

FACILITY MANAGEMENT AS A MOTIVATOR OF NEW ENTERPRENEURIAL INITIATIVES

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ABSTRACT

The objective of the paper is to present the possibilities of FM as a contribution to value creation for user and as an entrepreneurial opportunity. To achieve value creation processes, it is necessary to have competent actors and good tools for decisions making support. The research contributes to extension of building total life, sustainability, management and entrepreneurship. The methodology and tools are a result of research project and are based on qualitative and quantitative research methods. The research findings are a result of in-depth analysis and present the possibility how to achieve more efficient business by collaboration of different stakeholders and ideas. The methods presented are mainly developed for public and private real estate sector, but the basic principles are general and relevant for other sectors. The paper will introduce better base for Asset Management, Facilities Management and added value from business and user perspectives.

KEY WORDS: value creation, costs, sustainability, users, owners.

1. INTRODUCTION

The real estate situation in several European countries globally exposes the need for changing the business strategies in accordance with the costs of servicing core business and maintaining buildings and users' needs. Better understanding of business dynamics, logistics flows, built environment challenges and opportunities, care for the environment and users' needs enable forecasting of supply and demand for service and products, and should be the key elements of business strategies. By the Facilities Management (FM) European standard EN15221, the activities are divided in two headings, named 'space and infrastructure' and 'people and organization'. The heading 'space and infrastructure' includes among others accommodation, workplace, technical infrastructure and services that provide a comfortable climate, necessary lighting, etc., cleaning, and finally other necessary space and infrastructure. The heading 'people and organization' includes among others health, safety and security; hospitality; ICT; logistics; other support services. FM can cover the whole property area and communicate on strategic, tactical and operational level. Based on the integrated position of FM within the organization and knowledge about space and people, FM can play a key role of service innovation and implementation.

As an interdisciplinary field, it covers different services areas that can support core business services to perform

more productive and satisfactory and can create value for them (Bjørberg et al, 2012). It has very strong influence on the satisfaction of the employees and end-users, thus providing facilities and services facilitating or enabling the daily activities. Satisfaction with work is one of research variables, which is important for employee effectiveness and efficiency (McLaughlin et al, 2006, Temeljotov et al, 2015). Effective and efficient supporting services from FM to core business units and clients can enrich the quality of core business and cost efficiency of organizations. Management quality is ensuring that services are delivered in a resource-efficient way (Price et al, 2015). The user involvement is a key indicator for the successful service innovation implementation, so from user's perspective FM role is seen from the possibility to develop and provide the services according to user's needs to achieve service excellence.

By strategic level of FM it is possible to collect, organize, visualize and communicate data as means for strategic planning and budgeting (Listerud et al, 2012). It is found out that FM orientation should be more focused in user's needs and value creation. From value perspective, we have to mention Rokeach (1960), according to the value is a sustainable belief, specific form of behaviour or finite state of existence, which is individually or socially more desired behavioural form from the opposite form of behaviour or finite existence. Rus (1997) sees the property market as a situation, which more than any other emphasizes the instrumental aspect of satisfying needs and action-

based orientations to the property goal, which includes also motivation. From psychological perspective, every environment surrounding ‘humanity’ has certain features, characteristics that need special attention, simply because they are very important for humans, their life, survival, living, leisure and work (Temeljotov 2005). All of these ‘directed’ attentions can be evaluated, both in the sense of satisfying their personal needs, as well as economic indicators. Value can be attributed to property at any given moment of its lifecycle: planning, initiation, growth, renewal, decay and demise. Planning and development are important elements of this process, similarly as the past, present and future development of the entire micro- and macro-environment.

In many researches, the changes of value perspectives in Facilities Management through the years were compared (Jensen et al. 2013). In the findings, they state a number of different definitions and focus points on added value of FM, dependent on the academic field and the area of application. The different research perspectives provide, in combination, a holistic view by integration of an external market based view (aimed at output) and the internal resource based view (input from FM and RE). Jensen et al. (2013) put a list of emphasis for added value of FM, including at the beginning the focus on strategic aspect of FM towards the business impacts and effects. However, one of the challenges in FM is to change the focus from ‘FM 1.0 (Cost Reductions) to FM 2.0 (Value Creation)’ (Boge 2012). A change from FM as a mean for cost reductions to FM as mean for value creation may necessitate increased outsourcing of FM, because outsourcing of FM may facilitate innovation and increased value creation. But organizations that outsource FM may also face serious obstacles to value creation, such as adverse selection and moral hazard problems (Boge 2012). Jensen et al. (2013) indicated that the success of a collaborative relationship leads to the success of value delivering to the stakeholders. From the concept of ‘Value Adding Management’, which focuses on the relationships between FM and the core business at strategic, tactical and operational levels they argued that the relationships with the stakeholders should be managed differently at each level.

