant potential for a company's change success. Specifically, to achieve change objectives, whether economic or developmental, change implementation is focused in particular on the internal company structure and culture. This proposal suggests that qualitative dimensions are suitable to measure progress in the change implementation. In addition empirical data of earlier studies (Chenhall & Langfield-Smith, 2007; Hoogervorst, Koopman, & van der Flier, 2005) provide further affirmation that for example total quality-based companies and those winning quality awards are more likely to have effective performance measurement tools, with a much higher focus on non-financial measures and process measures. With the inclusion of qualitative measures the monitoring of change at once becomes more balanced and more future-oriented.

Hayes (2010, p. 432) stated that the BSC not only facilitate a development of a shared view of how and why the various change objectives are related in terms of cause and effect, but can also help to communicate the change plan throughout the company. Furthermore to increase the success probability of the project it is recommended to track and review the change objectives regularly. A structured review mechanism at department level must be implemented to monitor whether change objectives are proceeding as planned. Corrective action has to be taken wherever necessary. It needs to be defined who is responsible for measuring the progress and who is responsible for taking corrective action.

Based on the preceding discussion a BSC for change management is developed. The BSC is divided into four dimensions. These are finance, internal processes, employees and culture, and stakeholders. The four dimensions are based on the identified success and failure factors for change management. As main failure factors in change management are identified (1) the poor management of human factors, (2) the poor control system utilization, (3) focus on single issues, (4) changes are designed in a project-like way. On the other hand as main success factors are identified (1) adequate resources, (2) identify stakeholders, (3) communication and cooperation, (4) understand and control the attitude formation processes.

The selection of suitable KPIs for the four dimensions depends on the kind of change project. In addition, targets must be designed to drive and push the company to meet its change objectives. The goals need to be realistic so that employees feel comfortable about trying to execute the objective. The development and implementation of the BSC has to consider eleven principles. These are (1) invest the necessary time in the development process of the BSC, (2) set clear goals, (3) define the priority process for chance according the goals, (4) define goals to improve the key processes, (5) define goals to develop the skills of the individual to the desired objectives of the company, (6) generate a rigorous single minded focus within the company that should result in a continuous improvement routine, (6) celebrate the success of actions taken, (8) improvement will only occur with an integrated, holistic and balanced approach, (9) consider and communicate the relationship between the BSC dimension and KPIs, (10) support and clear mantle of leadership of executive management, (11) objectives needs to be tailored for each part of the company, and (12) consideration of the formal requirements of PMS.

In summary, the balanced scorecard provides a holistic monitoring framework for companies to manage a change project. Small companies which have not the resources to develop a BSC should use a project controlling in conjunction with benchmarking.

4. RESEARCH QUESTIONS & METHODS

First, three hypotheses are proposed. An expert-opinion survey was first ventured for in-depth understanding if change controlling contributes to the success of a change project and to identify possible characteristics of change controlling which support change controlling. In the second stage an empirical study was developed and conducted.

Based on the theoretical findings and the results of the expert-opinion survey the following hypotheses are proposed:

H_1: "Companies that use change controlling will have more successful change projects than those that do not use change controlling."

H_2: "The usage of change controlling becomes successful if the company considers three criteria: (1) define objectives clearly, (2) accompany the change controlling procedure particularly in a communicative way in order to make the resulting measures as well as their progress transparent, (3) subdivide the goals of change into smaller packages."

H_3: "Change controlling detects undesired developments during a change process."

A total of 282 questionnaires were received back from respondents. 278 questionnaires were considered valid observations. The response rate is therefore 11.2%. This is an acceptable rate considering response rates of e-mail surveys vary from a very low of 7% (Tse, 1998) to a high of 75 % (Kiesler & Sproull, 1986).

Eight questions within the questionnaire captured demographic and company information, which included the kind of industry, the number of employees, handled markets, the legal status, job classification, the highest educational achievement of the participant, the market situation, the project experience of the participant in years, and the kind and frequency of the change experience. In addition, the questionnaire contained screening questions to ensure that only change experienced persons would respond to the questionnaire. Fifteen different sectors were defined. A large number of companies operate in the management consulting sector (24.8%), followed by the bank sector (16.6%). The automotive sector provides the third largest value (9%). Companies belonging to sectors such as public administration (1.4%) and media (0.7%) were only weakly represented.

