EFFECTIVENESS OF PERFORMANCE MEASUREMENT IN REALIZING WORLD-CLASS COMPANIES IN THE PERSPECTIVE OF MALCOLM BALDRIGE

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Windha Dwi Kartikawati
Faculty of Economic Management, Institut Pertanian Bogor
Jono M. Munandar
Gendut Suprayitno
Department of Management, Institut Pertanian Bogor

Abstract: The Superior Performance Assessment Criteria (KPKU) assessment is conducted annually by Perum Peruri in accordance with the Secretary of the Ministry of State Owned Entreprises (SOEs) number S-08 / S.MBU / 2013 concerning Submission of KPI Guidelines and Criteria for Superior Performance Assessment on SOEs. This research was conducted to analyze the KPKU's assessment of Perum Peruri whether it had been effectively carried out at Perum Peruri and to see the influence between the categories of KPKU. KPKU assessment of Perum Peruri data was analyzed using a t-test (one sample), trend analysis and structural equation modeling (SEM) partial least square (PLS) approach. Peruri KPKU value always increases every year, it indicates that the presence of Peruri KPKU can improve its performance. The results of the analysis with the T test that the Perum Peruri KPKU score has not been effective in achieving the Ministry of SOEs target, but if a trend analysis is carried out for the next 5 years the assessment score shows a positive upward trend, then for the SEM-PLS results it is known that all categories in the KPKU assessment are interrelated and influence. It is necessary to conduct further research related to the influence of KPKU categories to improve KPKU assessment scores.

Keywords: Peruri, KPKU, performance assessment, performance improvement

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Corresponding Author: Windha Dwi, Faculty of Economic Management, Institut Pertanian Bogor, DOI: http://dx.doi.org/10.21776/ub.jam.2020.018.01.20

Building superior performance is a major demand for a company in achieving financial and non-financial performance at the national and regional level before becoming a world class company. In order to improve the capability and competitiveness of SOEs, the government, in this case, the Ministry of SOEs adopted the Superior Performance Assessment Criteria (KPKU) to measure performance and determine the performance of SOE companies according to the SOE Ministry Secretary Letter number S-08 / S.MBU / 2013 concerning Submission KPI Guidelines and Superior Performance Assessment Criteria in State-Owned Enterprises. KPKU's assessment of SOEs was adapted

to Malcolm Baldrige Criteria for Performance Excellence (Susetyo, 2014).

Malcolm Baldrige For Performance Excellence is used by companies to help them continue to grow and respond to challenges in terms of openness, transparency, creating value for the company itself or consumers and challenges in innovating and utilizing knowledge that is the company's assets. Assessment of superior performance by adopting Malcolm Baldrige becomes the most comprehensive standard framework criteria (Azizah, 2019).

Malcolm Baldrige For Performance Excellence was adopted by the Ministry of SOEs in measuring performance called the Superior Performance Assessment Criteria (KPKU). KPKU is applied by SOEs in order to improve competitiveness to face the free market era of the ASEAN economic community (AEC), KPKU plays a role in evaluating all elements of the company that will affect company management, processes, and results (Puspasari, 2015).

MBCfPE has been used for more than two decades, as a framework for quality management. MBCfPE is expected to improve the quality of the organization by implementing a systematic framework.

The Republic of Indonesia Public Money Printing Company (Peruri) is a company included in SOEs which is the only company that prints state money and non-valuable paper money in Indonesia. Based on Government Regulation number 32 of 2006, Peruri is tasked with implementing and supporting government programs in the field of economy and national development in general by conducting business in the printing of money, goods and / or services that have high security values for the security and interests of the country.

Peruri, which is part of the Ministry of SOEs, conducts performance appraisals using the Superior Performance Assessment Criteria (KPKU) in accordance with the direction of the Ministry of SOEs in the Ministry of SOE Secretary's Letter number S-08 / S.MBU / 2013 concerning Submission of KPI Guidelines and Superior Performance Assessment Criteria on the Agency State-Owned Enterprises.

PerumPeruri is still far from achieving the score to become a world-class company as PerumPeruri's vision is to become a world-class company in the field of integrated security printing and system, although each year the KPKU score always increases, it is hoped that in the future Peruri can increase the KPKU score so that can realize its vision of becoming a world-class company.