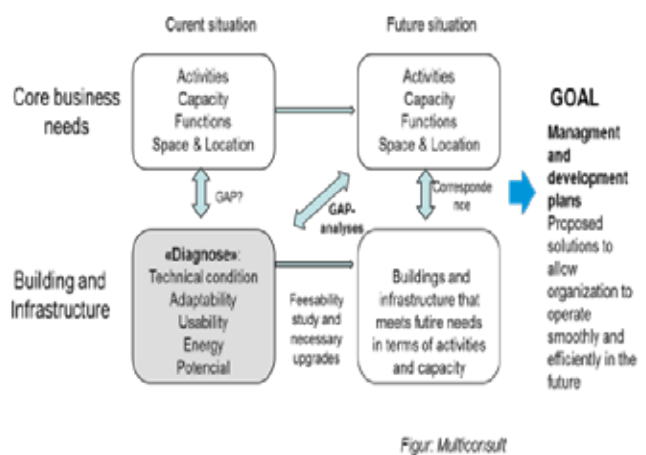
2. METHODOLOGY AND RESEARCH

The supply of business and housing units on the market can be categorized on the way of categorization according to extended care dependency scale, facility management excellence and availability of logistic services. Service innovation and service design are two approaches for further development of Facilities Management and Facility Services to maintain the users’ wellbeing. The results could serve as a starting point for development of new tools and methods for development and visualisation of improved FM and new facility services tailored to the users’ needs. The research is divided in different phases to follow the long life perspective of keeping value, adaptable for future needs in social and individual way. With a good interactive decision tool, we also want to get long life cycle building/ neighbourhood oriented competent players.

2.1 Different tools

The Nordic SURE (Sustainable Refurbishment) project, Guideline on Sustainable Refurbishment of Buildings, (Almås et al 2013) investigated different methods and tools to assess buildings and building portfolio. According to the basic principles of the project to develop a method with an indication of building development potential, simply collecting data and user friendly: MultiMap, LCA, BREEAM In-Use, SURE, SIA (Sustainable Impact Assessment) and LCC where evaluated. All of these methods and tools have different advantages. But for the purpose assessing building portfolios MultiMap combined with LCC should be considered.

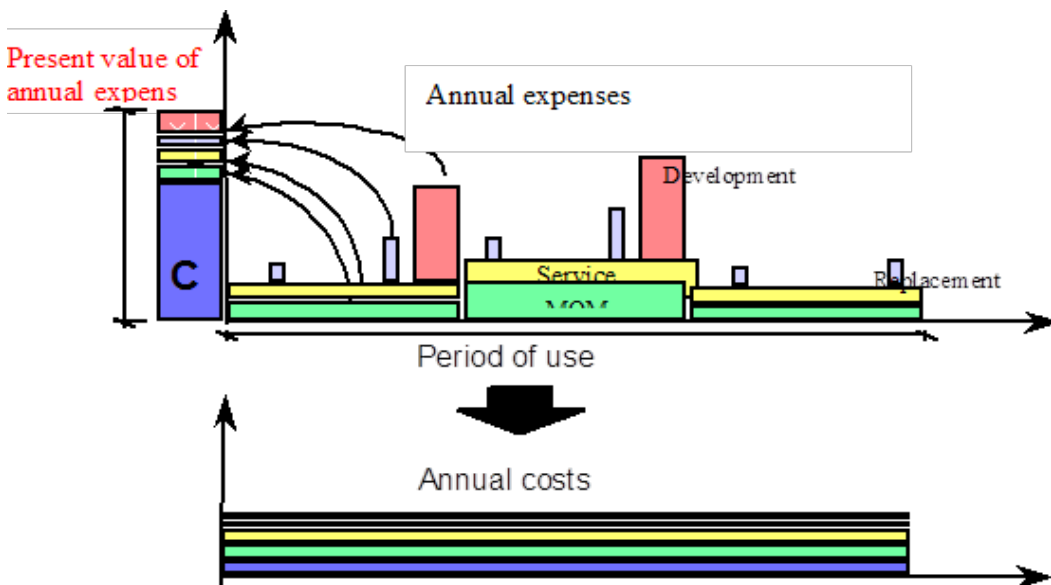
Figure 1. Holistic Analysis Model for strategic development of building portfolios (Larssen, 2011)