According to the company size the companies can be divided into three categories. The first category, small companies, consists of those which have up to 50 employees (16.9%), the second category, medium companies, comprises those employing up to 500 people (25.2%). and the third category, large companies, includes those companies with 501 and more employees (57.9%). It is expected that the company size will influence the change controlling usage.

In accordance with the market situation of the individual companies, six different categories have been defined, heavy pressure on prices, high quality requirements, high ecological awareness, strong competition for innovation, strong competition, and high time pressure. Categories like heavy pressure on prices (71.2%), high quality requirements (84.9%) and high time pressure (71.6%) are strongly represented. In contrast the category high ecological awareness (47.8%) reached the lowest representation. It is expected that the market situation has an influence on the usage of change controlling. This is based on the assumption that a highly competitive market environment necessitates the usage of change controlling because the management has to align the company to market pressure.

The total of 278 responses consisted of 111 respondents (39.9%) who held senior management positions, including CEOs, directors, heads of main departments, and heads of finance and controlling departments. In addition 80 respondents are in a project manager position (28.8%). These positions are directly followed by consultants (15.8%) and controllers (7.9%). For the next screening question, participants indicated the number of years they have in project experience. This question was mandatory, so respondents could not proceed to the next question without answering. Most participants have more than seven years of experience (64.7%). The second largest group in this section consists of 57 respondents (20.5%) with four to six years of experience. These values are followed by the third

group with one to three years of experience (14%). The smallest group with less than one year of experience is represented by only 0.7%.

A large number of participants have change project experience in the area of organizational structure (94.9%) and organizational processes (94.6%). These figures are closely followed by participants who have experience in the area of organizational strategy (80.2%) and a smaller group of participants with experience in organizational culture (60.8%). In the area of organizational processes (37.4%) and organizational structure (22.3%) most participants have experienced change projects five times or more.

In summary, the participants have the necessary experience and position to evaluate if change controlling can contribute to a successful change management project. Their experience also enables them to decide whether characteristics of change controlling are positively correlated with the overall success of such a project.

5. DETAILED EMPIRICAL RESULTS

The findings are broken down into three subsections according to the three research hypotheses. The first aim of the empirical investigation was to identify whether the change controlling is positively associated with the success of a change project (H_1). The Table 1 shows the current usage of PMS among respondents. A ranking of the usage of performance measurement systems was conducted by computing the means for the user group of change controlling. The ranking outlines that project controlling, benchmarking, audit and the balanced scorecard are the most frequently used PMS among the companies with change controlling.

Table 1
Usage of performance measurement systems

	N	Mean	SD	Std. Error Mean	Rank
Project controlling	181	4.20	.874	.065	1
Benchmarking	181	3.31	1.424	.106	2
Audit	181	3.11	1.534	.114	3
Balanced Scorecard	181	2.77	1.333	.099	4
Business Excellence Model (EFQM)	181	1.99	1.474	.110	5
Tableau de board	181	1.61	1.565	.116	6

In general, small and medium companies are expected to make less use of PMS, e.g. due to a lack of human and financial resources and limited strategic planning (Garengo & Bititci, 2007). The present study confirms the general observation of earlier works. Therefore a transformation of the data to two groups, SME and large companies, is conducted. The Table 2 illustrates the current usage of PMS among respondents according to the company size. A ranking of the usage of performance measurement systems was conducted by computing the means for the two company size groups. The results show that the usage of PMS is higher in large companies than in SME. In addition the ranking of the PMS is very similar. Only audit and benchmarking differ in the ranking between the two groups.

Table 2
T-test for PMS usage according to the company size

	Large (161)[a]			SME (117)[a]				
	Mean	SD	Rank	Mean	SD	Rank	t	Sig.
Project controlling	3.98	1.018	1	3.58	2.328	1	-1.715	.088
Audit	3.14	1.581	2	2.50	1.710	3	-3.215	.001*
Benchmarking	3.05	1.809	3	2.77	1.637	2	-1.349	.179
Balanced Scorecard	2.59	1.697	4	2.20	1.631	4	-1.952	.052
Business Excellence Model	1.84	1.716	5	1.68	1.478	5	-.837	.403
Tableau de board	1.47	1.796	6	1.45	1.368	6	-0.68	.946

* $p < .01$ (difference is statistically significant).

[a] No. of respondents.