Based on the scoring results that are still far from expectations to become a world-class company as explained above, it is hoped that this research can help PerumPeruri in finding solutions to improve KPKU scores by analyzing the lack of KPKU score values obtained by KPKU scores in the BUMN KPKU guidelines, so that the results obtained can be taken into consideration by PerumPeruri in improving its performance.

METHOD

The study was conducted using the KPKU Peruri assessment data and then conducted direct observations on the company and interviews with related parties the KPKU assessment on Peruri. The data in this study were processed using the following analysis:

The T-test (One Sample)

Statistical Test Data processing and analysis in this study using statistical analysis t test or a different test (t test) with an average of two (paired-samples t test). The test equipment used in this research is SPSS 21 software.

Analysis of the t test (t test) is used for hypothesis testing, the hypothesis used in this study is a one-way hypothesis, namely:

H0: average score $\geq$ target SOEs (reach target)

H1: average score < target SOEs (not reaching target)

Testing using the t test is classified as a comparative test that aims to compare (distinguish) whether the average of the two groups tested is significantly different or not. One sample t test is an analytical technique for comparing one independent variable. This technique is used to test whether certain values differ significantly or not from the average of a sample.

Analisis Tren (Forecasting Analysis)

In general, decision makers using future forecasts based on the current realization as additional information, forecasting is very interesting for some disciplines as a subdomain of decision-making theory (Leitner and Leopold-Wildburger, 2011) which covers the fields of business and industry, government, economics, environment, medicine, social science, politics and finance (Montgomery et al., 2008).

Analysis of trends in this study is used to see the achievement of the next 5 years on the results that have been incised over the past 5 years, namely from 2013 to 2017. The results of trend analysis can show that in the next five years companies are able to reach or approach targets set by the Ministry of SOEs. The trend method used is chosen based on the lowest error value (MAPE), meaning that the model is able to properly measure the behavior of the data so that it is used as a reference for forecasting the next five years. The following are the results of trend analysis per dimension measurement category.

***Structural Equation Modeling -Partial Least Square* (SEM-PLS)**

This study uses a data analysis method using SmartPLS software version 2.0.m3 which is run on computer media. There are several reasons that cause the use of PLS in a study, in this study the use of SEM-PLS is a small sample size, the application has a little available theory, the accuracy of prediction is paramount, the correct model specifications cannot be ascertained (Wong, 2013).

Following are the steps in SEM PLS analysis:

Outer models (outer relations or measurement models) which define how each block of indicators relates to their latent variables. The measurement model (outer model) is used to assess the validity and reliability of the model.

Validity test

In the validity test shows the accuracy of the measuring instrument on the test, the measuring instrument can be said to be valid if it can measure objectives with real or true (Echdar, 2017).

Reliability Test

The reliability test is a test that measures how much the degree of the test is consistent with the target being measured, in other words, reliability is related to the accuracy and consistency of the gauge (Echdar, 2017).

The structural model (inner model) is a structural model for predicting causality between latent variables. Through the bootstrapping process, T-statistic test parameters are obtained to predict the causality relationship. The structural model (inner model) is evaluated by looking at the percentage of variance explained by the value of R2 for the dependent variable using the Stone-Geisser Q-square test size (Stone, 1974; Geisser, 1975) and also seeing the magnitude of the structural path coefficient. Because PLS is designed for a recursive model, the relationship between latent variables, each dependent latent variable, or often called the causal system of latent variables can be specified as follows

$$\eta = \Sigma_i \beta_{ji} \eta_i + \Sigma_i \gamma_{jb} \xi_b + \zeta_j$$

Where the path β and γ coefficients connecting endogenous predictors and exogenous latent variables ξ and η, along the index rangeindeks ib and ζ are the inner residual variables. If the results produce R^2 values greater than 0.2 then it can be interpreted that latent predictors have a large influence on the structural level.

In this study, the SEM-PLS analysis is used to see the interrelationship between the input categories, namely the leadership category, the process category (strategic planning; customer focus; measurement, analysis and management of knowledge, workforce focus and operations focus) and the results category (product and process results, customer focus results, leadership and governance results and financial and market outcomes.