MultiMap as a method is based on a holistic approach shown in Fig. 1 to assess the GAP between today status of performance and future needs or demands. The assessment method is based on two main approaches: 1) data input provided by FM-personnel with good knowledge of the actual building portfolio (space and infrastructure) with some assistance from persons with knowledge about core business of the portfolio (people and organisation), 2) assessments of interviews of users of the portfolio (social and environmental aspects including economy). Collecting information for building portfolio gives a lot of data. For communication purpose of all data Onuma Planning System can provides possibility for visualising in 3D pictures.

Basic costs are rent of space, which is a “cost covering rent” based on annuity of net present costs (NPC) seen in a defined period as shown in Fig. 2. Anticipated costs over this period, such as yearly operating costs like energy, household insurance, cleaning, and public dues, and periodic costs like preventive maintenance, replacements and minor upgrading, should be taken down to NPC. NPC put back as an annuity will then be the calculated rent as a minimum to meet the anticipated costs.

Figure 2. Cost distribution over time (Listerud et al. 2012).



Needs are changing with ages and real estate and facilities management have to give answers or to find proper solutions, which should be based on new knowledge from the fields and environmental orientation. The economy model should also include increasing different service costs to develop healthy residential community, from physical and social perspective. An extended FM-model should be developed to cover all services from traditional FM and also to include other services for different groups of community population.

2.2 Research goal

The aim of the research Oscar is to develop knowledge, methods and tools that enable the optimization of the building design. In this way the building can contribute to good value creation for owners and users through its lifetime. The name Oscar is given by Oscar’s Wilde statement from the book ‘The picture of Dorian Gray’: *A fool is a man who knows the price of everything, but value of nothing.*

Four objectives are put to achieve the outcome:

- to obtain the knowledge of needs to be addressed in the early phase to maximize the values for user and owner of building;
- to identify how can existing execution models (planning, construction and commissioning) be used to achieve the goal of value creation in all phases;
- to develop methods and tools;
- to increase the knowledge of value creation and competences.

The project takes into consideration a clear connection between the design and operation of the buildings and

values for the owners and users. To get good, adaptable and usable buildings over time, competent players are needed who have good decision and communication tools for projects and processes. Life Cycle Aspect is essential as an input in Early Phase Planning, and the processes through the following phases have to assure its inclusion in a way that value creation is complied with the user phase. In accordance with the objectives of the project, the relevant stakeholder group are: owners, users, planners/designers, consultants and contractors, FM providers and society. The research is conducted by 22 project partners from three countries (Norway, Slovenia, Germany) from academic, private and public sector. All stakeholder groups are covered.

2.3 Research model

The mind-map model (Figure 3) is designed on the basis of European standard EN15221, which includes two headings ‘space and infrastructure’ and ‘people and organization’. Value creation mind-map shows the inclusion of all stakeholders within the processes to maximize the value.

Project contains four main project working groups (WG), with a goal to:

- define the knowledge how to contribute to value creation in user phase as input in Early Plan Phase – WG1;
- define execution models and processes which contribute to value creation – WG2,
- design methods and tools on cost benefit evaluation simulation model and interactive guideline - WG3,
- create a library on ‘value creation’ and disseminate the results – WG4.

The first three working groups are closely interlinked (Figure 4), the fourth one is collective and supportive one and it works in parallel from the beginning of the project. For the purpose of this paper to show the first results, the WG1 and WG2 are presented more in details.

The focus of WG1 and questions discussing in it, are:

- Characteristics on buildings and solutions which contribute to value creation for different stakeholders during the Life Cycle.
- Characteristics on buildings and solutions which do not contribute to value creation for different stakeholders during the Life Cycle.
- Are contributions to value creation of different solutions context dependent?
- Circumstances where different solutions are advantageous or not.
- What kind of competences should stakeholders have for value creation?

The WG2 is interested in:

- Which means in different phases will motivate solutions for value creation in user-phase? (contract, economy incentives and process)
- Which means can work against?
- How can means that motivate value creation be incorporated in execution models within different projects and what demands will be put on different stakeholders?
- How can execution process with regard to transmission of information ('relay baton') between stakeholders and phases take place to ensure that premises from earlier phase live up to the next?
- What methods and tools are needed to ensure a good execution process and goal-achievement regarding value creation for owner and end-user?

