DTU Management Engineering
Department of Management Engineering

Book presentation
FM and CREM as Value Drivers
How to manage and measure value adding

Per Anker Jensen

Centre for Facilities Management – Realdania Research (CFM)

Technical University of Denmark

CENTRE FOR FACILITIES MANAGEMENT
CFM
REALDANIA RESEARCH

DTU

Theo van der Voordt

Delft University of Technology

Centre for People and Buildings

TU Delft

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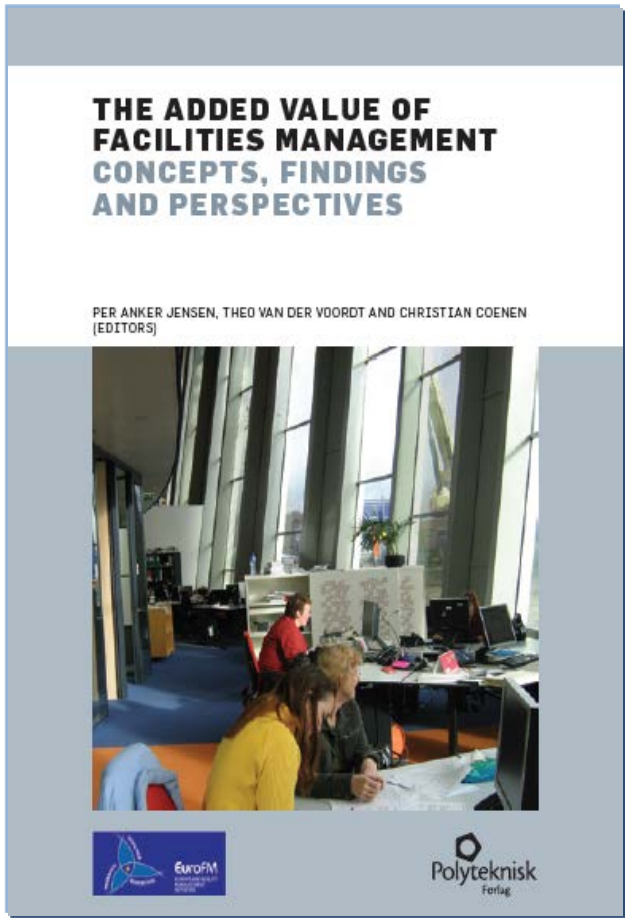
Aims of FM and CREM

Facilities Management (FM)
the integration of processes within an organisation ***to maintain and develop the agreed services*** *which* ***support and improve the effectiveness of its primary activities*** *(CEN, 2006)*

Corporate Real Estate Management (CREM)
the management of the real estate portfolio of a corporation by aligning the portfolio and services to the needs of the core business, in order ***to obtain maximum added value for the business*** *and* ***to contribute optimally to the overall performance of the organisation*** *(Dewulf et al., 2000)*

EuroFM research group since 2009



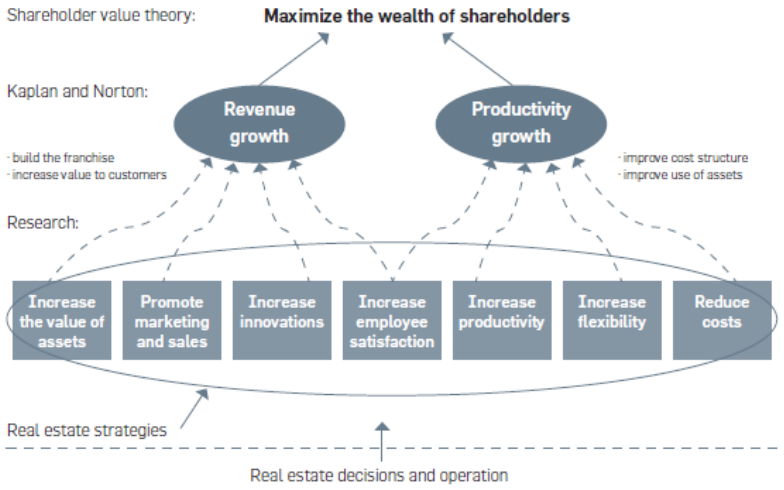
Added value of FM and CREM

*The trade-off between the **benefits** of FM/CREM interventions and the **costs and sacrifices** to attain these benefits.*

