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van der Voordt, Theo; Jensen, Per Anker; Hoendervanger, Jan Gerard ; Bergsma, Feike

Published in:
Research Papers for EuroFM's 15th Research Symposium

Publication date:
2016

Document Version
Publisher's PDF, also known as Version of record

Link back to DTU Orbit

Citation (APA):
van der Voordt, T., Jensen, P. A., Hoendervanger, J. G., & Bergsma, F. (2016). A step-by-step plan to manage and measure adding value by FM/CREM. In Research Papers for EuroFM's 15th Research Symposium (pp. 40-50)

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A step-by-step plan to manage and measure adding value by FM/CREM

Theo van der Voordt
Delft University of Technology – Faculty of Architecture
D.J.M.vanderVoordt@tudelft.nl
+31 6 3925 1096

Per Anker Jensen
Technical University of Denmark
pank@dtu.dk

Jan Gerard Hoendervanger
Hanze University of Applied Sciences, Groningen, Netherlands
j.g.hoendervanger@pl.hanze.nl

Feike Bergsma
Saxion University of Applied Sciences, Deventer, Netherlands
f.h.j.bergsma@saxionl.nl

ABSTRACT

Purpose To present a new Value Adding Management model in order to support decision makers in identifying appropriate interventions to add value to the organisation, to manage its implementation, and to measure the output and outcomes.
Theory The paper builds on value adding management theories and models including the triplet input-throughput-output, a distinction between output, outcome and added value, the Plan-Do-Act-Check cycle, change management and performance measurement.
Design/methodology/approach Literature review and a cross-chapter analysis of a forthcoming book, where authors from different European countries present a state of the art of theory and research on 12 value parameters, how to manage and measure each value, and to discuss the costs and benefits of typical FM and CREM interventions to enhance satisfaction, image, culture, health and safety, productivity, adaptability, innovation, risk, cost, value of assets, sustainability and Corporate Social Responsibility.
Findings The new Value Adding Management model follows the steps from the well-known Plan-Do-Check-Act cycle. The four steps are supported by various tools that were found in the literature or came to the fore in the state-of-the-art sections of the 12 value parameters. Furthermore an overview is presented of ways to measure the 12 value parameters and related Key Performance Indicators.
Originality/value Much has been written about adding value by FM and CREM. This paper presents a new Value Adding Management model that opens the black box of input-throughput-output-outcome and which is supported by various management and measurement tools.

Keywords: Added value, FM, CREM, Plan-Do-Check-Act, Interventions, KPIs

1 INTRODUCTION

In 2009 a EuroFM research group on "The Added Value of FM" started to explore the added value of FM, both from an academic and a practical point of view.. The driver behind this collaborative research was the perception that FM gradually has shifted from primarily steering on cost reduction towards managing facilities as a strategic resource to add value to the organisation and to contribute to its overall performance. The results have been published in a first anthology on the added value of FM (Jensen, Van der Voordt and Coenen, 2012), which was launched at EFMC 2012 in Copenhagen. Since then various follow-up steps have been conducted to further increase our understanding of the added value of FM, see Table 1. The findings confirmed the need for a second anthology on adding value by FM and CREM. In this second book 23 academics from 5 countries and 13 practitioners from 6 countries share their insights and experiences with adding value by Facilities Management (FM) and Corporate Real Estate Management (CREM).