Figure 3. Value contribution mind map

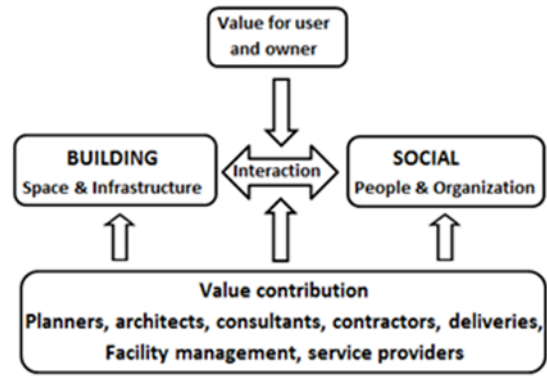
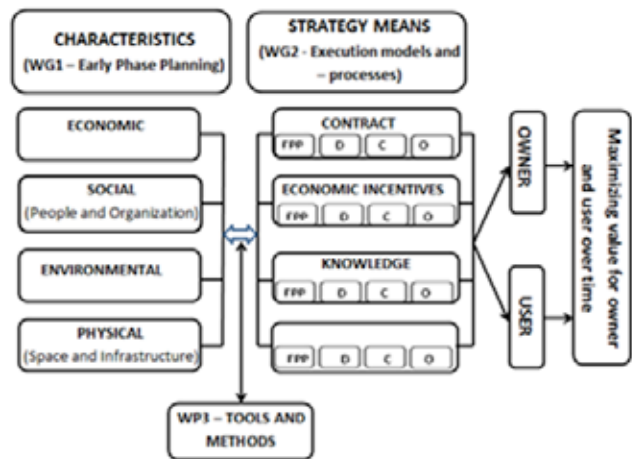


Figure 4. Value contribution model (EPP – Early Plan Phase, D – Detail Design Phase, C – Construction Phase, O – Operation (Use) Phase)



The research is led by Anne Kathrine Larssen from Multiconsult from Norway. The research methodology is based on qualitative and quantitative research methods, as: literature review, case studies, questionnaire interviews, survey and workshops.

2.4 Research results

Within the first phase of the project a list of characteristics, which contribute to value creation, and means, which motivate value creation solutions, is prepared, based on literature review conducted in autumn 2014 (Table 1).

Characteristics which were mentioned in the literature in connection with value creation, are divided in 4 subgroups: economic, social, environmental and physical. Also means are divided in 4 subgroups: economic incentives, knowledge, contract, process, and assurance quality.

Table 1 – Characteristics and means of value creation from Literature review (Oscar project)

Project group focus	Subgroups	Characteristics or Means
WG 1 – Characteristics which contribute to value creation	Economic (MOME, core business cost, investment cost, economic value)	Energy consumption, optimum FM organization, maintenance plan / cost (predictability), outsourcing /price of services, transparency of costs, cost of ownership, running / operational cost, cleaning cost, space efficiency cost, rental cost, interaction of costs (best solutions not lowest costs), project cost, cost reduction, green accounting, potential income, strong brand, market value, payback time, profitability for the core business, productivity in construction phase, environmental portfolio, long term commitment partnership, financial situation
	Social (People and organization)	Architectural value, satisfaction, indoor climate / comfort, individual control of conditions, aesthetic value, open view, layout (open /cell space), enough space, orientation, cleanliness, logistic service support, organizational value, social responsibility, location characteristics, historic value, usability (efficient workplace), accessibility, safety, security,
	Environmental	Renewable energy, energy efficiency, recycling and reuse of materials, waste management, minimize contamination, environmental friendly products, life time materials, green roofs
	Physical (Space and Infrastructure)	Technical condition, space distribution / logistic for core business, quality materials, construction quality, architectural solutions, life cycle design, environmental solutions, flexibility possibilities, elasticity possibilities, generality possibilities, designed for disabled persons, sufficient infrastructure, innovative solutions
WG2 – Means which motivate value creation solutions	Economic incentives	Environmental funds, financial support for testing new trends, branding, rewarding, cost productivity, orientation, investment loan for enhancement / replacement, changing energy consumption, combining different energy resources, emission reduction, support for maintenance and technical upgrading, support for refurbishment, tax reduction, competitiveness
	Knowledge	Good planner, good management, changing regulations, new demands from society, social awareness, user satisfaction, communication ability, creating value with society, organizational development, best practice design, developing know-how training of employees, implementing new cooperation models, developing strategic KPI, knowledge on sustainable efficient building, open for new technical solutions supporting innovative ideas, establishing creative technical teams,
	Contract	Contract process with dialogue, contract division, contract type, contract procedure, selection and award criteria, contracting plan, PPP practice, clear tasks and definitions, contract duration, financial capacity of contractor, allocation of responsibility and risks, clear specification of deliverables, performance targets, measurement methods and standards, active partnership dialogue, organizational measures, developing strategic SLA,
	Processes and assurance quality	Process management ability, communicating value, political support, user's participation, performance requirements for each phase, mechanisms and procedures for ex-ante evaluations, mechanisms for ex-post evaluations, monitoring, inspecting, evaluating, success / failure factors, key performance indicators