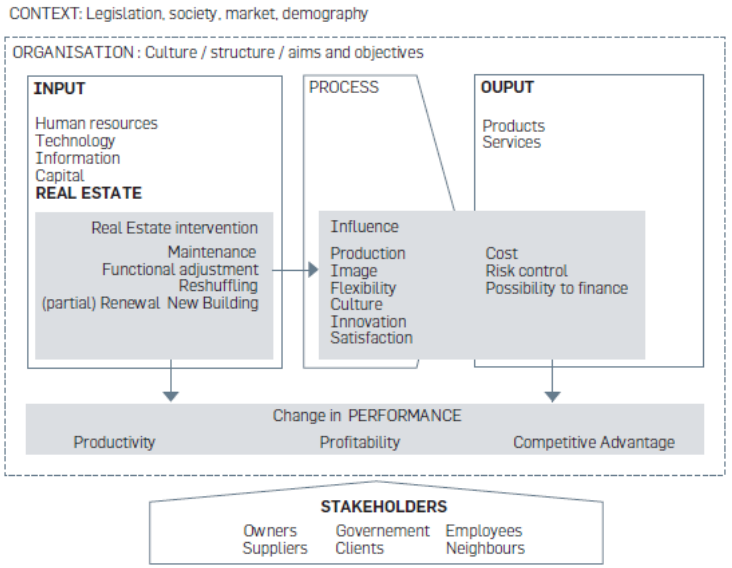
Our first book from 2012

Conclusions from our first book

- Many conceptual frameworks about added value of FM/CREM and performance measurement
- Similarities and dissimilarities - no standard
- Clear visualisations but static and not action oriented
- Need for models and tools to operationalise the different dimensions of added value
- Need for concepts and tools to manage added value



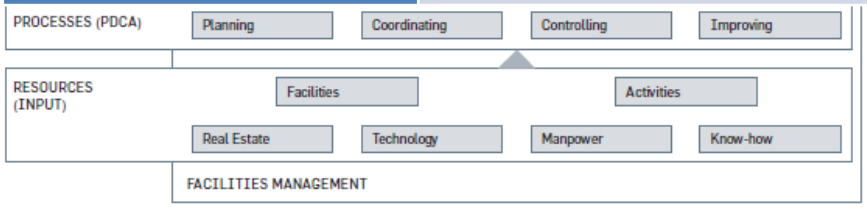
Maximizing shareholder value (Lindholm & Levainen, 2006)



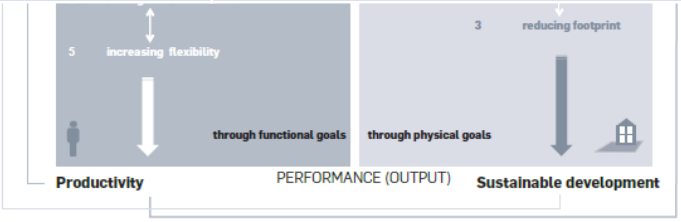
Performance by corporate real estate (De Vries et al., 2008)

Cause-effect model in the 4 conceptual frameworks

Framework	Cause	Effect
FM Value Map	Provisions / Output	Impact / Outcome
Sarasoja	Real estate decisions and operation	Added Value
De Vries	Real estate intervention	Influence / Added Value
Den Heijer	Real estate projects / Input	Added Value / Performance



FM Value Map, Jensen 2010



Managing the university campus (Den Heijer 2011)

- ❑ Too complex
- ❑ Insufficiently action oriented

Back to the basics

Intervention (What) → Management (How) → Added Value (Why)

Decision on type of change → Implementation → Outcome

Input → Throughput → Output → Outcome (Impact / Added Value)

