

## **Performance measurement of public facilities in Thailand: A case study of Dhanarak Asset Development**

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### **ABSTRACT**

This paper aims to present Key Performance Indicators (KPIs) that are used in public real estate management practice in Thailand, and to discuss similarities and dissimilarities between theory and practice. The findings from a single case study are compared with data from 55 other public organisations in Thailand. The case study has been conducted at Dhanarak Asset Development Company Limited in Bangkok. Research methods include interviews, walk-through observations, and document analysis. The findings show that KPIs are linked to three main areas: adherence to policy, operating performance of the state enterprise, and organisational management. KPIs include both financial and non-financial indicators. Findings on an operational level are reported to the upper organisational level. Benchmarking of performance measurement results of government agencies are used to improve the country's public performance management as a whole. Overall the findings support the three principles that reflect a change in public asset management according to Kaganova and Undeland (2006), and the strategic framework for public performance measurement that was developed by Jääskeläinen and Laihonen (2014). The findings can be used as input to a step-by-step plan to define prioritised KPIs in connection to the organisational context and the corporate strategy. The findings and reflections upon the findings can help to understand the impact of public real estate management on organisational performance and how to add value to the organisation.

**KEYWORDS** Public Real Estate Management, Performance measurement, KPIs, Benchmarking, Thailand

### **1 INTRODUCTION: PUBLIC REAL ESTATE MANAGEMENT**

Governments show an increasing concern to be involved into real estate development as an equity player, loan guarantor or developer, through the use of government-owned lands (Simons, 1992). An important governmental driver is to stimulate economic development in the community (Simons, 1992). This justification for government involvement is based on the public capital hypothesis i.e. investment in public lands and infrastructure is believed to be associated with job and income growth in the private sector (Tatom, 1991). Unlike an investor, a public real estate manager does not focus only on the financial interests of real estate (Van der Schaaf, 2002). By definition, Public Real Estate Management (PREM) is the management of a government's real estate portfolio by aligning the portfolio and services to (1) the needs of the users, (2) the financial policy set by the Treasury and (3) the political goals that the government wants to achieve (Van der Schaaf, 2002). As one of the organisation's resources, real estate needs to support the primary processes of the organisation and the needs of the various departments and agencies. In addition, real estate is perceived as a means to contribute to

financial performance and to accomplish the organisation's political goals. Kaganova and Undeland (2006) mentioned three principles that reflect a change in public asset management: Recognising property as a productive asset has focused attention on systematically assessing the efficiency of real estate use and the financial performance of public property, including accounting for total costs of real estate ownership, operation, and life-cycle costing.

Because governments are usually not efficient property owners and/or managers, various countries adopted substantial privatisation of governmental real estate and a change in government's role - from a "provider" of real property for end-users (such as families, business tenants, governmental organisations and educational institutes) to a "partner" that collaborates with the private sector.

The private sector asset management practice can be used as a reference area and source of benchmarking for public-asset management, for instance by systematic performance monitoring and valuation of assets, subdivision of the portfolios with defined utilisation and performance targets, and clear-cut legal relationships with users.