Table 1: Research on adding value – from book one to book two

Period	**Action**	**Findings and reference**
2012 EFMC Copen-hagen	First Anthology on The added value of FM – Concepts, findings, perspectives.	Academic research on the meaning of added value and value adding management. List of 50 definitions of added value, classified into use/user/customer value, economic/financial/ exchange value, social value, relationship value, and environmental value (Jensen, Van der Voordt and Coenen, 2012)
2013 EFMC Prague	Workshop by Jensen, Van der Voordt and Coenen to further discuss "How to manage and measure different value dimensions?"	Attendants interpreted added value in a different way and found it difficult to operationalise added value in clear dimensions, interventions and ways to measure.
2014	Decision to write a second anthology and to integrate the added value of Corporate Real Estate Management (CREM).	Proposal by Jensen and Van der Voordt to elaborate input-throughput-output-outcome processes and (12) value parameters.
2014 EFMC Berlin	Interviews with practitioners if/how they apply the added value concept in practice, what values are prioritised, what interventions are implemented, and how the outcomes are measured	User satisfaction, productivity and cost reduction were highly prioritised. There is a need for a coherent definition of added value and appropriate tools to measure different value parameters. (Van der Voordt and Jensen, 2014)
2015 EFMC Glasgow EuroFM report	Critical review of 21 papers from EFMC 2013, EFMC 2014 and CIB 2014 on the added value of FM and CREM	Good research to provide empirical evidence, with a focus on the benefits of interventions for particular stakeholders. Lack of integrated analysis including sacrifices (time, money, risks), and which stakeholders benefits most and least of particular interventions. Only few papers discussed the implementation of change. Lack of before-after evaluations. Insufficient building on former research. No consistency in definitions and operationalisations. (Jensen and Van der Voordt, 2015a and b)
2016	New book, entitled "Facilities Management and Corporate Real Estate Management as value drivers: how to manage and measure adding value", edited by Per Anker Jensen and Theo van der Voordt	In part I the editors open the black box of input -> throughput -> output -> outcome -> impact/added value by discussing a taxonomy of six types of interventions, the process of aligning facilities to corporate strategies, and 12 value parameters. Part II presents the state-of-the-art of concepts and research findings for each value parameter and ways to manage and measure. Part III presents a new Value Adding management model and ends with reflections, conclusions and recommendations. (Jensen and Van der Voordt, 2016)

This paper summarises chapter 17 of the new book and presents the new Value Adding Management (VAM) model (Hoendervanger et al., 2016). This VAM model is based on a review of the literature and a cross-chapter analysis of part II of the new book and aims to support decision makers in identifying appropriate interventions to add value to the organisation, how to manage its implementation, and how to measure the output and outcomes.

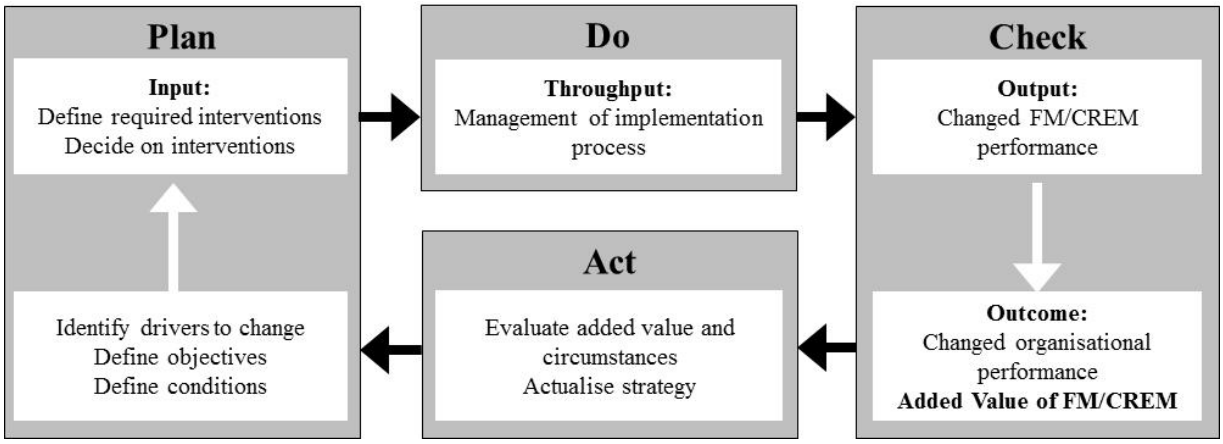
2 VALUE ADDING MANAGEMENT MODEL

We started our exploration of adding value by FM and CREM with a very simple process model according to the widely used triplet of input-throughput-output and extended it by outcome - impact/added value:

Input → Throughput → Output → Outcome → Impact = Added Value

In order to integrate VAM of buildings and facilities in business management and to make the VAM model more instrumental and applicable as a decision-support and management tool, this simple model has been extended to a more elaborated VAM model, see Figure i. Because the Plan-Do-Check-Act (PDCA) cycle – also known as the Deming cycle - is widely applied to support total quality management, we used this cycle as a leading principle to elaborate the original simple VAM model.

Figure i: New Value Adding Management model



The cyclic character emphasises that value adding management is or should be a continuous process. Evaluation of realised output/outcome/added value may be a starting point for new interventions. We also used input from other models such as the Accommodation-Choice model (Van der Voordt et al., 2012). This Accommodation-Choice model has been developed in order to support decision-makers to realise a successful accommodation policy or an improved work environment that fits with the organisational objectives and internal and external constraints and balances between the needs of all stakeholders. It suggests that each facilities change process should start with identifying why an intervention might be needed and what conceptual choices regarding facilities change are expected to optimally facilitate the organisational strategy and current and future user profiles. It further suggest that all steps from initiation to defining most appropriate interventions, its implementation and after care require continuous monitoring, evaluation and coordination. This model is supported by

various tools such as the work environment diagnosis instrument WODI, software to calculate the required number of different types of work places, a Space Utilisation Monitor, and benchmark data on employee satisfaction.