The specific questions were focused to students from two faculties HiOA (High School University of Applied Sciences in Oslo and Akershus) and NTNU (Norwegian University of Science and Technology) to work on bachelor or master thesis. Some results are highlighted in Table 2.

Table 2 – Characteristics and means of value creation from Students’ works

Project group focus	Sub-focus	Characteristics or Means
WG 1 – Characteristics which contribute to value creation	Contribution to Early Plan Phase	<p><u>Cooperation</u></p> <ul style="list-style-type: none"> - integrated architecture and technology from the first day - good cooperation and communication - establish a platform for quality insurance of information <p><u>Adaptability</u></p> <ul style="list-style-type: none"> - is of high importance in buildings with changing needs (ex. hospital build.) <p><u>LCC</u></p> <ul style="list-style-type: none"> - an important part from the starting point - calculation of alternatives gives opportunity to choose cost effective solutions and avoid unnecessary maintenance costs
WG2 – Means which motivate value creation solutions	PPP role in the context of Value Creation	<ul style="list-style-type: none"> - reduced conflicts due to cooperation and life cycle perspective - introduces incentives and clearer content in contracts - has a need for SLA’s in operation, maintenance and service deliveries, including condition at end of contract period - ensure maintenance, operation, management and enhancement (MOME) and quality level in the user phase

WG1 work is based on workshops and meetings with the partners. Most of the partners in the group are professionals (architect, engineers, facility managers etc.) and they have exposed uncertainty in discussions on defining and understanding ‘value creation’ in buildings. At the beginning of the work, questions put in discussion were like: what is the definition of value, how to quantify it, what is the correlation between value and cost, how to

communicate value. Many of them have never thought of value as a factor to be considered in the projects, but are usually focused on costs. After a year working in the project, general understanding was created, using the findings of Literature review and professional experiences. Based on that knowledge, also a survey was prepared. In the table 3 some emphasis are stressed from their meetings.

Table 3 – Some emphasis from WG1 findings

Project group focus	Sub-focus	Characteristics or Means
WG 1 – Characteristics which contribute to value creation	Contribution to Early Plan Phase	<p><u>Safety</u></p> <ul style="list-style-type: none"> - is found interesting and important to include in development <p><u>Operational solutions</u></p> <ul style="list-style-type: none"> - should be included from the early beginning <p><u>Users involvement</u></p> <ul style="list-style-type: none"> - is positive and important part from the beginning - to be aware that users do not care of owner’s strategic level (cost/benefit) - the communication with them should be end-product oriented (new buildings rather than strategic space management) <p><u>Multidisciplinary focus</u></p> <ul style="list-style-type: none"> - should be included from the early beginning on the equal based contribution (integrated architecture and engineering design) <p><u>Owner’s behaviour</u></p> <ul style="list-style-type: none"> - to change the trend that it is more enticing to build new building than to refurbish old ones
	To prepare good questionnaire for ex-ante control	<p><u>Value creation survey</u></p> <ul style="list-style-type: none"> - should be standardized, based on value creation for the core business - should give the answers on connection between early stage of the project (including tenant management) and the results on core business value
	To increase professional competences in value creation	<p><u>Professional competences</u></p> <ul style="list-style-type: none"> - to understand professional competences on client and supplier side - to increase the knowledge about value creation - to find good mechanism to exchange the knowledge permanently - to develop multidisciplinary orientation
WG2 – Means which motivate value creation solutions	Project management role	<ul style="list-style-type: none"> -to define roles and mandates of participants from the beginning -balancing the roles from the early phase (owner, user, manager), -preparing good management strategy to involve the user in the early stage -creating good process control from the early phase -concentrating on value creation information and following them from EPP

WG2 work is based on workshops and meetings with the partners. Most of the partners in the group are experienced professionals, so they were mostly concentrated in the key problems which could be captured by the contractual

level with the consequences on ensuring value through construction period. In the table 4 some emphasis are stressed from their meetings.