RESULTS

Perum Peruri KPKU Assessment System

The evaluation system on the evaluation of BUMN performance in PerumPeruri is based on the method described in the Superior Performance

Evaluation Criteria document (KPKU) as implemented by the Ministry of SOEs through the Deputy for Business Infrastructure Ministry of SOEs number S-445 / D7.MBU / 10/2016 date 14 October 2016 which adopted and adapted Malcolm Baldrige's criteria for 2013-3014.

The method of evaluating reports per subcategory is assessed by considering the requirements of sub categories, the main business factors reported in the company profile, the perfection of the system implemented in the company, the extent of the scope of system implementation, and the consistency of improving the quality of processes and performance as regulated in the scoring system.

The evaluation of BUMN performance is based on two dimensions of evaluation, namely process/ system evaluation method (Approach), Deployment, Learning and Integration or abbreviated as ADLI and the outcome evaluation factors are Level, Trend, Comparison and Integration (LeTCI).

Nilai KPKU Perum Peruri

KPKU Assessment of Perum Peruri produces an assessment scoring that will be the final result of the KPKU assessment. The results of the KPKU assessment are shown in table 1, where in the table it appears that from 2013 to 2017 the value of the scoring always increases.

Based on the results of the KPKU score assessment as seen in tables 1 category 1 to 7 almost always increasing from 2013 to 2017 even though it is still below the score set by the SOE, namely in

Table 1 Results of the score KPKU assessment Perum Peruri

Category		2013	2014	2015	2016	2017	SOEs Target
Leadership	Senior Leadership	24,50	31,50	35,00	38,50	42,00	70,00
	Governance and Social Contributions	20,00	22,50	25,00	27,50	30,00	50,00
Strategic Planning	Strategy Development	14,00	20,00	20,00	22,00	27,00	40,00
	Strategy Implementation	13,50	20,25	22,50	24,70	24,00	45,00
Customer Focus	Customers Expectations	13,50	20,25	22,50	22,50	24,00	45,00
	Customers Engagement	14,00	16,00	20,00	20,00	24,75	40,00
Masurement, Analysis and Knowledge Management	Measurement, Analysis and Performance of the Company	18,00	18,00	20,25	22,50	24,75	45,00
	Knowledge Management, Information Management and Information Technology	18,00	18,00	20,25	22,50	24,75	45,00
	Workforce Environment	12,00	18,00	20,00	20,00	22,00	40,00
Workforce Focus	Workforce Engagement	13,50	18,00	22,50	22,50	24,75	45,00
	Work Processess	20,25	20,25	22,50	22,50	24,75	45,00
Focus of Operation	Operational Effectiveness	18,00	16,00	20,00	20,00	22,00	40,00
	Product and Process	38,50	33,00	49,50	49,50	54,00	110,00
	Customers Focus	18,00	27,00	38,25	38,25	40,00	90,00
	Workforce Focus	20,00	28,00	38,25	38,25	32,00	80,00
Results	Leadership and Governance	28,00	28,00	36,00	40,00	36,00	80,00
	Financial and Markets	31,50	36,00	40,50	45,00	49,50	90,00
Total		**335,25**	**390,75**	**473,00**	**496,20**	**526,25**	**1.000,00**

the last year 2017 with a score of 526.25 while the target score of the BUMN is 1000.

The T-test (One Sample)

One sample T-test results to prove whether, in the period 2013 to 2017, the peruri score for all indicators has met the targets set by SOEs. Here is the hypothesis:

H0: peruri score = target set by BUMN

H1: peruri score <target set by BUMN (does not meet target)

