

## Designing an Optimal Pattern of Assessing Native and Non-Native Managers' Performance in Sweden

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### Abstract

Nowadays, the issue of public sector managers' responsiveness to their actions in the new governance environment will be addressed more intensely. Therefore, in the modern attitude, assessing managers' performance as a framework for implementing strategies and policies, achieving organizational goals, and their responsiveness to beneficiaries and the society is considered. This study aims to develop an optimal pattern to assess native and non-native managers' performance in terms of four aspects of human, perceptual, and technical skills as well as personal traits and measure their performance through the combination of 360-degree feedback and analytic network process. The statistical population consists of two groups of native and non-native managers in key posts in Stockholm province who were selected through proportional stratified random sampling. The required samples for the groups of native and non-native managers are respectively estimated to be 31 and 23. The indices of performance assessment are extracted through the meta-synthesis method and validated using the Delphi technique and experts' opinions. By combining 360-degree feedback and analytic network process, native and non-native managers were appropriately ranked, which this ranking can be applied to administrative agencies.

### Key words

Native and non-native managers, Performance assessment, Analytic network process

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### Introduction

The term "survival and demise of the government" is regarded as one of the significant and noteworthy issues in political philosophy and managers' performance in the political system (1). Managers' appropriate behaviour plays a leading role in strengthening the

bases of the government and its survival (2). This aim is achievable only through selecting competent people, providing political education, and evaluating their performance frequently, since position and power may corrupt them or change their nature (3). According to

the principle that nowadays managers' responsiveness is increasingly regarded as a significant concern in the literature of governance, growing favourites in terms of responsiveness are mostly explained through the emergence of new patterns of administration (governance) which have challenged the traditional mechanisms of governance (4). Therefore, assessing the performance of public sector managers is defined as a systematic attempt to measure their responsiveness to people's needs and the government's ability to fulfil these needs (5). Measuring managers' performance adapts professional capabilities, behavioural characteristics, and their results to organizational strategies to the greatest extent (6) so that their actions will be aligned with macro-politics of any society (7).

The issue of responsiveness in the private sector is always attractive, and it has been attempted to create appropriate structures and methods to make it happen. However, in the public sector, responsiveness gains greater importance due to issues related to the public interest (8). By changing the quasi-paradigms of administration and the emergence of new methods of governance such as modern governmental management and modern public services, the issue of public sector managers' responsiveness to their actions in the new governance environment will be addressed more intensely (9). Considerable complexities of this modern style such as the attempt and role of management in protecting the public interest, reducing unnecessary bureaucracy, emphasizing the outputs, and developing competition confirm the need for a consensus on using practical methods and models of assessing governance in the public sector (10). Therefore, in the modern attitude, assessing managers' performance as a framework for implementing strategies and policies, achieving organizational goals, and their responsiveness to beneficiaries and the society is considered (11), which its primary goal is to enhance abilities and competencies and train managers who are being assessed (12).

One of the fundamental issues in the studies related to the productivity of public sector organizations is to select and employ efficient managers and measure their performance in the governance environment of countries (13). Therefore, progressing and producing high organizational performance and facing the surrounding

turbulent environment requires a mechanism to confirm the organization's forward movement through the constant assessment of public sector managers (14). Performance assessment is one of the essential issues and most severe duties in human resource management. Performance assessment aims to adapt to standards, develop a relationship with beneficiaries and manage them effectively, and fulfil the society's need efficiently (15). In addition to the above, due to social and cultural revolutions, novel and important issues such as being a native or non-native manager have emerged. Being a native or non-native manager has been the topic of a large number of researches in the world, and many researchers have attempted to discover its relationship with other variables (16). Some researchers believe that the nature of non-native managers' duties and functions is complicated due to cultural barriers. For example, in countries whose economic bases consist of multi-national companies, the issue of non-native managers' performance is regarded as a significant challenge and researchers have attempted to study its various aspects (17). The socio-cultural environment creates challenges when managers interact with the workforce in the organization and serve customers.