In general it is expected that the usage of PMS depends on the market circumstances. If the market is highly competitive in several areas the companies need to align their organisation to these circumstances and therefore they need a monitoring system. A correlation test was run to examine how the market circumstances correlate with the PMS usage. Therefore a transformation of the six market description items to the construct "market description" (MD1) is computed. Table 3 shows that the market circumstances and the PMS usage strongly correlate with each other, showing that they bear strong relationships. The highest correlation to market description shows project controlling (PMS5), $r (278) = .758$, $p < 0.01$. In addition the various usage of PMS usage correlates with each other. But the correlation is not as high as with market description. These results imply that the market circumstances correlate with the PMS usage and that components of the various PMS are used together in change projects.

Table 3
Correlation of market description and used PMS

	MD1	PMS1	PMS2	PMS3	PMS4	PMS5	PMS6
Market description (MD1)							
Balanced Scorecard (PMS1)	,741**						
Business Excellence Model (PMS2)	,351**	,565**					
Benchmarking (PMS3)	,721**	,520**	,454**				
Tableau de board (PMS 4)	,356**	,404**	,612**	,377**			
Project controlling (PMS 5)	,758**	,298**	,271**	,341**	,240**		
Audit (PMS6)	,629**	,296**	,500**	,311**	,406**	,378**	

** Correlation is significant at a 0.01 level (2-tailed).

Furthermore a ranking of the used KPIs in change projects was conducted by computing the means of the user group. The ranking shows that classic KPI's such as cost efficiency, financial indicators, progress report, sales data, and operation data are the ones which are used most frequently. Qualitative KPIs such as employee survey, customer satisfaction or qualitative descriptions of the situation are used less often by the respondents. Table 4 outlines the results of the ranking.

Table 4
Usage of KPI's in change projects

	N	Mean	SD	Std. Error Mean	Rank
Cost efficiency	181	3.71	1.057	0.79	1
Financial indicators	181	3.63	1.212	0.90	2
Progress versus implementation schedule	181	3.60	1.124	0.84	3
Sales data	181	3.56	1.314	0.98	4
Operation data	181	3.52	1.191	0.88	5
Customer satisfaction	181	3.29	1.063	0.79	6
Depends on the change project	181	3.15	1.249	.093	7
Qualitative description of the situation	181	3.04	1.125	.084	8
Periodic qualitative description of the situation	181	2.97	1.152	.086	9
Informal comments from customers	181	2.92	1.173	0.87	10
Employee survey	181	2.81	1.170	.087	11

In order to compare the means between users and non-users of change controlling, a t-test was carried out. Results of the t-Test are shown in Table 5. It can be observed that respondents who use change controlling generally tend to agree on the positive influence of change controlling on the success of a change management project. Therefore H_1 is supported. It should be noted that the results of the t-Test may have limitations due to unequal samples since 181 participants were users and 97 non-users of change controlling.

Table 5
t-Test for influence to success between change controlling users and non-uses

	User (181)[a]			Non-User (97)[a]				
	Mean	SD	Rank	Mean	SD	Rank	t	Sig.
helps to be in time of the project	4.09	.818	1	3.78	.904	1	2.769	.006*
helps to achieve the scope of the project	4.01	.888	2	3.73	1.056	2	2.217	.028*
helps to achieve the business goals	3.89	.849	3	3.61	.896	4	2.540	.012*
helps to involve employees into the project	3.79	.925	4	3.63	1.024	3	1.293	.198
helps to be in cost of the project	3.78	.952	5	3.61	1.026	4	1.356	.177
helps to satisfy the goals of stakeholders	3.69	.933	6	3.53	1.032	6	1.312	.191
helps to satisfy the project team	3.59	1.100	7	3.53	1.242	6	.435	.664

* $p < .01$ (difference is statistically significant).

[a] No. of respondents.

The ranking of the various success items was obtained by computing the means of the groups of users and non-users. It is evident that all respondents are conscious about the fact that change controlling helps to achieve certain goals within a given time frame and complete the project, covering its entire scope. But there are noticeable differences between the mean values of the two groups. The mean of the two first-ranked items of the non-users is approximately .30 points lower than the mean of the user group. Together, both groups seem to value the influence on all success items. Low rankings of the influence on the satisfaction of the project team and the goals of stakeholders are very close together.

A correlation test was also run to examine how various judgements of success correlate with each other. Table 6 shows that all judgements of success significantly and strongly correlate with each other, showing that they bear strong relationships.