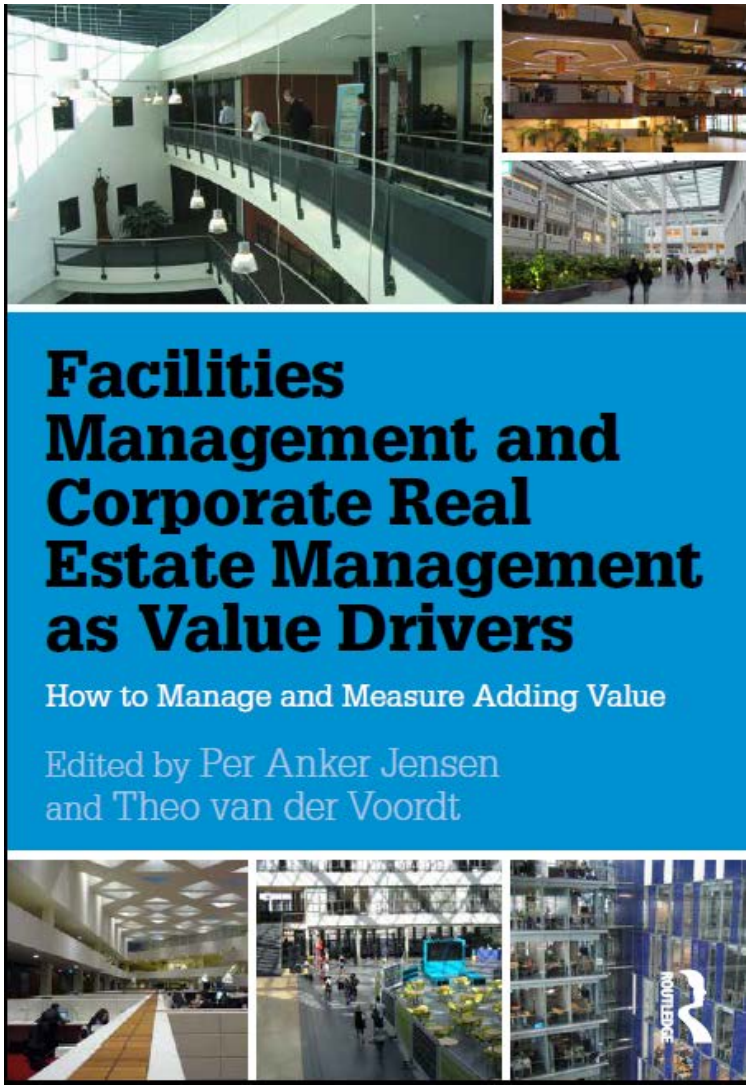
The basis for the second book

Literature review

- Added Value concept
- Modelling adding value
- Typology of FM/CREM interventions
- Research on value adding management
- Research on outcomes of interventions

About the book

- Co-authored by 23 authors
- Interviews with 13 practitioners
- Three parts:
  I. The VAM model
  II. Chapters about 12 value parameters
  III. Epilogue – tools, reflections etc.
- Published by Routledge September 2016



12 Value Parameters

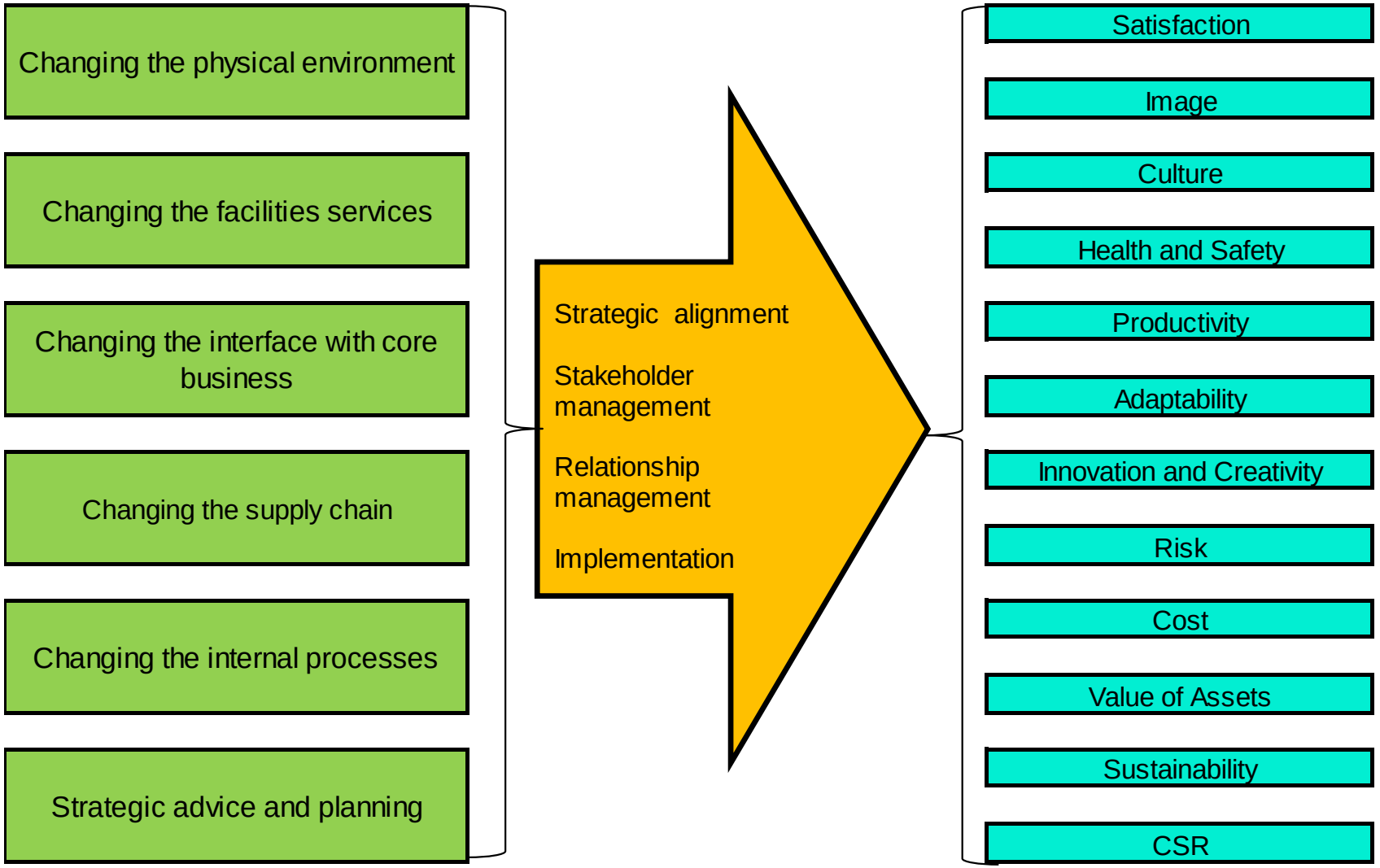
1. **People**
   Satisfaction – Image – Culture – Health and Safety