Furthermore, the socio-cultural environment of any society determines values, norms, personal beliefs, attitudes, and preferences (18). Since the activities of an organization depend on the behaviour and conception of people who live in that society, organizational behaviour is deeply influenced by the socio-cultural environment that the organization works in it (19). Therefore, the mentioned environment is of great importance, especially for effectively managing human resources in organizations. Since the underlying factors of culture and traditional values influence the attitude and performance of managers and the latter is highly adaptable to the values of the society, it is appropriate to recruit managers according to the general policies of the administrative system, i.e., recruiting able, committed, and competent workforce and avoiding narrow-mindedness as well as subjective and unprofessional attitudes in the public sector based on native selection. Furthermore, it is proper to differentiate between skill

level and geographical area and recruit managers without considering cultural and traditional elements of societies.

This study aims to design an optimal model for evaluating the performance of native and non-native managers of Stockholm province in critical posts. Therefore, the researcher's questions are: What indicators should be considered to assess the performance of managers? What is the weight of managers' performance evaluation indicators? What will be the result of performance evaluation based on the 360-degree method and TOPSIS?

### Research Methodology

According to Brugal, survey research includes three categories of longitudinal, transverse, and Delphi research. However, survey research is the most general type of social science research based on a survey of

those directly involved in the research problem. In this study, a descriptive survey method has been used. The main stages of the research included defining the main and sub-indicators using a questionnaire and a survey based on the Delphi method and the use of various sources. In the second stage, by asking the experts, the indicators were divided into four categories: individual characteristics, human skills, perceptual skills, technical skills, and the weights of the indicators were calculated. In the third stage, by combining two 360-degree techniques and TOPSIS decision-making techniques, managers will be evaluated and ranked. As mentioned, in this study, a researcher-made questionnaire was used to collect the necessary data to measure the performance of native and non-native managers. Experts have validated the dimensions and metrics required to evaluate performance through Delphi. The questionnaire consists of 69 questions that are scaled based on the Likert five-choice spectrum.

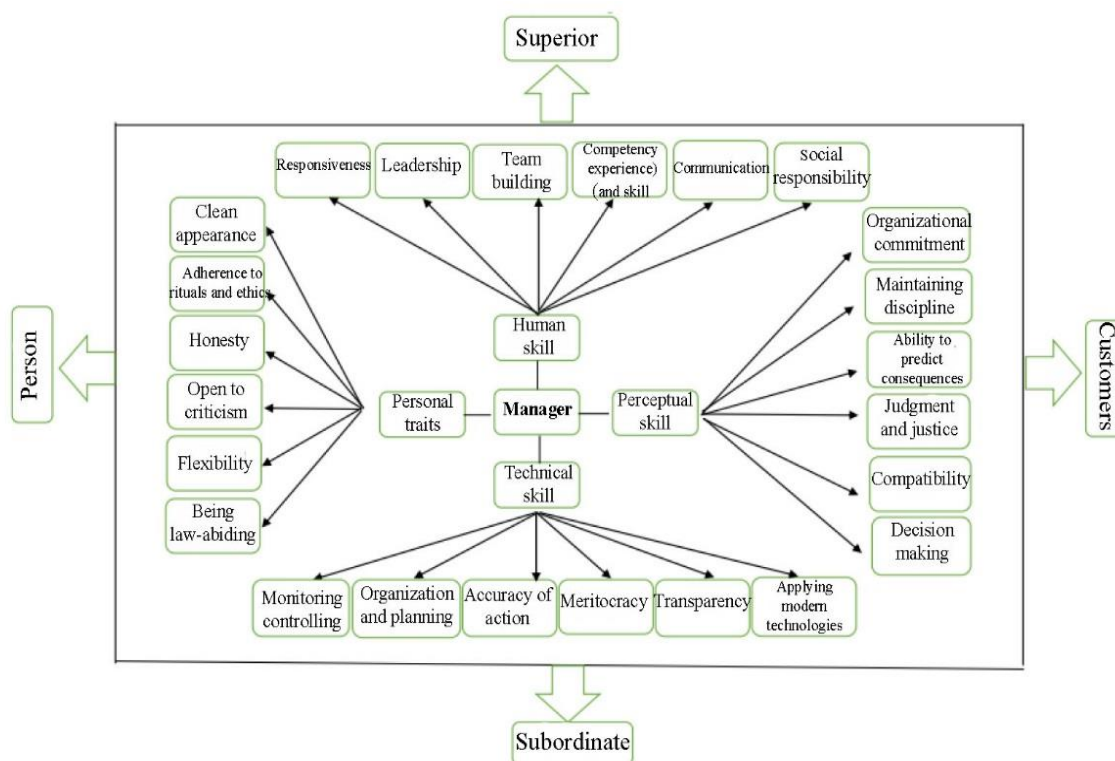


Figure 1. The combination of primary and secondary indices as well as the 360-degree feedback method