A strong correlation between various criteria may imply that they are similar to each other or overlap one another and hence can be reduced by using factor analysis. However, it should be noted that some of these judgements of success are quantitative where as others are qualitative in nature. Combining them through a factor analysis would not serve any purpose.

Table 6
Correlation among the judgments of success

	S1	S2	S3	S4	S5	S6	S7
helps to achieve the scope of the project (S1)							
helps to be in time of the project (S2)	.445**						
helps to be in cost of the project (S3)	.459**	.525**					
helps to satisfy the goals of stakeholders (S4)	.285**	.291**	.476**				
helps to involve employees into the project (S5)	.347**	.321**	.426**	.576**			
helps to achieve the business goals (S6)	.349**	.379**	.353**	.373**	.496**		
helps to satisfy the project team (S7)	.209**	.215**	.369**	.362**	.346**	.344**	

** Correlation is significant at a 0.01 level (2-tailed).

Moreover a t-test was conducted to compare and rank the means between users and non-users according to the suitability of KPIs for change controlling. Table 7 shows the results. It can be seen that respondents regardless, whether or not they use change controlling, tend to generally agree about their rating perception of suitable KPI's for change controlling, except for operation data and cost efficiency, on which they show statistically significant difference. These results imply that there is insufficient evidence to conclude that change controlling users perceive suitable KPIs differently from non-users. In addition, there are some noticeable differences between the rankings of suitable KPIs and the used KPIs. For example, sales data is high in usage but low in suitability. Customer satisfaction and employees survey got high ratings in the suitability of KPIs but middle and low ratings in the usage. The results of this study are consistent with former research results (Mauboussin, 2012; Rich, 2007) which indicate that executives often resist abandoning existing metrics in favour of more-suitable ones.

Table 7
t-test about suitability of KPI's among users and non-users of change controlling

	User (181)[a]			Non-User (97)[a]				
	M[b]	SD	R[c]	M[b]	SD	R[c]	t	Sig.
Customer satisfaction	3.92	.900	1	3.75	.990	2	1.403	.152
Operation data	3.84	.864	2	3.42	.922	4	3.747	.000*
Cost efficiency	3.75	.971	3	3.37	1.044	5	3.030	.003*
Employee survey	3.62	1.023	4	3.80	.996	1	-1.409	.160
Financial indicators	3.47	.975	5	3.29	1.108	8	1.405	.161
Depends on the change project	3.43	1.235	6	3.23	1.342	9	1.274	.204
Progress versus implementation schedule	3.40	1.048	7	3.19	1.083	10	1.632	.104
Informal comments from customers	3.30	1.095	8	3.43	1.154	3	-.959	.338
Qualitative description of the situation	3.30	1.028	9	3.33	1.087	6	-.197	.844
Periodic qualitative description of the situation	3.28	1.029	10	3.32	1.056	7	-.289	.773
Sales data	3.15	1.048	11	3.12	1.013	11	.238	.812

* $p < .01$ (difference is statistically significant).

[a] No. of respondents.

[b] Mean.

[c] Rank.

The second goal of the thesis was to identify which factors of change controlling contribute to a successful measurement method (H_2). Therefore a transformation of the seven success items to one success construct is computed. In addition, each five items for a change controlling characteristic is transformed to a characteristic construct. These constructs are "define objectives clearly" (C2), subdivide goals into smaller packages (C3), and "communicative way" (C4). The success items consist of qualitative and quantitative success classifications. They indicate that change controlling helps to achieve certain goals within a given time frame, the cost budget and complete the project covering its entire scope as quantitative classification. In addition qualitative classifications occur by the perceptions that change controlling helps to involve employees into the project and to satisfy the goals of stakeholders as well as the project team.

To investigate if there is a statistically significant correlation between dependent variable "success of change controlling" (C1) and the three constructs about the measurement methodology, a correlation is conducted. Table 8 provides the correlations which illustrate that the correlation coefficient has a positive value for all three measurement constructs and the success dimension. This means that the consideration of the three methods increases the success of change management by using change controlling and vice versa. The strongest positive correlation can be found between success (C1) and the subdivision of goals into smaller packages (C3), $r(278) = .874$, $p < 0.01$. Therefore, H_2 is supported.

