Contents

1 Introduction to Capital Equipment Purchasing ........................................ 1
  1.1 Capital Equipment as Procurement Objects ..................................... 1
  1.2 Relevance of Capital Equipment Purchasing .................................. 2

2 Characterisation of Capital Equipment .................................................. 7
  2.1 Overview of the Main Procurement Object Groups .......................... 7
  2.2 Definition of Capital Equipment ..................................................... 8
  2.3 Classification of Capital Equipment ............................................... 10
  2.4 Macroeconomic Importance of Capital Equipment ......................... 11

3 Characterisation of Capital Equipment Purchasing .................................. 13

4 Typical Challenges and Possible Solutions in the
Procurement of Capital Equipment ......................................................... 19

5 Process for the Procurement of Capital Equipment .................................. 23
  5.1 Preparatory Phase ........................................................................... 24
  5.2 Agreement Phase ........................................................................... 26
  5.3 Execution Phase ............................................................................... 27
  5.4 Connecting Cross-Sectional Activities ........................................... 28
    5.4.1 Interdependence Management .................................................. 28
    5.4.2 Evaluation ............................................................................... 31
    5.4.3 Project Management ................................................................. 35

6 Instruments and Methods of Capital Equipment Purchasing
in Terms of the Players Involved ................................................................. 39
  6.1 Compliance Management in Capital Equipment Purchasing ............. 39
    6.1.1 Introduction to Compliance Management ................................... 39
    6.1.2 Fitting Compliance Management into the Capital
         Equipment Purchasing Process ..................................................... 40
    6.1.3 Interdependencies with Other Aspects of Capital
         Equipment Purchasing ................................................................. 40
    6.1.4 Conclusions Regarding Compliance Management .................... 47
6.2 Savings Measurement in Capital Equipment Purchasing .................. 47
  6.2.1 Introduction to Savings Measurement ...................................... 47
  6.2.2 Fitting Savings Measurement into Performance Measurement .......................................................... 49
  6.2.3 Methods for Savings Measurement in Capital Equipment Purchasing .................................................... 53
  6.2.4 Process of Savings Measurement in Capital Equipment Purchasing .......................................................... 60
  6.2.5 Case Study: Savings Measurement in the Procurement of a Wind Turbine ............................................. 62
  6.2.6 Conclusions Regarding Savings Measurement ...................... 63

7 Instruments and Methods of Capital Equipment Purchasing in Terms of the Characteristics of Procurement Objects ....................... 67
  7.1 Life Cycle Costing (LCC) and Total Cost of Ownership (TCO) Approaches in Capital Equipment Purchasing ...................... 67
    7.1.1 Introduction to the LCC and TCO Approaches ............................ 67
    7.1.2 Fitting the LCC System and the TCO Approach into the Process for Capital Equipment Purchasing .............. 70
    7.1.3 Relevance of LCC and TCO Analysis Methods in the Overall Process .................................................... 70
    7.1.4 Case Study: Calculation of LCC and TCO Using the Example of a Wind Turbine ........................................ 72
    7.1.5 Conclusions Regarding the LCC and TCO Approaches ........... 72
  7.2 Optimum Useful Life and Replacement Time of Capital Equipment .............................................................................. 73
    7.2.1 Introduction to Optimum Useful Life and Replacement Time .......................................................... 73
    7.2.2 Optimum Useful Life and Replacement Time of a Non-Recurrent Investment ........................................... 78
    7.2.3 Optimum Useful Life and Replacement Time of Recurrent Investment Chains ............................................. 81
    7.2.4 Conclusions Regarding Optimum Useful Life and Replacement Time ..................................................... 85
  7.3 Real Options Approach for the Evaluation of Investment Alternatives ............................................................................... 86
    7.3.1 Introduction to the Real Options Approach ................................. 86
    7.3.2 Mode of the Operation of the Binomial Model for the Calculation of Real Options ........................................ 91
    7.3.3 Conclusions Regarding the Real Options Approach ............... 96
  7.4 Performance Contracting within the Scope of Capital Equipment Purchasing .......................................................... 97
    7.4.1 Introduction to Performance Contracting .................................. 97
    7.4.2 Fitting Performance Contracting into the Process of Capital Equipment Purchasing ..................................... 100
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.4.3 Chances and Risks of Performance Contracting in Capital Equipment Purchasing</td>
<td>102</td>
</tr>
<tr>
<td>7.4.4 Financing Models in Performance Contracting</td>
<td>104</td>
</tr>
<tr>
<td>7.4.5 Contract Design in Performance Contracting</td>
<td>106</td>
</tr>
<tr>
<td>7.4.6 Control under Performance Contracting</td>
<td>107</td>
</tr>
<tr>
<td>7.4.7 Procurement Process of Performance Contracting Solutions Using a Wind Turbine as an Example</td>
<td>109</td>
</tr>
<tr>
<td>7.4.8 Conclusions Regarding Performance Contracting</td>
<td>110</td>
</tr>
</tbody>
</table>

8 Overall Conclusions on Capital Equipment Purchasing                      | 113  |
| 8.1 Summary: Key Points on Capital Equipment Purchasing                   | 113  |
| 8.2 Outlook: Where is Capital Equipment Purchasing Heading?               | 114  |

References                                                                 | 117  |
Capital Equipment Purchasing
Optimizing the Total Cost of CapEx Sourcing
Hofmann, E.; Maucher, D.; Hornstein, J.; den Ouden, R.
2012, XII, 124 p., Hardcover
ISBN: 978-3-642-25736-0