The next sections present how these insights and insights from other tools can be used to support the four steps of the PDCA-cycle. Box 1 presents an example of how the four steps can be applied in practice.

Box 1: Application of the VAM-model: implementation of a new concept for FM in schools

Plan:

The purpose of the intervention was to relieve the managers and teachers in the school for spending time on support activities and concentrate on educational activities. The intervention was to transfer the FM-related support staff at the schools to the FM department, who should be in charge of and improve the services and allow the school staff to focus on their core business.

Do:

The FM department initiated a pilot project at one school where they established a service reception as the centre of the contact between the school and the service organisation (actually a 'front office') and trained the staff to become service and customer oriented as part of the FM team, which could support and replace each other.

Check:

The evaluation of the case showed that the head master of the school had changed his time used on pedagogics versus FM related activities from 60/40% to 85/15%. Furthermore, the status of the teachers had increased, recruiting new teachers had become easier, student satisfaction had risen, and a better physical environment, reduced sickness, better service for the same money and an improved maintenance of the buildings had been achieved.

Act:

Based on the results of the pilot project the municipality decided that the FM department should implement the new FM concept in all schools in the municipality.

Source: Jensen et al. (2008)

End of box 1

2.1 Plan

The main actions in the Plan-phase are to identify the drivers to change i.e. to define if there is a gap between the desired and actual performance of the organisation and the accommodation, facilities and services, and to define which interventions may result in improved performance. It is important to define the objectives of these interventions in a SMART way (Specific, Measurable, Achievable, Relevant and Time-bound) and also to define the conditions or prerequisites that should be taken into account. The Plan phase ends with clear decisions about which interventions will be implemented and a plan how to implement.

Within the Plan-phase it is recommended to make a clear distinction between the organisational strategy and the FM/CREM strategy. Both require a strategic analysis and both may reveal drivers for change. If for example an organisation wants to enhance innovation, it seems obvious to invest in a new interior design that may stimulate creativity and support exchange of knowledge. However, reducing real estate costs in order to increase the R&D budget might be more effective. This example illustrates that there may be different ways to use FM/CREM as a means to contribute to one or more organisational goals.

Tools to identify the need for change, objectives and prerequisites
Analysing the context of value adding management may start with exploring the different roles, interests and power of stakeholders involved, using stakeholder analysis. It is relevant to make a distinction between external and internal stakeholders and end users (Ambrosini et al., 1998). Furthermore a SWOT analysis can be applied to analyse the need and direction for change. It is recommended to conduct a SWOT analysis of both the organisation and the FM/CREM processes and products to identify drivers for change *within* the domain of FM/CREM.

The value proposition model of Tracey and Wiersema (1995) may provide a useful starting point to relate a corporate strategy to particular FM/CREM value parameters. According to this model each organisation should make a fundamental strategic choice to focus on one out of three different value propositions: product leadership, customer intimacy, or operational excellence. This choice influences the selection of FM/CREM value drivers: product leadership stresses the FM/CREM contribution to innovation, whereas customer intimacy demands a focus on customer satisfaction; and operational excellence requires a productivity-oriented approach.

Another framework to support the Plan-phase is the one by Nourse and Roulac (1993). They link nine possible 'driving forces' behind a corporate strategy (e.g. market needs, technology, return on investment) to 7 components of competitive advantage (e.g. attracting and retaining customers, efficient business processes), 8 strategic accommodation choices (e.g. cost reduction, support of human resources, value creation of real estate) and 14 operational decisions (e.g. regarding the location, number of m^2, ICT, ownership and risk management).

Tools to define required interventions and to select the most appropriate ones
In the second part of the Plan-phase, the main question is how to translate the strategic focus and smart goals into appropriate and valuable FM/CREM interventions. To identify the most appropriate interventions it is recommended to create a FM/CREM strategy map. This tool, developed by Kaplan and Norton (2004), may help to identify critical success factors within chains of means/ends, which are crucial for adding value as defined in the strategic focus. The Balanced Scorecard (Kaplan & Norton, 1992) is a widely used tool to link strategic analysis to critical success factors and KPIs.