Table 8
Correlations among the measurement methodology to success

Construct	C1	C2	C3	C4
Success of change controlling				
Define objectives clearly	.748**			
Subdivide goals into smaller packages	.874**	.670**		
Communicative way	.697**	.717**	.599**	

**. Correlation is significant at the 0.01 level (2-tailed).

In order to analyse the three characteristics of change controlling in more detail three correlation analysis with the dependent variable "change success" (C1) and the fifteen items of the three constructs are computed. Each characteristic construct has five items. The first construct is defining clear goals. Table 9 shows that all five items significantly and strongly correlate with each other and success of change controlling. These results imply that the consideration of all characteristics leads to success of change controlling. The strongest correlation with success has the item "prioritization of goals" (CG3), r (278) = .603, $p < 0.01$. This item is followed by "holding the controlling slim", r (278) = .535, $p < 0.01$, and "define objectives clearly" (CG1), r (278) = .485, $p < 0.01$. On the other hand "holding the controlling slim" has the lowest correlation values to the other CG items. However, the results show that the items are not only interrelated but logically interconnected. This means that that these items should be seen as various aspects of the same construct, which leads by consideration in the measurement process to the success of change a change project. These results support the change controlling proposal of this study which recommends implementing change with clear and prioritized objectives. This is due to the recognition that a common company-wide understanding of the same desired results is very important for the success of a change management project.

Table 1
Correlations among the construct items CG to success

Construct	C1	CG1	CG2	CG3	CG4	CG5
Success of change controlling						
Define objectives clearly	,485**					
Implementation through clear targets	,466**	,632**				
Prioritization of goals	,603**	,429**	,399**			
Holding the controlling slim	,535**	,201**	,209**	,165**		
A common goal throughout the company.	,431**	,255**	,375**	,268**	,317**	

**. Correlation is significant at the 0.01 level (2-tailed).

The third goal of the thesis was to identify the change controlling characteristics, identify gaps or deviations in the progress of the implementation and if it contributes to the success of a change management project (H_3). Therefore a correlation was computed. Table 10 provides the correlation coefficients which have positive values for the correlation between success and deviation identification, r (278) = .796, p < 0.01. This means that the identification of deviations of change goals increases the success of change management by using change controlling and vice versa. Thus, H_3 is supported.

Table 10
Correlation between deviation identification and success

Construct	C1	C5
Success of change controlling (C1)		
Identify gaps or deviations in the progress of the implementation (C5)	.796**	

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation test is also run to examine how the items of the construct identify gaps correlate with each other and the success dimension (C1). Table 20 outlines that all items significantly and strongly correlate with each other and the success dimension. The highest correlation with the success dimension has the item "identify and analyse possible problems" (IG4), r (278) = .701, p < 0.01.

Table 11
Correlations among the construct items IG to success

Construct	C1	IG1	IG2	IG3	IG4	IG5
Success of change controlling						
Identify gaps or deviations in the progress of the implementation	,409**					
Review of the project progress	,436**	,474**				
Continuous track of mile stones	,628**	,382**	,547**			
Identify and analyse possible problems	,701**	,283**	,257**	,333**		
Identification of side effects of the transition period	,654**	,390**	,340**	,441**	,483**	

**. Correlation is significant at the 0.01 level (2-tailed).

These findings imply that the proposal of this thesis is confirmed to identify gaps in the implementation of the change. The proposal is based on the finding that the implementation of change needs time and there are always deviations from the plan. In addition, it increases the transparent and authentic communication if the identified problems or deviations are reported to the affected employees.

There are a number of factors that limit the generalizability of the findings of this study. Applying any of the results of this study must be done by considering the following limitations. First, the means of the main constructs are negatively skewed. Second, the number of respondents among users and non-users of change controlling are not equal. Third, the empirical study did not distinguish between the different kinds of change and change controlling usage, but considered change projects in total.

In summary, three hypotheses are employed to examine if the defined characteristics of change controlling influence the successful execution of a change management project in order to determine whether or not differences exist between companies which use change controlling or not. It was determined conclusively that the implementation of change controlling leads to a significant success of a change project.

The results of this study contribute to the change management knowledge that the consideration of the three change controlling characteristics lead to project success. Especially the high positive impact of achievement of scope, time, and cost by using change controlling supports the hypothesis H^1. In addition considering clear definition of the objectives which are accompanied with a communication concept, and the goal segmentation into manageable packages contribute to a successful measurement method. Furthermore, it is supported that change controlling helps to detect undesired developments during a change process which correlates positively with a successful change management project.