2. **Product/Process**
   Productivity - Adaptability – Innovation & Creativity – Risk

3. **Economy**
   Cost – Value of Assets

4. **Society**
   Sustainability – Corporate Social Responsibility

Value Adding Management model



Example: Health & Safety

State of the art

- Health & safety in text books
- Health & safety in FM and CREM research papers

Topics

- Indoor climate (including Sick Building Syndrome)
- Workplace layout
- Benefits and costs of various interventions
- How to measure
- How to manage
- Perspectives

Interventions	*Management*	*Benefits*	*Sacrifices*
Changing the physical environment			
Thermal comfort Improving the users' ability to control temperature and air according to individual or group preferences For instance, improvements may include more intense zoning of the work space	Implement changes in building automation systems, possibly in air-conditioning system, and training users	Improved wellbeing and reduced risk of health problems like colds and flu	Higher investment cost and possibly increased energy consumption and CO_2 emissions

Example: Health & Safety- 2 KPIs

- Actual health, e.g. measured by an annual professional medical check
- Absenteeism and sick leave (percentage of staff, number of days)
- Number of accidents, per week, per month, or annually
- Absence of employees due to accidents (percentage of staff, number of days)
- Number of complaints about health and safety that are submitted monthly to a complaints box or mentioned in an end-user survey
- Self-measurement of health and health supportive behaviour, e.g. by using wearables and apps to measure the number of steps per day, heart rate, calories, sleep etc.
- Self-reported health and safety in employee surveys, summarised in KPIs such as the percentage of (dis)satisfied employees with H&S issues in work environment surveys like the comfortmeter, an online comfort survey tool (http://www.comfortmeter.eu/).

Interventions, measurement tools and KPIs - 1

Chapter Number and Value	*Interventions Provide/create:*	*Tools to measure the impact*	*KPIs (Top 5)*
5. Satisfaction	More suitable spatial layout More collaborative spaces Extra storage space Better indoor climate Modern and attractive interior, furniture and finishing	Employee surveys Observations Interviews Walk-throughs Narratives	Employee satisfaction with: – Workplaces – Collaborative space – Indoor environment – ICT and other equipment – Amenities
6. Image	Move to a new location High quality surroundings Reorganisation of spatial layout Better/more facilities and services "Green" programme	Stakeholder surveys Group discussions Analyses of historical sources Analysis of social media and other ways of communication	Perceptions of – Corporate identity – Corporate value – Corporate brand – Media exposure – Shares and likes on social media
7. Culture	More open settings to support collaboration Shared desks/places New types of food New behavioural rules (e.g. regarding dress code)	Employee surveys Observations Interviews Workshops	Perceptions of – Corporate culture – Match between corporate culture and ❍ organisation ❍ facilities ❍ work environment
8. Health and safety	Higher level of personal control Ergonomic designed furniture Better indoor air quality, acoustics and light More healthy food Healthcare services	Capture and react on complaints Workplace H&S assessment	Sick leave Number of accidents Absence due to accidents Number of complaints about H&S Percentage of (dis)satisfied employees in surveys