## **2 PERFORMANCE MEASUREMENT IN THE PUBLIC SECTOR**

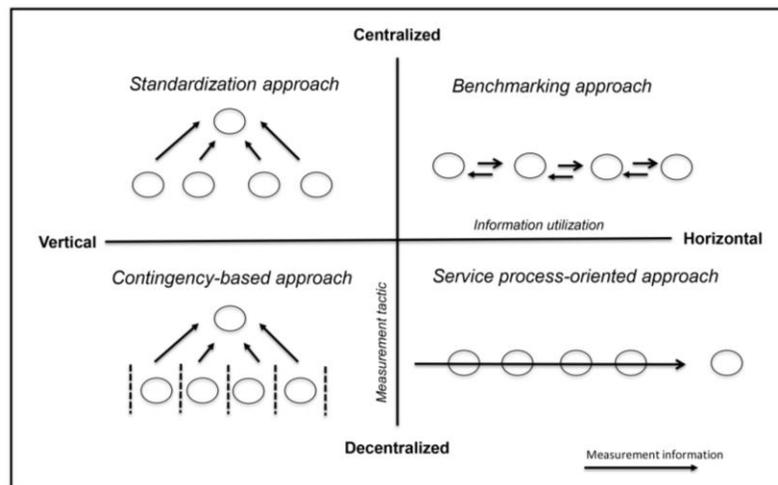
Nowadays new management techniques are applied as a part of the new public management (NPM; Hood, 1995) including strategic management, cost-centre management, business planning, marketing and quality management (Sanderson, 2001). Regarding to NPM practices, Jääskeläinen and Laihonen (2014) argued that decentralization of decision-making challenges traditional public management bureaucracies. The context-specific performance measurement at the operative level in individual service units provides more detailed information, and creates a link between operational goals and measurement practices. However, specific measures are usually too complicated to be used by top management. Therefore, Jääskeläinen and Laihonen (2014) proposed to make a distinction between different level of performance measurement and to consider how to report the data from lower levels such as a single business unit or a group of units to the higher levels such as a department or a whole city organisation.

Additionally, Jääskeläinen and Laihonen (2014) pointed out that customer-orientation and the requirement for responsiveness turn the whole public business logic upside down by focusing on service operations instead of organisational functions. They developed a strategy framework which recognises four different performance measurement approaches (Figure 1):

- 1) *Standardisation approach* – Central management dictates measurement guidelines e.g. a measurement framework, measurement dimensions and measures for different departments.
- 2) *Benchmarking approach* – Lateral comparison and information utilisation and aggregation of the results as in the standardisation approach.
- 3) *Contingency-based approach* – Measurement frameworks and tools are customised for a specific context.
- 4) *Service process-oriented approach* – A break from the traditional hierarchical organisational structures to capture the performance of service chains, measured with tailored measures.

Jääskeläinen and Laihonen further stated that the above approaches are analytical stereotypes. A combination of these approaches is most likely to provide a suitable basis for performance measurement in public sector organisations.

Figure 1 Strategy framework for public performance measurement (Jääskeläinen and Laihonon, 2014)



### 3 THE DAD CASE: CHARACTERISTICS AND RESEARCH METHODS

Until now PREM is not a well-known concept in Thailand. A PhD thesis on performance measurement of workplace change by the first author (Riratanaphong, 2014) offered the opportunity to investigate whether the above mentioned objectives and principles are reflected in current PREM-practice in Thailand, which Key Performance Indicators are used to measure the performance of public facilities, and how performance measurement can be improved. To get a better understanding of public performance measurement, a single case has been selected in order to be able to collect reliable and valid data in depth. The DAD-case was selected because it is the only public sector organisation in Thailand that has a role in managing and maintaining the government's real estate.

Dhanarak Asset Development company limited (DAD) is a state-owned enterprise established in 2004 as a unit of the Thai Ministry of Finance. It was set up to initiate, construct and operate the new Bangkok government building-complex Changwattana and other government assets according to the governmental policy. The company's mission covers two main areas: 1) to manage government assets according to government policies and 2) to develop the government building-complex as a new dimension of government housing. The main organisational objectives are to achieve economies of scale and to provide value for money to the client. The organisational structure of the DAD organisation consists of five departments: 1) policy, 2) administration, 3) business development and marketing, 4) finance, and 5) operations.