The statistical population is divided into two groups:

1. The first part (Delphi questionnaire) which its population consists of academic and administrative elites.
2. The second part which its population consists of all the general managers of administrative agencies in Stockholm Province (63 people).

The sampling method of the present study to measure indices through Delphi technique was snowball sampling. Snowball sampling is a helpful method for qualitative and exploratory studies. According to the latest gathered information about the number of native and non-native managers from Management and Planning Organization of Stockholm Province, out of 63 general managers, 36 managerial posts (57%) in this province are occupied by native people. According to the limited statistical population of general managers in administrative agencies (63), in order to determine the optimal sample size of this research, Cochran's formula was applied. The optimal sample size was equal to 54 people based on this formula.

Proportional stratified random sampling was also used to select the samples. In proportional stratified random sampling, individuals of the population are divided into different categories based on their intra-group characteristics and samples are selected from these categories proportionally. The sub-categories of this study who were homogeneous in terms of intra-group characteristics included native and non-native managers. The number of native managers was equal to 36, and the number of non-native managers was 27. In each sub-category, the optimal sample size was selected according to the numbers mentioned above, which was equal to 31 for native managers and 23 for non-native

managers. Therefore, in this method, questionnaires are distributed among all the categories of a population proportionally and determining the sample size is of great importance in order to generalize the results.

In 360-degree feedback, it is required to determine an assessing group. The assessing group is selected according to the following conditions: familiarity with the person being assessed, the number of contact with the person being assessed, familiarity with what the person being assessed is doing, people who work with the person being assessed, having sufficient motivation for providing an accurate and valid assessment, having self-confidence and making a fair judgment, accountability, and taking the assessment seriously (20).

According to the nature of 360-degree feedback, for each person being assessed, a superior, a client, and a subordinate must be selected. Therefore, since there were 31 native and 23 non-native managers in the role of the person being assessed and according to the fact that each person being assessed can have different roles, this led to adjusting the number of assessors for native and non-native samples being assessed, which was equal to 120 and 90 respectively. The opinion of assessors about the person being assessed is different. The weight of indices and the experts' opinions about the importance coefficient of each assessor group were collected simultaneously using Delphi method. Accordingly, the weight of the person being assessed in the role of manager, colleague, subordinate, and the person is equal to 37%, 22%, 24%, and 17%, respectively.

According to the collected data, 69% of the respondents are men, and 31% are women.

**Table 1: Distribution of respondents by gender**

Gender	Percent	Abundance
Male	69%	146
Female	31%	70

	100	216
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According to the below table, in terms of education level, about 47% of those evaluated had a bachelor's degree, 41% had a master's degree, and about 12% had a doctorate.

**Table 2: Educational status of managers**

education	Abundance	Percent
Expert	16	41.0
Master of science	34	46.7
PhD	4	12.4
Total	54	100

According to the respondents participating in the study, the average management experience of native managers in previous years was about seven years, and their average management experience in the current post

was about four years. The average management experience of non-native managers in past years was about six years, and their average management experience in the current position has been nearly two years.

**Table 3: Relative distribution of native and non-native appraisers by years of service**

Standard deviation	Average	years of service	Group
1.94768	6.8889	Management history in previous years	Native managers
.66702	3.6530	Management history in the current post	
2.12504	6.2456	Management history in previous years	Non native managers
1.263	2.04	Management history in the current post	

Due to the nature of 360-degree evaluation, Each manager will be evaluated on four sides. Here, for every 54 managers, including the managers them-

selves in the role of both evaluator and being assessed, we need 54 superiors, subordinates, and clients in the role of evaluator.

**Table 4: Relative distribution of epraisers**

Job position	Abundance	Percent
person	54	26.7
Client	54	26.7
Superior	54	26.7
Subordinate	54	26.7
Total	216	100

Evaluating the performance of managers using the TOPSIS method is necessary to define the required in-

dicators. Indicators, along with their weights, were collected by a questionnaire from experts and experts and are presented in Table 5.