Strategic criteria are a prerequisite to select the most effective FM/CREM interventions, i.e. the option(s) with highest benefits and lowest costs. Decision support tools such as business cases can be used to select the most appropriate interventions and to support decision making processes.

2.2 Do

The Do-phase encompasses the implementation of the proposed interventions and management of the change process. Decisions to be made include who should be involved in the process and how, time schedules, how to cope with resistance to change, and how to cope with the different needs of different stakeholders. According to the strategic management model of Johnson et al. (2009), the purpose of the Do-phase is to put 'strategy in action'. A major challenge is to keep focus on the initial goals regarding adding specific values. Implementation processes tend to develop their own dynamics, which can easily shift the focus from long-term strategic organisational goals to short-term tactical and operational goals of the participants.

Tools to support the implementation of change
Change management has evolved as a specialist discipline and has produced many different tools. A tailor-made approach should be designed that fits with the characteristics of the intervention (complexity, budget, risks, time frame), the goals, and the social/organisational context. It is also in the Do-phase recommended to conduct a stakeholder analysis to define who should be involved in the process, in what way, and what their interests are. These stakeholders may or may not be the same as in the Plan-phase. The stakeholder analysis should take into account how different stakeholders perceive change, for instance by using the five-colours framework of De Caluwé and Vermaak (2003). This framework links five different change paradigms to five different management process approaches. Since a change approach has to fit with the expectations and needs of different participants and characteristics and goals of the intervention, it is often wise to combine two or more approaches. A blue-print approach to ensure that a refurbishment project will be finished in time and within budget might for instance be combined with a red-print approach for involving users effectively in the design process.

Avoiding or removing resistance to change is usually a major component of any change management approach. According to Kreitner and Kinicki (2007) there is no universal strategy for dealing with resistance, however communication is always essential and should at least include four elements: 1) inform employees about the change ('what'), 2) inform employees about the rationale underlying the change ('why'), 3) organise meetings for answering questions that employees may have, 4) let employees discuss how the change may affect them. The same principles can be applied to other stakeholders.

2.3 Check

The Check-phase requires measuring the costs and benefits of the intervention(s) and the performance of the organisation and its facilities before and after the implementation of the intervention(s), and a check if the changed performance fits with the organisational strategy, mission, vison and objectives and as such adds value to the organisation. The Check-phase starts during or after the implementation of the selected interventions and measures, if and to what level the objectives have been attained, if the performance of the organisation and FM/CREM actually has been improved, and if the improved output and outcome adds value to the organisations.

Tools to check interventions on its aimed outcomes and impact
Table 2 presents a selection of possible interventions and tools to measure the output and outcomes that came to the fore in part II of the new book. Usually various measuring tools are combined in a so-called Post-Occupancy Evaluation (POE), also called evaluation of buildings-in-use (Preiser and Vischer, 2004; Van der Voordt et al., 2012).

Regarding KPIs, a distinction should be made between output indicators to measure FM/CREM performance and outcome indicators to measure organisational performance. Figure ii shows examples of input -> output -> outcome -> added value chains to illustrate the complexity of cause-effect relationships between interventions, FM/CREM performance, organisational performance and added value.