Table 2 T-test Result

Category		Average	Min	Max	stdev	Target	T-Value	P-Value	Result
Leadership	Senior Leadership	34.30	24.50	42.00	6.73	70	-11.86	0.000	Reject H0
	Governance and Social Contributions	25.00	20.00	30.00	3.95	50	-14.14	0.000	Reject H0
Strategic Planning	Strategy Development	20.60	14.00	27.00	4.67	40	-9.29	0.000	Reject H0
	Strategy Implementation	20.99	13.50	24.70	4.52	45	-11.88	0.000	Reject H0
Customer Fokus	Customers Expectations	20.55	13.50	24.00	4.16	45	-13.13	0.000	Reject H0
	Customers Engagement	18.95	14.00	24.75	4.15	40	-11.33	0.000	Reject H0
Masurement, Analysis and	Measurement, Analysis and Performance of the Company	20.70	18.00	24.75	2.93	45	-18.52	0.000	Reject H0
Knowledge Management	Knowledge Management, Information Management and Information Technology	20.70	18.00	24.75	2.93	45	-18.52	0.000	Reject H0
Workforce Focus	Workforce Environment	18.40	12.00	22.00	3.85	40	-12.55	0.000	Reject H0
	Workforce Engagement	20.25	13.50	24.75	4.50	45	-12.3	0.000	Reject H0
Focus of Operation	Work Processess	22.05	20.25	24.75	1.88	45	-27.26	0.000	Reject H0
	Operational Effectiveness	19.20	16.00	22.00	2.28	40	-20.4	0.000	Reject H0
	Product and Process	44.90	33.00	54.00	8.77	110	-16.6	0.000	Reject H0
	Customers Focus	32.30	18.00	40.00	9.52	90	-13.55	0.000	Reject H0
Results	Workforce Focus	31.30	20.00	38.25	7.68	80	-14.19	0.000	Reject H0
	Leadership and Governance	33.60	28.00	40.00	5.37	80	-19.33	0.000	Reject H0
	Financial and Markets	40.50	31.50	49.50	7.12	90	-15.56	0.000	Reject H0

T-test results show that all indicators produce probability values or p-values smaller than alpha 5%, then rejecting H0 means that the value of the peruri score for the period 2013 to 2017 has not met the target score of the BUMN or is still below the SOE target set.

Tren Analysis (Forecasting Analysis)

Analysis of trends in this study is used to see the achievement of the next 5 years on results that have been incised over the past 5 years, from 2013 to 2017. The results of trend analysis can show that in the next five years companies are able to reach or approach the targets set by SOEs. The trend method used is chosen based on the lowest error value (MAPE), meaning that the model is able to measure data behavior well so that it is used as a reference for forecasting the next five years. The following are the results of trend analysis per dimension measurement category.

Table 3 Comparison of a scoring result of the current KPKU assessment with the results of trend analysis

Category		Current Assessment					Tren Analysis Result					Target BUMN
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Leader-ship	Senior Leadership	24,50	31,50	35,00	38,50	42,00	46,90	51,10	55,30	59,50	63,70	70,00
	Governance and Social Contribu-tions	20,00	22,50	25,00	27,50	30,00	32,50	35,00	37,50	40,00	42,50	50,00
Strategic Planning	Strategy Develop-ment	14,00	20,00	20,00	22,00	27,00	29,00	31,80	34,60	37,40	40,20	40,00
	Strategy Implemen-tation	13,50	20,25	22,50	24,70	24,00	38,62	31,17	33,71	36,26	38,80	45,00
Customer Fokus	Customers Expectations	13,50	20,25	22,50	22,50	24,00	27,52	29,85	32,17	34,50	36,82	45,00
	Customers Engagement	14,00	16,00	20,00	20,00	24,75	26,60	29,15	31,70	34,25	36,80	40,00
Masurement, Analysis and Knowl-edge Manage-ment	Measurement, Analysis and Performance of the Company	18,00	18,00	20,25	22,50	24,75	26,10	27,90	29,70	31,50	33,30	45,00
	Knowledge Management, Information Management and Information Technology	18,00	18,00	20,25	22,50	24,75	26,10	27,90	29,70	31,50	33,30	45,00
Workforce Focus	Workforce Environment	12,00	18,00	20,00	20,00	22,00	25,00	27,20	29,40	31,60	33,80	40,00
	Workforce Engagement	13,50	18,00	22,50	22,50	24,75	28,35	31,05	33,75	36,45	39,15	45,00
Focus of Operation	Work Processess	20,25	20,25	22,50	22,50	24,75	25,42	26,55	27,67	28,80	29,92	45,00
	Operational Effectiveness	18,00	16,00	20,00	20,00	22,00	22,80	24,00	25,20	26,40	27,60	40,00
Results	Product and Process	38,50	33,00	49,50	49,50	54,00	59,15	63,90	68,65	73,40	78,15	110,00
	Customers Focus	18,00	27,00	38,25	38,25	40,00	48,87	54,40	59,92	65,45	70,97	90,00
	Workforce Focus	20,00	28,00	38,25	38,25	32,00	41,57	45,00	48,42	51,85	55,27	80,00
	Leadership and	28,00	28,00	36,00	40,00	36,00	42,00	44,80	47,60	50,40	53,20	80,00
	Governance	31,50	36,00	40,50	45,00	49,50	54,00	58,50	63,00	67,50	72,00	90,00
	Financial and Markets											
Total		**335,25**	**390,75**	**473,00**	**496,20**	**526,25**	**600,50**	**639,27**	**687,99**	**736,76**	**785,48**	**1.000,00**