6. SUMMARY AND CONCLUSION

The purpose of the article is to investigate the actual impacts of change controlling upon change project performance. More specifically, one objective was to identify if change controlling contributes to the success of a change project. Another objective was to get a better understanding of the contribution of the main determinants of change controlling and to determine the extent to which these tools assist managers. Contemporary literature reports a significant amount of change processes that fail and proposes a set of change management practices in order to enhance the success of such programs (Kotter, 1996). Nevertheless significant gaps in the understanding of how these practices work and in their effectiveness still persist. This paper expands the empirical research on change management.

Change management is a multi-faceted, multi-dimensional concept. To assess a change project's success, one needs to understand the distinct dimensions and address different timeframes - from very short to very long. Each change project has its own specific dimensions, and their relevant importance will vary. Performance measurement is one of the important aspects of change management. As there are different needs and different goals of any given change project, performance measurement should be tailored for each project.

This study contributes to the understanding of the relationship between change controlling and change project success. In addition this study makes significant contributions to the change management literature. First, the thesis empirically derives and characterises that three attributes of change controlling influence the success of the measurement method. Specifically, these are clearly set goals, communicate the progress and define intermediate objectives. Second, the thesis provides a summary of the current state of knowledge on change management and change controlling. Specifically, the triggers for change, a definition of change and change management, as well as the key success and failure factors of change management. Furthermore literature on change controlling is analysed, in particular the definition of change controlling, the requirements for change controlling, the evaluation of change success, and possible change controlling tools. Third, a proposal for a change controlling framework with empirically tested characteristics is made which leads to a successful change management implementation. The results of the empirical study show differences in the used monitoring tools according to the company size. In addition the study outlines differences according to the used KPIs and the suitable KPIs described by the respondents.

Any investigation has to employ a detailed methodology, examine a precise set of hypotheses and carry out a specific level of analysis in order to make the findings of the study valid and measurable. However, these strengths also create a set of limitations since the investigation takes place within these parameters. As far as concerning the problematic parts of such studies, these problems also hold for the empirical part of this thesis. The only way to overcome such limitations is by carrying out further similar studies in the field of change controlling in order to accumulate findings and develop a more complete picture of the topic under consideration.

There are a number of limitations that need to be considered when evaluating the results of this study. First, in the empirical part organizational change is used to refer to the research topic. Respondents filled in a questionnaire based on their experiences, though organizational change was not

specified as e.g. radical change or continuous change. However, it is very difficult to specify one type of organizational change and collect from different kinds of industry.

Second, in comparison to interviews or other types of questionnaires, electronic ones are restricted regarding the number of questions and variables that can be addressed and, being self-administered, is subject to respondent bias. Third, data was collected only from persons with change management experience who are organized in GPM or the Sparkassen Finance Group. Results also showed the influence of company size and culture, and therefore the implications for companies around the world are limited.

Fourth, as this study used self-report instruments to collect data and the majority of question statements asked the perception of variables, then it is likely that this research will be affected by common method variance problems. Suggestions to improve the empirical study include reordering the questions randomly, adding unrelated questions or designing a few reverse questions in the questionnaire to handle the outlined limitations more effectively in future research.

Fifth, the respondents of the questionnaire may have scored their own company more favourably than an objective outsider would have done. It is also possible that there are other aspects of importance to the usage of change controlling, which have not been included in the research.

In summary, according to the conclusions and limitations of this thesis, the following suggestions are drawn to contribute to future research. A larger research sample would allow a more comprehensive study of the effects of differences in company size and industry with regard to the effects of change controlling. Future studies might expand on these findings and help pursue the following topics and research agendas. The theme of this study may be extended in further research, dealing with change controlling various and varied roles depending on their location in the hierarchy and within the multi-project environment. Furthermore, since no one performance indicator or BSC dimension fits all scenarios, future studies should consider to tailor performance indicators and BSC dimensions for the different kinds of change. Finally, more cases and empirical studies are necessary to validate the usefulness of the proposed model of establishing a change controlling in depth.

The study established that the implementation of change controlling yields better results in change management projects. Future research will push the understanding of what is established within the research project of this thesis.

7. ABOUT THE AUTHOR

After studying European Business Administration at the Euro-FH, he graduated with a Master of Business Administration with focus on Change Management and Leadership from the Kempten University of Applied Sciences in 2012. Meanwhile he works as a deputy head Board of Management Services and deputy Depot-A-Manager at Kreissparkasse Heidenheim.

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