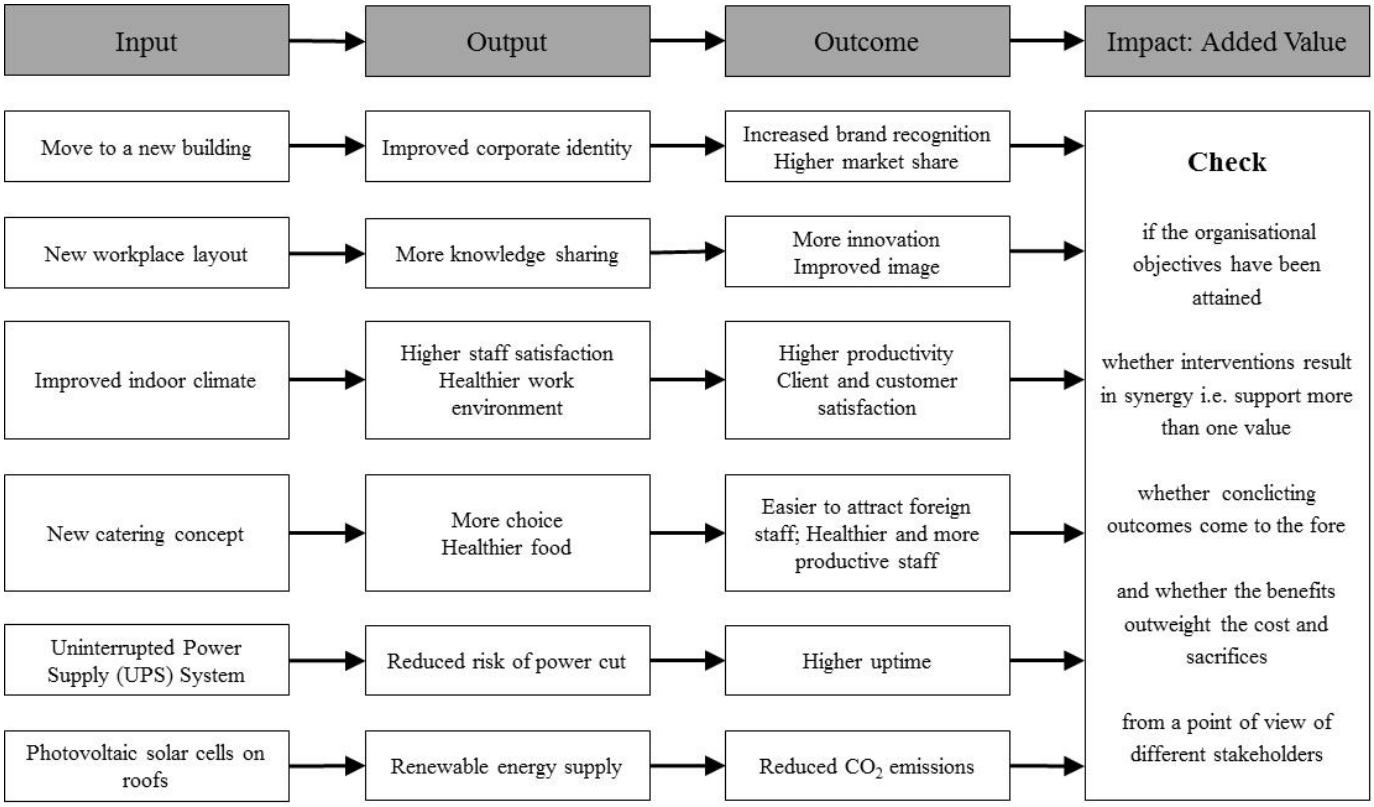
Table 2: Examples of interventions, assessment methods and KPIs

Value	**Interventions**	**Tools to measure impact**	**KPIs (Top 3)**
Satisfaction	More suitable spatial layout. More collaborative spaces. Better indoor climate.	Employee surveys. Interviews. Walk-throughs.	Employee satisfaction with: - Workplaces - Collaborative space - Indoor environment
Image	Move to a new location. High quality surroundings. Reorganisation of spatial layout.	Stakeholder surveys. Group discussions. Analysis of social media	Perceptions of Corporate identity, Corporate value, Corporate brand
Culture	More open settings to support collaboration. Shared desks/places. New behavioural rules.	Employee surveys. Observations. Interviews. Workshops.	Perceptions of - Corporate culture - Match between culture and work environment
H&S	Higher level of personal control. Ergonomic designed furniture. Better indoor air quality	Capture and react on complaints. Workplace H&S assessment.	Sick leave. Number of accidents. % of satisfied employees.
Productivity	Higher level of transparency to support collaboration. Facilities for concentrated work. Ergonomic furniture.	Observations. Measuring time spent or saved. Employee surveys.	Output per employee. Perceived support of: - Individual productivity - Team productivity
Adaptability	Surplus of spaces, load-bearing capacity, installation capacity, and facilities. Removable and relocatable units and building components.	Building performance assessment, i.e. using Flex 2.0 or Flex 2.0 Light. Observation of adaptations of the building-in-use.	Weighted assessment values, i.e. scores on scales of Flex 2.0 or Flex 2.0 Light.
Innovation and Creativity	Better visibility and overhearing. Different types of meeting spaces and informal areas. Virtual knowledge sharing ICT.	Spatial network analysis. Social network analysis. Logbooks on knowledge sharing activities.	Level of enclosure/openness. Average walking distance. Diversity of workspaces and meeting places.
Risk	Emergency and recovery plans. Back-up supply systems. Insurances.	Measuring time of business interruptions. Measuring risk expenses	Uptime of critical activities. Total risk expenses. Total insurance expenses.
Cost	Cost saving by - Establishing FM department - Process optimization - Outsourcing	Accounting with an appropriate cost structure. Measuring space, number of workstations and f.t.e.	Cost/m^2, workstation or f.t.e of Total FM, Space, Workplace
Value of Assets	Disposal of CRE. Sale and lease back. Improve owned CRE by adaptive reuse.	Estimate annual potential gross income and annual operational expenses. Market valuation. Estimate cost of new development.	Capitalization. Market value. Cost of new development.
Sustainability	Sustainability framework. Reduction of energy consumption. Reduction of travel and transport activities.	Critical success factors from corporate strategy Survey with multi-criteria scoring methodology Continuous review process.	Consumption of primary energy and water. $C0_2$ emissions. Access to transport.
Corporate Social Responsibility	Employing challenged workers. Promoting public transport. Circular purchasing model.	Depends on corporate CSR policy and target.	People: diversity of staff Planet: Utilization of space Profit: Total FM/CREM cost