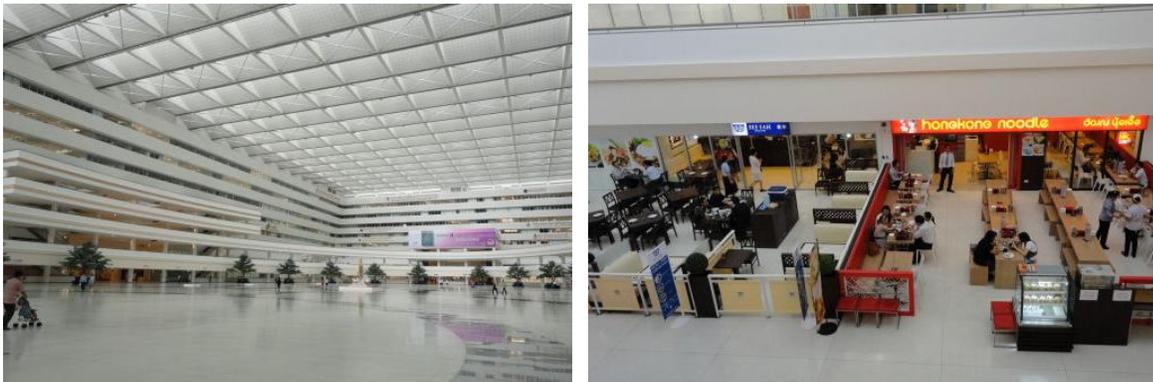
The government has set up a committee of which the members are appointed by the government. The task of this committee is to assign personnel to a risk management committee and an audit committee. The audit committee works in connection with TRIS corporation limited, a performance evaluation consulting company, to evaluate an organisation's performance.

The DAD organisation is accommodated in the new Bangkok government building-complex Changwattana. The DAD occupies 3 separate offices in two buildings of zone B. The office in the main building is occupied by the policy, administration, business development & marketing and finance department. The other building is occupied by the operation department that controls building service engineering of the Government Complex. Figure 2 shows the exterior of the building, whereas figure 3 shows two interior spaces of the Government Complex buildings.

Figure 2 The Dhanarak Asset Development building (left) and The Bangkok Government Complex (right)



Figure 3 Main hall of the Government Complex buildings (left) and the commercially rented area (right)



In total, The Changwattana complex provides office spaces to 40 public organisations of Thailand. The complex consists of three main zones: A (40 acres), B (78 acres), and C (60 acres). The complex building users include employees of the public organisations, visitors and renters of the commercially rented areas. Amenities include banks, post office, hospitals, shops, restaurants, food outlets and open meeting spaces that are provided throughout the complex.

Data on performance measurement within the DAD case were collected from company reports and documents from the human resource manager. Semi-structured interviews about DAD's performance measurement were conducted with the chief marketing officer, senior specialist and public relations manager. Documents used for the analysis include the company's annual report, the roles and responsibilities handbook, and the code of conduct handbook. Observations were conducted by a walk-through the Government Complex and the DAD workplace and by recording where and when certain behaviour occurred.

The data from the DAD-case have been compared with data from 55 other public organisations in Thailand. These 55 public organisations were selected because they apply the same performance measurement system as the DAD organisation.

## 4 RESEARCH findings

### 4.1 Performance measurement system, performance indicators and data

The performance measurement of all state enterprises in Thailand is directed by the State Enterprise Policy Office (SEPO), which plays an important role in regulating and supporting

state enterprises' good corporate governance and competitiveness. The development of the performance agreement between a state enterprise and SEPO comprises three key steps.

#### **4.1.1 Step 1: Identifying Performance Criteria**

The current performance measurement system specifies performance criteria for assessing state enterprises' operational efficiency in three key areas: 1) Adherence to policy; 2) Operating performance of the state enterprise; and 3) Organisational management (see Table 1).

#### **4.1.2 Step 2: Defining Criterion Weights**

The weighting of performance criteria is related to operational performance. DAD is a state enterprise that aims to provide public facilities that consider operational aspects, especially service quality. Details of the weights per criterion are: 1) Adherence to policy 20% ( $\pm 10$ ); 2) Operating performance of the state enterprise 50% ( $\pm 10$ ); 3) Organisational management 30%