Interventions, measurement tools and KPIs - 2

Chapter Number and Value	*Interventions Provide/create:*	*Tools to measure the impact*	*KPIs (Top 5)*
9. Productivity	Higher level of transparency to support collaboration Better opportunities for concentrated work Ergonomic furniture Higher level of personal control of the work environment Better supporting IT facilities and systems Healthy and safe environment	Observations Monitoring of computer activity Counting of output Measuring time spent or saved Employee surveys	Output per employee Quality of output Absence Perceived support of – Individual productivity – Team productivity
10. Adaptability	Surplus of spaces, load-bearing capacity, installation capacity, and facilities Customisability of facilities Disconnection of facilities components 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
11. Innovation and creativity	Better visibility and overhearing among employees Visual clues Different types of meeting spaces and informal areas Optimised indoor climate ICT that supports virtual knowledge sharing	Spatial network analysis Social network analysis Employee surveys Logbooks on knowledge sharing activities	Level of enclosure/openness Average walking distance Level of personal control with indoor climate Diversity of available workspaces and meeting places Perceived quality of visual clues

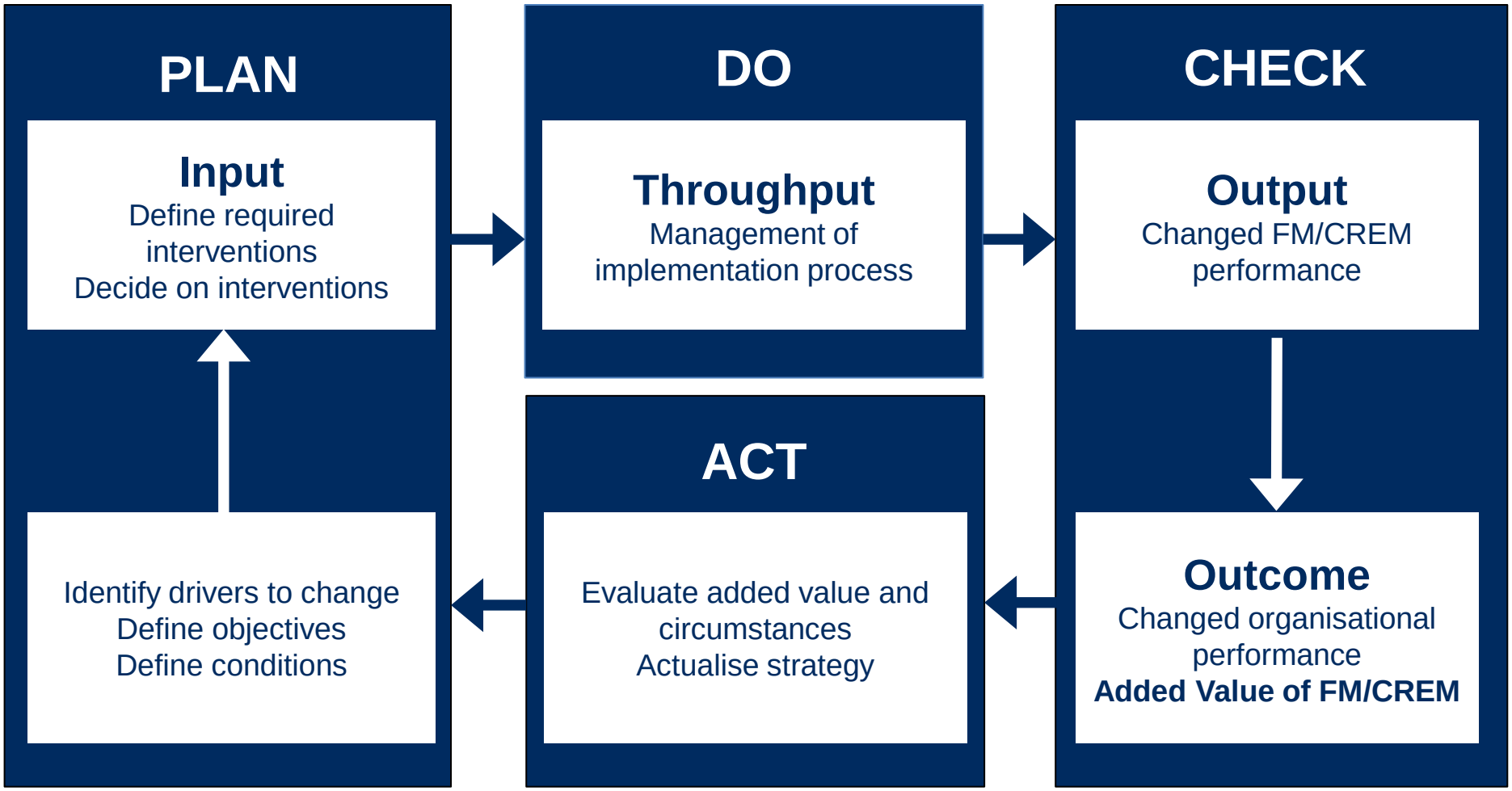
Interventions, measurement tools and KPIs - 3