For example, an outdated building or a building that cannot accommodate the growth of a company may be a driver to move to another building (input in first example of Figure ii). The move itself has to be managed and implemented (not shown in Figure ii). If the appearance of the new building or an existing building that is adapted to the requirements of this organisation fits better with the aimed image, this building can contribute to an improved corporate identity (output). This may subsequently lead to an improved organisational

performance regarding an improved brand recognition and a higher market share. Finally, if these positive outcomes support the organisational objectives and the benefits outweigh the costs of moving and possible sacrifices such as longer travel distances for various staff members, the intervention actually adds value to the organisation. Assessing the added value of FM/CREM interventions should not only include 'objective' performance measurement and benchmarking, but also a 'subjective' evaluation whether the improved performance really adds value to the organisation, the clients, customers and end users, and society.

Figure ii: Examples of input -> output -> outcome -> added value chains



A common way to evaluate KPIs is to conduct performance benchmarking internally or with external partners. The benchmarking process can be carried out according to EN15221-7 (CEN, 2012). Benchmarking is an important tool to control cost and to find areas of improvement in FM/CREM.

Whether the increased performance also adds value to the organisation depends of the mission, vision and objectives of the organisation and the trade-off between benefits and sacrifices. For example, if the objective of the organisation is to be as green as possible and to perform in a social responsible way, a reduction in energy consumption adds value, whereas if the organisation just aims to fit with legislation and the performance assessment in the Plan-phase shows, that it already fits with the legal requirements, being "more green" does not add value to the organisation (though it is very welcome from a societal point of view!).

2.4 Act

The Act-phase is quite similar to the Plan-phase but starts from a different situation. Whereas the Plan-phase may start with an analysis of changing internal or external circumstances or a strategic analysis of the strengths and weaknesses of the organisation and FM/CREM

products and processes, these factors are already known in the Act-phase. When all objectives have been attained and maximum value has been added, the Act-phase may include consolidation of the new situation, until new drivers to change come to the fore. If the objectives are not sufficiently attained or not optimally, or if too many negative side effects come to the fore, new interventions or broadening or strengthening of earlier interventions should be considered. Another option is to reconsider the objectives. It may happen that the aimed performance was not realistic and feasible within the current conditions. Moreover the context or conditions of the original objectives may be changed, which might force the organization to change its organizational and/or FM/CREM strategy. If new or revised interventions have to be implemented, the Plan- and Do-phases start again.

3. FUTURE PERSPECTIVES

In this paper we tried to connect existing models and tools to the original simple Value Adding Management model in order to make the VAM cycle more instrumental and practically applicable. Whereas many different tools are available, so far these tools are usually not integrated in a step-by-step approach. Besides, most tools focus on FM/CREM performance (output) and much less on assessing the contribution of FM/CREM to organisational performance (outcome). In much research a valuation of the trade-off between benefits and sacrifices in connection to organisational objectives (added value) and interrelationships is often lacking as well (Jensen and Van der Voordt, 2015a, 2015b).

An interesting next step could be to explore the similarities and dissimilarities between various FM/CREM models and generic management models and to integrate “the best of” in the new VAM model. This requires intensive collaboration with other support functions and knowledge fields such as HR, ICT, Finance, Marketing and PR.

Another next step could be to connect all tools to measure FM/CREM and organisational performance and related KPIs that are presented in Table 1 with other lists of KPIs such as the ones mentioned by Lindholm and Nenonen (2006) and Lavy et al. (2010, 2014). A third topic for future research is to further elaborate input -> output -> outcome -> added value relationships and to integrate current qualitative and quantitative data-collection methods to get clear and evidence-based pictures.

ACKNOWLEDGMENTS

We thank all contributors to the new book on FM and CREM as value drivers.

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