Calculation of trend analysis on PerumPeruri seen from KPKU scores from 2013 to 2017 it is known that almost all categories (7 KPKU categories) experienced an increase in scores in the next five years with the highest value being in the fifth year (in 2022) at 785.48 this value is still under the target score of BUMN but the results of trend analysis show a positive thing that is always increasing.

STRUCTURAL EQUATION MODELING - PARTIAL LEAST SQUARE (SEM - PLS) ANALYSIS RESULTS

Evaluation of Measurement Model (Outer Model)

In this study, the validity and reliability of each latent variable will be tested, namely the input, process and output variables using the help of SmartPLS software. The input variable is a leadership category, the process variable is strategic planning; customer focus; measurement of analysis and management of knowledge; and the focus of the operation, and on the output variable, the results category.

The individual reflexive measure is said to be valid if it has a loading value (λ) with the latent variable you want to measure $\geq$ 0.5, if one indicator has a loading value (λ) < 0.5 then the indicator must be dropped (dropped) because it will indicate that the indicator is not good enough for measure latent variables precisely.

The following is the output of the structural equation path diagram output on PLS using the SmartPLS software in Figure 1. From figure 1 it appears that all indicator variables with a loading value (λ) > 0.5 so that all indicators are good enough to measure latent variables.

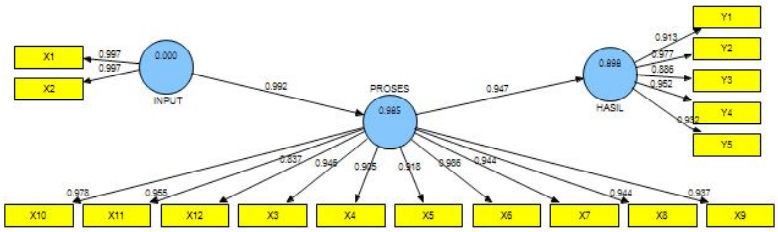

Figure 1 Path diagram of PLS structural equation with smart PLS software

Table 4 Validity Test Results

Variable	Indicator	Loading Factor	T Count	Result
Input	X1	0.997	393.556	Valid and Significant
	X2	0.997	269.926	Valid and Significant
Process	X3	0.946	29.341	Valid and Significant
	X4	0.905	31.514	Valid and Significant
	X5	0.918	57.863	Valid and Significant
	X6	0.986	17.802	Valid and Significant
	X7	0.944	24.610	Valid and Significant
	X8	0.944	24.610	Valid and Significant
	X9	0.937	51.511	Valid and Significant
	X10	0.978	23.315	Valid and Significant
	X11	0.955	21.497	Valid and Significant
	X12	0.837	19.927	Valid and Significant
Output	Y1	0.913	13.928	Valid and Significant
	Y2	0.977	22.397	Valid and Significant
	Y3	0.886	10.938	Valid and Significant
	Y4	0.952	22.892	Valid and Significant
	Y5	0.932	17.495	Valid and Significant

Source: processing with Smart-PLS

Validity Test

The results of the model evaluation stage are testing the validity of all indicators in the model showing a loading factor value of more than 0.50 and a calculated t value greater than t table 1.96. Then it can be concluded that all indicators are valid and significant in measuring each variable in the SEM model as listed in the Table (4).

Reliability Test

In this study, a variable is said to be quite reliable if the variable has a construct reliality value greater than 0.6. The following are the results of testing the reliability of each latent variable with the help of SmartPLS software in Table 5.