Chapter Number and Value	*Interventions Provide/create:*	*Tools to measure the impact*	*KPIs (Top 5)*
12. Risk	Removing hazards Emergency and recovery plans Install security systems Back-up supply systems Insurances	Measuring time of business interruptions Measuring risk expenses • Insurance • Damage prevention • Actual damage	Uptime of critical activities Total risk expenses Total insurance expenses Total damage prevention expenses Total actual damage expenses
13. Cost	Cost saving by • Establishing own FM department • Process optimisation • Outsourcing • Technical upgrade • Utilisation of synergies	Accounting with an appropriate cost structure Measuring space, number of workstations and fte	Cost/m², workstation or fte: • Total FM • Space and infrastructure • People and organisation • Space • Workplace
14. Value of assets	Disposal of CRE Sale and lease back Renegotiate rental contract Buy leased property Improve owned CRE by adaptive reuse	Estimate annual potential gross income and annual operational expenses Market valuation Estimate cost of new development	Capitalisation Rent level Market value Cost of new development

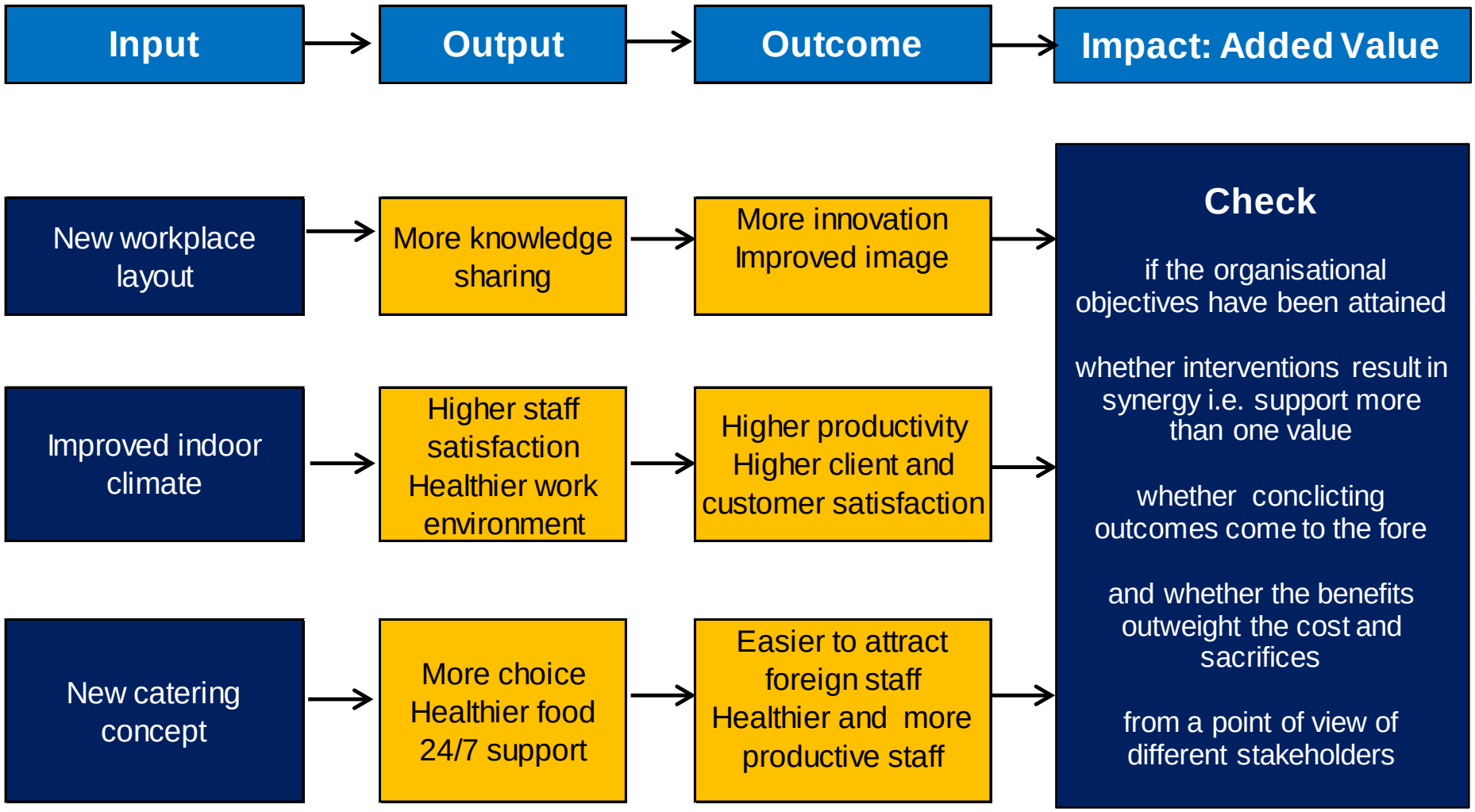
Interventions, measurement tools and KPIs - 4