#### **4.1.3 Step 3: Defining Performance Targets for Each Criterion Value**

For each criterion, performance targets are classified by SEPO into five levels. Level 1 is considerably lower than the set target in the annual enterprise plan. Level 2 is slightly higher than level 1, but still lower than the target. Level 3 is the set target in the annual enterprise plan. Level 4 is slightly higher than the set target, and level 5 exceeds the set target. Only state enterprises with outstanding management can achieve a Level 5 target. When determining annual performance targets, government representatives use past performance as the basis for benchmarking against the private sector (see Table 2 and 3). In the DAD case, the benchmarking against the private sector is carried out in 2 categories: commercial and office spaces for rent, in order to encourage state enterprises to improve their operational performance and to be on a par with the private sector. Even though improvement of state enterprise standards may not be achieved in one year, by setting the targets higher each year, the personnel can be encouraged to operate more efficiently. Table 1 presents the agreed performance measurement criteria and the results for the DAD case in the three main areas. Each area includes subcategories of performance indicators.

## **4.2 Comparison with data from 55 other public organisations**

Figure 4 shows performance measurement data of 56 public organisations in Thailand (including the DAD case) that was gathered by the State Enterprise Policy Office (SEPO) in 2009 and which were published in 2010. The total performance measurement scores of public organisations (ranging from 0 to 5) were approved and compared between nine different sectors: 1) communication (3 organisations), 2) public utility (5 organisations), 3) industry (5 organisations), 4) energy (5 organisations), 5) transportation (11 organisations), 6) finance (9 organisations), 7) commerce & service (5 organisations), 8) agriculture & land resource (7 organisations), 9) society & technology (6 organisations). The DAD case is in the commerce & service category.

The performance measurement results of organisations in the commerce & service category show to be quite modest in comparison to the other categories and include very low scores of 1.41 and 2.24 respectively (56th and 53rd rank). The DAD case has a slightly higher score of 2.79 (42nd rank). Public organisations in the energy category achieve the highest scores of 4.23, 4.68, 4.71 and 4.86. Most public organisations in the financial category also perform well with scores ranging from 3.92 to 4.78.

Table 1 Results from performance measurement in 2009 (DAD, 2009)

Performance criteria	Results (0-5) (points)
<b>1. Adherence to policy</b>	
1.1 Work done according to assigned plan from government	
- Percent of work done: Dhanarak Nontaburi housing as 2009 plan	3.92
- Percentage of handed over unit of Dhanarak housing in Phuket, Chiang mai and Suphanburi	1.00
- Success level of Zone C building construction project	5.00
1.2 Ability in managing investment plan	3.42
<b>2. Operating performance of the state enterprise</b>	
<b>Financial</b>	
2.1 Income from commercially rented area	3.65
2.2 Earnings (loss) before interest, taxes, depreciation and amortization (EBITDA)	4.97
2.3 Return On Asset (ROA)	5.00
<b>Non-financial</b>	
2.4 Work done on delivering rentable area to other government agencies	3.48
2.5 Percentage of allocating commercial area	1.00
2.6 Satisfaction of the Government Complex building users in 2009	3.61
2.7 Work done according to the development of building management standard in 2009	5.00
2.8 Work done according to the development of ICT in 2009	3.50
<b>3. Organisational management</b>	
3.1 Management roles of board of directors	2.98
3.2 Risk management	1.80
3.3 Internal control	2.94
3.4 Internal audit	2.62
3.5 IT management	1.92
3.6 Human resource management	2.66
<b>TOTAL PERFORMANCE SCORE</b>	<b>2.79</b>

### 4.3 Comparison with competitors from the private sector

Table 2 shows benchmarking data of the Government Complex and competitors in a commercial space rent market in nearby locations. The Government Complex has a lower square metre area of commercial space rent compared with IT Square, Central Plaza Changwattana, Central Plaza Rattanatibet, The Mall Ngamwongwan, and Siam macro. The Government Complex offers a more flexible contract ranging from 1 to 60 months with a rather low rental rate compared with other competitors in the market. The lower rental rate of the Government Complex's commercial space compared to the competitors may attract customers, whereas the lower occupancy rate may affect the creditability of the business.