**Table5. Managers' performance evaluation indicators**

weight	Sub-index	main indicator
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0.025	Open to criticism	Personal traits
0.27	Being law abiding	
0.26	Clean appearance	
0.24	Observance ethic & rituals	
0.25	Honesty	
0.26	Transparency	Technical skill
0.027	Applying modern technologies	
0.028	Militocracy	
0.026	Accuracy of action	
0.027	Organization and planning	
0.29	Monitoring and controlling	Perceptual skill
0.027	Organizational commitment	
0.022	Decision making	
0.026	Maintaining discipline	
0.23	Judgment & justice	
0.024	Ability to predict consequences	Human skill
0.027	Compatibility	
0.028	Social responsibility	
0.027	Responsiveness	
0.024	Leadership	
0.027	Team building	Human skill
0.026	Communication	
0.028	Competency (experience & skill)	

In order to rank the primary indices, it must be ensured that there were coordination and relationship between indices using DEMATEL technique. This technique is a method of decision-making based on paired comparisons (21), which its results help to apply the analytic network process.

#### Determining the Relationship between variables using DEMATEL technique

First stage: Elements constituting the system are the same identified criteria.

Second stage: Using the questionnaire, we asked the experts for the intensity of final relationships. The number of experts who completed the related questionnaire in this section was 15. According to the table below (Table 6), the intensity of the relationships between the leading indicators should be measured by experts, and the results show the impact of each of the criteria on each other which is called the direct relationship matrix. The intensity of the effect of criteria on each other is scaled according to the Likert spectrum so that the amount of zero shows the least, and the amount of four shows the most effect.

**Table 6. The mean of experts' opinions about the effect of criteria on one another**

X	Human	Personal	Technical	Perceptual
Human skill	0	3	3	1
Personal traits	1	0	1	3
Technical skill	2	4	0	2
Perceptual skill	1	3	4	0

Third stage: Normalization or scaling is a fundamental concept in multi-criteria decision-making techniques such as AHP and ANP. Standardization in multi-criteria decision-making techniques means scaling and allows data to be compared with different measurement criteria. At this stage, the direct relationship matrix, which was obtained at the previous stage, is normalized. In order to normalize the data, all the entries of the matrix are multiplied by the least inverse value of the sum of the largest row and column values. It can be shown in the following form:

$$S = \min\left(\frac{1}{\max(\text{sum}(A * 1)) * 1/\max(\text{sum}(A * 2))}\right)$$

where S indicates the overall direct effects of the criterion with the most effects on other criteria and A is the direct relationship matrix. In the next step, each of the elements of matrix A is divided into S, and matrix D is obtained.

The result is as follows (according to table8):

**Table 7. The normalized matrix of the effect of criteria on one another (the normalize matrix)**

N	Human	Personal	Technical	Perceptual
Human skill	0.00	0.30	0.30	0.10
Personal traits	0.10	0.00	0.10	0.30
Technical skill	0.20	0.40	0.00	0.20
Perceptual skill	0.10	0.30	0.40	0.00

Fourth stage: The complete relationship matrix (Table8) is obtained through the following phrase.

$$T = \lim_{k \rightarrow \infty} (D^1 + D^2 + \dots + D^k) = D \times (I - D)^{-1}$$

In the above phrase, I is the identity matrix and D is the mean of experts' normalized opinions. The result of this stage is as follows (according to table8):

**Table 8. The complete relationship matrix of the effect of criteria on one another**

T	Human	Personal	Technical	Perceptual
Human skill	0.259	0.787	0.653	0.492
Personal traits	0.287	0.430	0.448	0.547
Technical skill	0.445	0.903	0.467	0.609
Perceptual skill	0.390	0.869	0.787	0.457

Fifth stage: Producing a causal diagram.

The table below shows the degree to which each of the criteria affects each other. According to table 9. The sum of elements in a row (D) for each factor indicates the intensity of affecting other system factors. The sum

of elements in column (R) indicates the intensity of being affected by other system factors. Therefore, the horizontal vector (D + R) is the degree of the impact on the system's desired factor. The higher the D + R factor, the more it interacts with other system factors.