Table 4 – Some emphasis from WG2 findings

Project group focus	Sub-focus	Characteristics or Means
WG2 – Means which motivate value creation solutions	Contribution to Processes Contract Assurance quality	<p><u>Functional requirements from the beginning</u></p> <ul style="list-style-type: none"> - putting the values from user and owner perspective into contractual model - understanding the decisions/guidelines that have been adopted in early phase - to attain incentive value - selection of contractual models to keep the value for user and owner <p><u>Advantages and disadvantages of the current contract models / contract forms</u></p> <p>Shared enterprise; General contract; General Enterprise; Total enterprise; Early partnership; Late partnership; Interaction Enterprise; PPP</p> <p><u>Contractual model for the best understanding of user's and owner's values</u></p> <ul style="list-style-type: none"> - good and constructive dialogue during the construction phase - cost-effective building process - risk disclosure / distribution - balanced contractual model - interdisciplinary integrations and responsibilities clarifications - keeping incentives through the construction phase for goal achievement - good MOME addressed in a contractual model

Four special workshops with planners and designers with focus on EPP and contractual content on PPP have been

held till spring 2015. The findings so far are highlighted in Table 5.

Table 5 – Characteristics and means of value creation from Special workshops

Project group focus	Sub-focus	Characteristics or Means
WG 1 – Characteristics which contribute to value creation	Contribution to Early Plan Phase	<ul style="list-style-type: none"> - to decide crucial factors and secure them through the processes - decisions in early phase should not be easy to change later in the implementation process - if changes is to be taken the reason behind should be clarified, including consequences for core business purpose - better understanding/knowledge of core business as an important input - design team which can or should ask the right questions - integrated architecture and technology from the first day - documentation for MOME as a part of the total process
WG2 – Means which motivate value creation solutions	PPP role in the context of Value Creation	<ul style="list-style-type: none"> - introduce new roles and earlier decisions - has a need for SLA's in operation, maintenance and service deliveries including condition at end of contract period - ensure MOME and quality level in user phase - ensure a better commissioning period

3. DISCUSSION AND CONCLUSION

Value creation orientation exceeds the cost orientation of RE and FM, but still the owner' and user' benefits are measured from the perceived value of theoretical exchange value. The total solutions should bring benefit to the society.

To create value from early planning phase means that the solutions should be based on increased knowledge of core business activities, physical environment and open for future changes (technical or social). In the dialogue with the client the design team should be able to ask the right questions which are important for the value creation.

As it is stated innovation processes involve the exploration and exploitation of opportunities for new or improved products, processes and services', and 'innovation is inherently uncertain' (Pavitt, 2005). A typical innovation in service sector firms is 'interactivity', which means that services are customized or tailor made to particular customer or user needs (Miles, 2005).

A lot of good characteristics of value creation and instruments for motivating value creation were found during this short time, which is presented in tables 1-5. The very intensive discussions within working groups, students and planners show the need to sharpen the definition of value creation in the project and to achieve common understanding between all stakeholder groups.

Hotels are intensive resource users and will probably always be. But even for a hotels we claim there are potentials for reducing the negative impact on society and increase the creation of environmental, social and economic benefits, as for example to prepare environmental plan with the main focus on ways of maintaining the buildings and optimising energy consumption. There are many ways of FM services to contribute to environmental solutions (Olsen et al, 2015), if the focus allow consideration of lighting, catering, logistics, modes of transportation, purchase and green areas. Through green services, the hotel can improve its performance measured in consumption of energy, water and raw materials; use of recycled materials; green operational equipment and green suppliers.

Results and observations from discussions are put forward for further development in the project: to include operational solutions, to increase professional competences on value creation, to use multidisciplinary focus, to change the owner's behavior, to prepare a new model as constructive dialogue model in which good MOME orientation is included and keep incentives through construction phase. The interactive guideline, which has to include the model of interaction between investment, MOME cost and core business cost, is an important part of making decisions. It has to show the consequences for the core business purpose, when changes has to be taken.

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