Figure 4 Total performance scores of 56 public organisations, all measured in the same way by the State Enterprise Policy Office (2010)

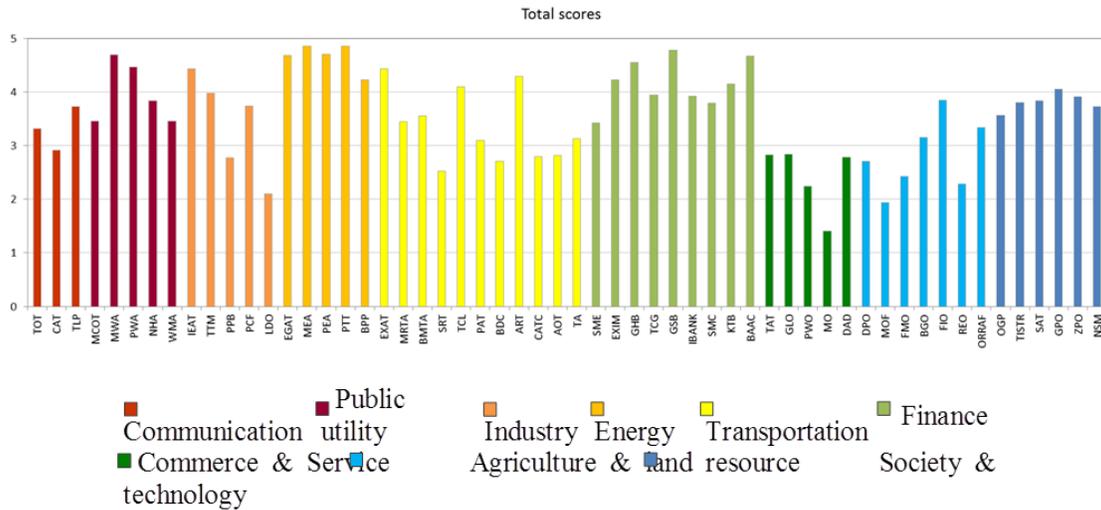


Table 3 shows benchmarking data between the Government Complex and a competitor in an office market. The findings show that the Government Complex has a much larger office space to let with a lower rental rate in comparison with Central Pattana. Although the ROA of the Government Complex (0.31%) is much higher than the set target (0.08%), the much lower percentage compared with the competitor (1.32%) reflects the area for improvement in terms of the ability to convert investment into profit.

Table 2 Benchmarking with competitors in a commercial space rent market (DAD, 2009)

Organisation	Benchmarking (commercial space for rent)						
	Available lettable floor space	Rental rate* (Baht/sq.m./month)	Electricity (Baht/unit)	Water (Baht/unit)	Contract (Month)	Deposit** (Months)	Occupancy rate
The Government Complex	26,055	360 – 1,300	4.5	25	1 – 60	3	25 – 50 %
The Avenue	21,173	700-2,000	4	18	36	6	98%
Major Hollywood	N/A	670 - 900	5	-	3	1	98%
IT Square	120,000	650 – 1,200	N/A	N/A	24	3	70%
Central Plaza Changwattana	300,000	1,100 – 2,500	N/A	N/A	36	6	80%
Central Plaza Rattanaibet	105,000	800 – 1,000	N/A	N/A	12	4	95%
The Mall Ngamwongwan	45,000	1,000 – 2,000	N/A	N/A	N/A	N/A	95%
Siam macro	60,000	1,500	N/A	N/A	N/A	N/A	100%
Big C Changwattana	20,000	600 – 1,200	N/A	N/A	N/A	N/A	98%
Tesco Lotus Changwatana	20,000	1,000 – 1,500	Included in the rent	Included in the rent	1	2,000 (Baht)	100%
Carrefour Changwattana	20,000	1,200 – 1,500	Included in the rent	Included in the rent	1	1	100%

\*Rental rate of a commercial space rent market is varied depending on the location of the space that has a high/low potential to attract customers.