Chapter Number and Value	*Interventions Provide/create:*	*Tools to measure the impact*	*KPIs (Top 5)*
15. Sustainability	Sustainability framework Staff training Reduction of energy consumption Reduction of materials use, increased recycling and improved waste handling Reduction of travel and transport activities	Identify critical success factors from corporate strategy, develop a survey and multi-criteria scoring methodology, and implement a continuous review process	Consumption of primary energy and water CO_2 emissions. Material use, recycling and waste Life cycle cost Access to transport
16. Corporate social responsibility	Higher quality of working environment Employment of challenged workers Promoting public transport Circular purchasing model Collaboration with companies owned by minorities	Depends on corporate CSR policy and target	People: • Diversity of staff • Community satisfaction Planet: • Utilisation of space • Use of resources Profit: • Total FM/CREM cost

VAM model extended with PDCA cycle



Examples of Value Adding Management chains



Step 1: PLAN

a. 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

b. Define which interventions may result in improved performance. Define the objectives in a SMART way (Specific, Measurable, Achievable, Relevant, Time-bound)

Tools

- SWOT analysis (e.g. Hill, 1989)
- Balanced Scorecard (Kaplan & Norton, 1992)
- Stakeholder analysis (e.g. Ambrosini et al., 1998)
- Value propositions (Tracey & Wiersema, 1995)
- Analysis of driving forces (Nourse & Roulac, 1993)
- Choice matrix Accommodation Choice Model (Van der Voordt et al., 2012)

Step 2: DO

a. Implementation of the proposed interventions

b. Management of the change process, including decisions on 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

Tools

- Five-colours framework (De Caluwé &Vermaak, 2003)
- Tools from Accommodation Choice Model (Van der Voordt et al. 2012
- Tools from Facilities Change Management (Finch, 2011)
- Strategies to cope with resistance (Kreitner and Kinicki, 2007)

Step 3: CHECK

a. 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).

b. Check if the changed performance fits with the organisation's strategy, mission, vison, objectives and as such adds value to the organisation.

Tools

- KPI's for FM/CREM performance and for organisational performance
- Pre- and Post-Occupancy Evaluation (e.g. Van der Voordt et al., 2011)
- Assessing Building Performance (e.g. Preiser & Vischer, 2005)

Methods: Market research, employee surveys, customer and client surveys, walk-throughs, diary research, interviews, workshops, focus group discussions, collecting "hard data' (costs, CO2 emission, energy performance, time), smart ICT based data-collection; big data, benchmarking etc.

Step 4: ACT

a. Consolidation - when all objectives have been attained and maximum value has been added
b. Adapt interventions – when objectives haven’t been obtained, in case of a dis-balance between benefits and costs
c. Reconsider the objectives (maybe too ambitious)
d. Restart the PDCA-cycle – in case of a gap between objectives and outcomes, or in case of a changing context