The vertical vector (D - R) indicates the power of effect each factor. In general, if D - R is positive, the variable is causal variable, and if it is negative, it is a affected.

**Table 9. The intensity of affecting criteria and being affected by them**

	D	R	D+R	D-R
Human skill	2.191	1.380	3.571	0.811
Personal traits	1.712	2.988	4.700	-1.276
Technical skill	2.423	2.355	4.778	0.068
Perceptual skill	2.502	2.105	4.607	0.397

Sixth stage: Calculating the relationship threshold  
 In order to determine Network Relationships Maps (NRM), the value of threshold must be calculated (according to table 10). Using this method, minor relationships can be ignored, and considerable relationships are drawn. Only relationships with values in the T matrix are higher than the threshold value displayed in the

NRM. To calculate the threshold value of the relations, it is sufficient to calculate the T matrix's average values. After the threshold intensity is determined, all matrix T values that are smaller than the threshold are zero, i.e., that causal relationship is not considered. The threshold for these criteria is 0.8558 (number 1 means that the row factor affects column factor).

**Table 10. Considerable relationships between the primary criteria of the research (boxes with number 1)**

T	Human	Personal	Technical	Perceptual
Human skill	1			
Personal traits	1			
Technical skill		1		
Perceptual skill		1		

**Ranking of native and non-native managers using the TOPSIS method**

In order to rank native and non-native managers in terms of performance, TOPSIS techniques were applied. In this technique, the factor or alternative is assessed by a person or a group of decision-making people. TOPSIS is based on the concept that any selected factor must have the shortest distance with the ideal positive (the most important) factor and the longest distance with the ideal negative (the least important) factor. In other words, in this method, the distance between a particular factor and the ideal positive or negative factor is measured, so that factors are graded and

prioritized. The results of this technique indicate the better performance of native managers in comparison to non-native managers.

At this stage, the options are ranked by value; In other words, any higher option will get a better rating, because it is farther from the negative ideal and closer to the positive ideal.

The table below shows the ranking of options. Note that the classification of options is in order from least impact to highest impact because we have considered the criterion of "impact rate" as a negative criterion.

**Table 11. Results of ranking Evaluation of performance of native and non-native managers using TOPSIS technique**

Rank	Type of manager	CL value	Rank	Type of manager	CL value	Rank	Type of manager	CL value
1	Native	1	19	Native	0.759	37	Native	0.531
2	Native	1	20	Non-native	0.75	39	Non-native	0.525

3	Non-native	1	21	Non-native	0.733	39	Native	0.519
4	Native	1	22	Non-native	0.733	40	Non-native	0.518
5	Native	1	23	Native	0.727	41	Non-native	0.518
6	Native	0.855	24	Native	0.72	42	Non-native	0.499
7	Native	0.827	25	Native	0.713	43	Native	0.468
8	Native	0.821	26	Native	0.697	44	Native	0.468
9	Native	0.821	27	Native	0.697	45	Non-native	0.403
10	Non-native	0.818	28	Non-native	0.669	46	Native	0.398
11	Native	0.812	29	Native	0.662	47	Native	0.34
12	Native	0.812	30	Native	0.662	48	Non-native	0.339
13	Native	0.808	31	Non-native	0.644	49	Native	0.327
14	Native	0.808	32	Native	0.609	50	Non-native	0.202
15	Native	0.8	33	Native	0.608	51	Non-native	0.173
16	Native	0.78	34	Native	0.571	52	Non-native	0.16
17	Native	0.771	35	Native	0.546	53	Native	0.145
18	Native	0.759	36	Native	0.531	54	Native	0.115

Finally, we attempted to collect and analyze the data in order to rank the primary concepts of each native and non-native manager of the research using common operations researches and techniques such as DEMATEL technique and ANP which are compatible with

the methodology and type of variables. In order to conduct the present research rapidly, Super Decisions software was applied, which its results are listed in Tables 12 and 13.