\*\*Deposit refers to a sum payable as a first instalment or as a pledge for a contract. 40.65 Bath = 1 Euro

Table 3 Benchmarking against a competitor in an office market (DAD, 2009)

Organisation	Benchmarking (office space for rent)			
	Available floor space to let (square metre)	Rent/month (Baht/square metre)	Occupancy rate	Return On Asset (ROA)
The Government Complex	484,000	360	100%	0.31%
Central Pattana	144,280	500 – 700	94%	1.32%

Notes – information at the end of 2008

#### 4.4 Findings from the interviews

The Bangkok Government Complex has implemented the centralization concept by sharing resources and facilities of the complex to the occupied agencies. The involved public agencies such as the administrative court, the office of justice affairs, and the supreme court provide a one stop service to the citizen. However, there are some public agencies that decided not to move into the complex as previously agreed because of a psychological reason: they prefer to be accommodated in a single tenant building. In addition, some of the public agencies' current accommodations were renovated from old palaces that provide more cultural value to the occupied organisations than the Government Complex (McMillan, 2006).

The problems with the allocation of office spaces and other resources had an impact on the energy consumption of the complex, which relies heavily on the integrated system of energy conservation. This system is based on the assumption that all offices are occupied. The low occupancy rate of the public agencies and as such a lower number of end users than was planned also caused shop owners to hesitate to rent spaces in the commercial areas. Due to its role of operating the Government Complex, the DAD organisation had to convince other agencies to be accommodated in the building complex. As a result, the completion of the Government Complex was delayed.

## 5 DISCUSSION

### 5.1 Public real estate management

With regard to the first principle of public asset management (Kaganova and Undeland, 2006), the DAD case showed to have an important role in developing Thailand's public real estate as a productive asset. The mission of the DAD case does not only include the operational management of the government buildings, but also steering on efficient investments in governmental real estate. This is measured by KPIs such as "percentage of work done according to Dhanarak Nontaburi housing plan", and "percentage of handed over unit of the Dhanarak housing in Phuket, Chiang mai and Suphanburi". These KPIs are aligned with the government's policy and are also important for the DAD's financial performance. The second principle of public asset management i.e. a changing role from a provider of real property to a partner with the private sector (Kaganova and Undeland, 2006), is represented by the hotel management of the Centra Government Complex Hotel & Convention Centre that is operated by Central Plaza hotel public company limited. The third principle - benchmarking against the private sector – is

being applied in current Thai PREM-practice as well: the DAD organisation compares its own performance with data from the office market and the commercial space rent market.

## **5.2 Public real estate performance measurement**

Remarkably, the performance measurement system and procedures in the DAD case do not make a clear distinction between organisational performance and real estate performance. Regarding some particular performance areas, some interesting findings come to the fore as well.

### **5.2.1 User satisfaction**

The performance measurement of public organisations in Thailand is being monitored by TRIS Corporation limited. Although KPIs such as satisfaction of the Government Complex building users and land income from commercially rented area are included in the DAD audit system, employee satisfaction with the work environment and HRM related issues such as health and safety are not included in the evaluation by TRIS. Most of HRM related KPIs focus on the social work environment and not on physical assets. According to the literature, employee satisfaction with the physical work environment is directly related to job satisfaction and indirectly related to organisational commitment and turnover (Carlopio and Gardner, 1992) and should be included in the DAD KPIs. In a case from the private sector, Philips Thailand, employee satisfaction with the work environment was regarded as an important KPI that was assessed both by the organisation in Thailand and by Philips Real Estate of the mother company in The Netherlands (Riratanaphong, 2014). The preference for being accommodated in a single or multi-tenant building and satisfaction with shared facilities should be included in a user survey as well.

### **5.2.2 Sustainability**

DAD has put quite much concern to the environmental impact as is shown in KPIs such as percentage of complaints from public regarding environmental impact.

### **5.2.3 Occupancy level**

The percentage of commercially rented area was lower than previously expected, due to the delayed delivering of the rentable area to government agencies. This has a direct impact on the financial performance. Therefore KPIs such as the rate of customer retention are important as well. The organisation needs to compensate for every customer that gets lost by finding new customers. The customer retention rate gives an indication of how loyal the customers are and how well the organisation's customer service performs.