Tools

Same as in step 1, PLAN

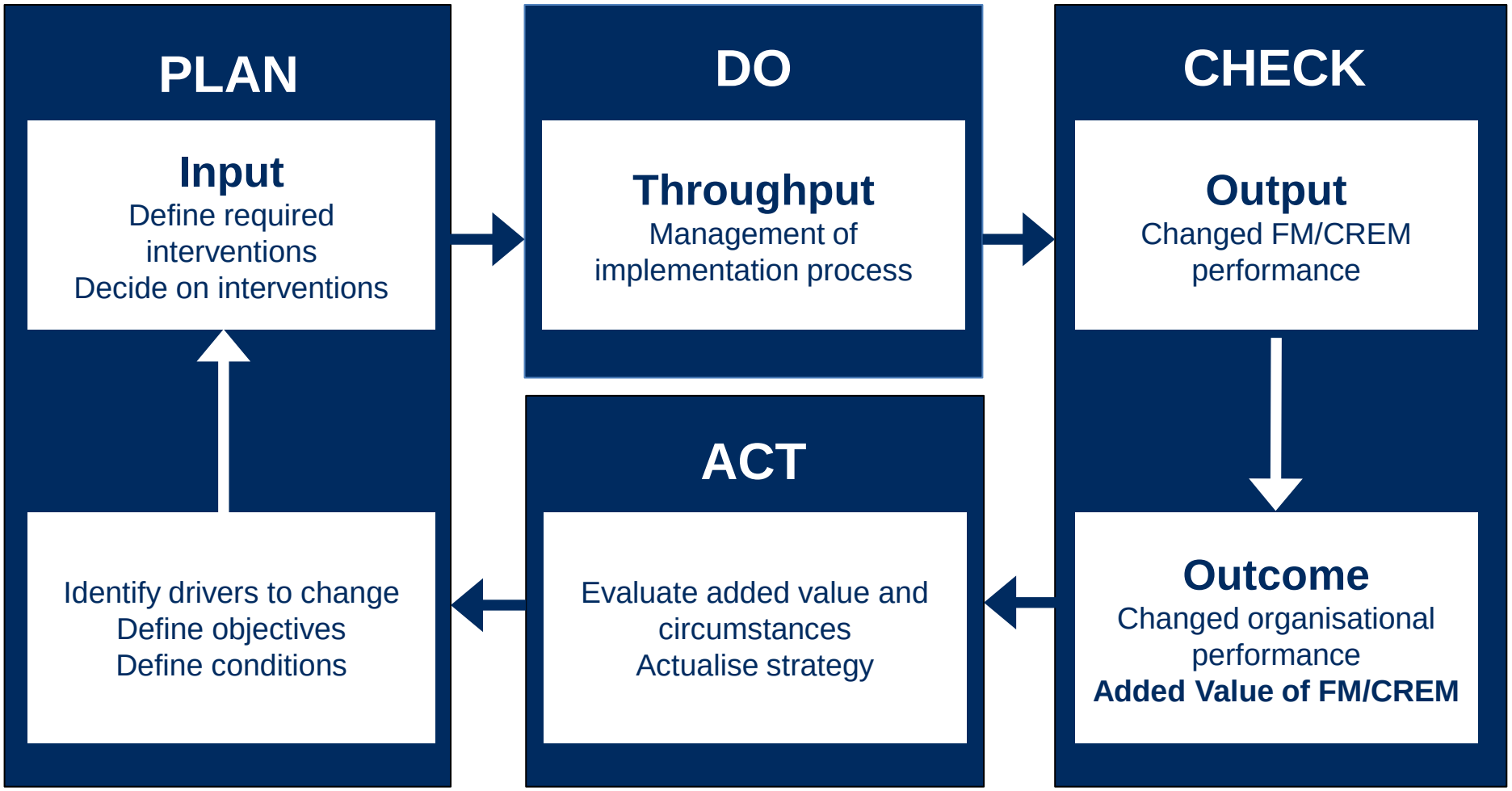
Conclusion

- Building on former models but simplified and more action oriented
- Supported by many existing tools and methods
- Connected to an elaboration of 12 value parameters

Next steps

- Testing in practice by case studies, interviews, workshops, etc.
- Application as a conceptual framework in academic research
- Follow-up studies into measuring the added value of FM and CREM

Application of VAM to TvdV & PAJ



Thanks for your attention!

Contact details

Per Anker Jensen

Centre for Facilities Management

Technical University of Denmark

DTU Management Engineering

pank@dtu.dk

www.cfm.dtu.dk

www.man.dtu.dk

Theo van der Voordt

Faculty of Architecture TU Delft

Department of Management in the Built Environment

D.J.M.vanderVoordt@tudelft.nl

www.mbe.bk.tudelft.nl

www.tudelft.nl/djmvandervoordt

Center for People and Buildings

Delft, Netherlands

www.cfpb.nl