**Table 12. Ranking the primary indices of native managers' performance**

Number	Criterion	Weight	Ranking
1	Perceptual skill	0.298	2
2	Human skill	0.199	3
3	Technical skill	0.118	4
4	Personal trait	0.383	1

**Table 13. Ranking the primary indices of non-native managers' performance**

Number	Criterion	Weight	Ranking
1	Personal trait	0.289	2
2	Technical skill	0.117	4
3	Perceptual skill	0.214	3
4	Human skill	0.345	1

According to the above diagram, the inconsistency rate is equal to 0.000, which is smaller than the standard level of 0.1; thus, the questionnaire has been completed with high accuracy by the respondents. Research shows that the beneficiaries' perceptions of managers are not the same and can be defined based on four leading indicators and the high correlation coefficient to evaluate managers' performance. Other significant results can be mentioned

**Discussion**

According to the results of statistical analysis, the component of personal traits is the top priority for assessing native managers' performance. Perceptual skill and human skill are respectively ranked second and third, and the component of technical skill is ranked last in assessing native managers' performance. Perhaps the essential cause for the weakness of this component lies in the gap between the existed

level and the desired and expected level of the fourth plan formulated for the general policies of the administrative system. In order to reach the desired level, required infrastructures and mechanisms to form the electronic government and single window must be provided with the help of managers to develop business and administrative activities and create systems of clarifying the activities of the governmental centre. In ranking the components of assessing non-native managers' performance, human skill is ranked first with the most significant weight and personal traits, perceptual skill, and technical skill are ranked second, third, and fourth respectively. In analyzing the latter components of assessing non-native managers' performance, it can be stated that technical skill is the joint shortcoming of native and non-native managers' performance. If this matter is handled friendly and constructively based on cooperation rather than competitiveness and independence-seeking, it can lead to organizational growth and commitment as well as innovation and affect native and non-native managers' performance positively (22).

Furthermore, the technical and functional aspects of managers in the innovative atmosphere of the organization can mature. Regarding perceptual skill, it is supposed that cultural incompatibility is considered the most critical characteristic of undesirability in multi-cultural environments (23). Facing new cultural components by non-native people is considered to be culture shock as a multi-dimensional phenomenon of confronting the mental pressures of the environment (24). Since they cannot adapt these cultural components to the socio-cultural exchange symbols of their birthplace, they experience unpleasant emotions such as helplessness and role confusion (25). Non-native managers work in environments where their infrastructural assumptions are different from the place they have grown up. These managers require a cooperative approach presented by the host culture, which is different from their own culture, thus for more productivity; they require an approach related to the principles of cultural intelligence. For example, according to Hofstede's theory, there are significant differences between underlying cultural assumptions and behavioural values dominating managers in dif-

ferent sections and they are usually regarded as common misunderstandings between managers and employees of different cultures. Lack of control over the cultural basics and values of the workplace can cause culture shock. In order to meet this cultural challenge, non-native managers must increase their cultural knowledge, and by gaining cultural experience over the time, they can overcome the cultural complications of the environment and exhibit more acceptable behaviour towards other people.

Finally, some suggested research is presented: 1. In this study, only the opinions of four groups of beneficiaries were surveyed. Other beneficiaries, including ex co-workers, customers, employers, friends, family, etc., can be considered, and the method developed. 2. Applying other multi-criteria decision-making techniques such as Vicor, Savo, and Electr, etc. with a 360-degree measuring method to evaluate and rank employees can be useful. 3. It is suggested that other skills, such as strategic skills and psychological skills of work as a general concept not categorized in this study, will be discussed in other studies.

## Conclusion

By using performance appraisal models and mathematical decision-making models, it is possible to evaluate and rank the organization's employees. The combination of two 360-degree evaluation techniques and TOPSIS multi-criteria decision models leads to the least error and finally, the application of the results in senior organizational managers' decisions. By performing statistical analysis with SPSS software and calculating Cronbach's alpha correlation between sub-indices and leading indices, it proves a high correlation between sub-indices. Other remarkable results include: 1. The total weight of the opinions of the subordinate evaluators and the person being evaluated is approximately equal to the weight of the superior opinions. 2. The total weight of the peer evaluators' opinions and the evaluated person is almost more than the weight of the superior views. 3. The total weight of the opinions of the peer and subordinate evaluators is more than the weight of the superior opinions. Also, using the network analysis process, it was possible to calculate weigh each of the leading

indicators, which shows the degree of sensitivity and impact on the performance of managers.

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