## **5.3 Benchmarking**

The central government of Thailand regulates the same performance measurement system for all public organisations despite the fact that these organisations have different objectives, sizes and enterprise values. These differences may result in different performance measurement results. For instance organisations in the energy sector and in the financial sector are much larger than the organisations in the commerce & service category such as DAD and 4 other organisations. Large organisations usually take advantage of more resources and funding received from the government that may affect the operating performance of the state enterprise.

Some public organisations are registered companies in the Thailand stock exchange market and have a communal objective of achieving profitability. Registered companies can acquire more funding from public investment than non-registered organisations. In addition, registered companies have to be more concerned about the overall operating performance because the company data is exposed to public.

The DAD case was set up in 2004 and is a much younger organisation than some other public organisations. More experienced organisations are likely to perform better regarding performance areas such as the management roles of the board of directors, internal control and

risk management, because these organisations had to cope with former economic crises such as the one of 1998 and are more keen to managing change.

#### **5.4 Comparison between theory and practice**

The findings show that performance measurement results from operational units are reported to the upper organisational levels. This is in line with the bottom-up measurement approach mentioned by Jääskeläinen and Laihonen (2014). For example, work done according to the development of building management standard and satisfaction of the Government Complex building users are measured by the Building Control units. The performance measurement results of these units are reported to the Building Control section, and are included in the Operation department's performance measurement results. These results are examined together with performance measurement results from other departments and are finally included in the operating performance of the DAD organisation.

The DAD case performance measurement system also represents the four measurement approaches that are shown in the strategy framework for public performance measurement (Jääskeläinen and Laihonen, 2014). The DAD performance measurement has been regulated by a measurement framework, criteria and measures that are set up by the central administration for different departments. This aligns with the standardisation approach (Figure 1). Performance measures such as the percentage of allocating commercial area are customised to the specific context of the DAD case, which fits with the contingency-based approach. Regarding the benchmarking approach, the DAD organisation uses past performance as the basis for benchmarking with the private sector (table 2 and 3). The service processes are measured by performance measures such as the percentage of complaints from public regarding the environmental impact, satisfaction of the government complex building users, introduction of green building and construction materials and equipment that meet local content. These measures focus on customer values and correspond to a service process-oriented approach.

### **6 CONCLUSIONS AND RECOMMENDATIONS**

The DAD performance measurement system has been directed centrally by the State Enterprise Policy Office (SEPO). It fits with the principles of public asset management (Kaganova and Undeland, 2006) such as adopting the role of real estate developer and the systematic way of performance monitoring using benchmarking with similar data from the private sector. The performance measurement system also corresponds to the four approaches from the strategic framework for public performance measurement (Jääskeläinen and Laihonen, 2014) i.e. standardization, benchmarking, a contingency-based approach and a services process-oriented approach. Although the operating results are monitored by TRIS annually, some KPIs should be developed furthermore, such as employee satisfaction with the physical work environment and rate of customer retention. Furthermore, benchmarking with other organisations would make more sense when taking into account the size of the organisations, enterprise values and time of establishment of the business, in order to avoid a comparison of "apples and pears".

The impact of performance measurement of public facilities could be improved by a shift from operational performance measurement to strategic performance management through a sound discussion about the alignment between organisational goals and real estate objectives and a careful prioritising of Key Performance Indicators that fit with these goals and objectives.

In order to be able to select prioritized KPIs, various key questions have to be answered by the organisation. Regarding the organisation, key questions are for instance: what is the mission and vision of the organisation and what are its main objectives? What is the current and desired organisational culture? What are the main business processes and what are the aimed products

and services? What are the main interests of employees and customers? Regarding real estate, important questions are for example; which real estate characteristics do support or hinder the mission, vision and strategy of the organisation and its main objectives? Can real estate help to support the organisational culture or to brand their values? Which physical characteristics fit with the customers' and employees? The answers to these questions might be used to explore focused actions and ways to use scarce resources as efficiently and effectively as possible.

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