Based on the results of the table above, it can be concluded that for exogenous latent variables the input has a value of AVE (Average Variance Explained) > 0.5 and ρ_c (Composite Reliability) ≥ 0.7 as well as the endogenous latent variable of the process and the result has a value of AVE (Average Variance Explained) > 0.5 and ρ_c (Composite Reliability) ≥ 0.7, it can be concluded that the indicators used are the variables (inputs, processes, and results) have a pretty good reliability or are able to measure the construct.

Evaluation of Structural Model (Inner Model)

The structural model can be evaluated by looking at the value of R2 in endogenous variables and the path coefficient parameters. The following hypotheses raised in this study are:

H1: input (leadership) significantly influences the process

H2: The process has a significant effect on results

Table 5 Reliability Test Result

Variabel	AVE	Composite Reliability	Cronbachs Alpha	Communality
Output	0.8698	0.9709	0.9624	0.8698
Input	0.9932	0.9966	0.9932	0.9932
Process	0.8762	0.9860	0.9841	0.8762

Source; processing with Smart-PLS

Table 6 Structural Model

Hypotheses		Original Sample (O)	Standard Error (STERR)	T Statistics (|O/STERR|)	R-Square
H1	**INPUT → PROCESS**	0.992	0.006	180.197	0.897682
H2	**PROCESS → OUTPUT**	0.947	0.017	55.752	0.984811

The influence of the relationship of exogenous latent variables (input) to endogenous latent variables (processes and results) in table 6 can be explained, namely, the path parameter coefficients obtained from the relationship between input variables (leadership) with the process of 0.992 with a T-statistic value of 180,197 > 1.96 at the significance level α = (5%) which states that there is a significant influence between leadership as an input factor with the process, the R-square value of 89.76% is quite good because it is close to one. Then for the path parameter coefficient obtained from the relationship between the process variables with the results of 0.947 with a T-statistic value of 55.752 > 1.96 at the significance level α = (5%) which states that there is a significant influence between the pro-

cess factors with the results, the value of R -square of 98.48%, very good value because it is close to one.

DISCUSSION

This study shows that the assessment score on Perum Peruri has not been effective, this is due to the results of the T test that cannot answer the hypothesis that the value of all KPKU Perum Peruri is still below the SOE target. However, if it is seen that the Perum Peruri score always experiences an annual increase, it is evident that the KPKU assessment conducted by Perum Peruri can improve performance.

The Perum Peruri KPKU score assessment results if forecasting for the next 5 years through trend analysis is known that Perum Peruri KPKU score shows a positive trend that is always increasing, it is expected that the results of this trend analysis can be input for Perum Peruri to formulate company plans.

Based on the results of the Sem-PLS test it is known that between input variables (leadership categories) and process variables (categories: strategic planning; customer focus; measurement, analysis and knowledge management; operations focus) have a significant effect as well as process and outcome variables (outcome categories) has a significant effect. The highest value is in the process variable with the results compared with the input variable with the process, this indicates that things that occur in the process greatly affect the results of the Public Corporation, but both hypotheses remain significant. It can be concluded that each category of one to 7 KPKU which adopts from the Malcolm Baldrige (MBCfPE) model has interrelated relationships and is mutually sustainable with each other, this is in accordance with research conducted by Rudjito, et al. (2010) that the categories of each criterion in the MBCfPE method are interrelated.

CONCLUSIONS AND SUGGESTIONS

Conclusions

KPKU's evaluation on Perum Peruri which has been carried out since 2013 from year to year has always experienced an increase in the results of the assessment, this indicates that the existence of KPKU Perum Peruri's assessment from 2013 to 2017 improves company performance.

The categories in the KPKU are all interrelated and interconnected with one another. Thus, KPKU's assessment by adopting the Malcolm Baldrige model can be used as an integrated and comprehensive assessment system that can make a company become superior.

KPKU's score on Perum Peruri since it began in 2013 until 2017 has not reached the target of BUMN, this is due to Perum Peruri which is the only securities printing company in Indonesia, making it difficult for Peruri to obtain comparative data worth it. One of the KPKU assessments is the existence of performance values that can be juxtaposed with similar companies.

Suggestions

Perum Peruri needs to improve performance again in order to achieve the target KPKU value to be able to track world-class companies in accordance with its vision, it is necessary for Perum Peruri to add innovations for the company. Further research really needs to be done to increase input for Perum Peruri in order to realize its vision of becoming a world-class company.

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