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Best Value Procurement – The First Experiences from Norway

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Abstract

Best Value Procurement (BVP) is a method for contractor selection and project management, which seeks to increase project value by emphasizing the competence and expertise of the contractor. Several studies in the US and Netherlands indicate promising results. The method is new to Norway and pilot projects in the construction industry are testing the method. Limited research has been done to explore the experiences of these pilot projects. This study investigates how BVP was implemented in practice and the experiences with the method to develop suggestions for future projects on how BVP should be performed. The research was carried out through a literature study and two Norwegian case studies. A building project and a medium-size infrastructure project in the Norwegian public sector were explored through nine semi-structured, in-depth interviews and document studies. The findings show that the practical use of BVP aligns with the theoretical approach. However, since the method is new in Norway there are some challenges, such as the contractors' lack of knowledge of and experience with the BVP method. This may reduce the potential project value. The conclusion is that BVP is an effective and promising method for contractor selection and project management. However, for the success of future projects using the method, project owners may benefit from providing contractors with more knowledge of and experience with BVP. This can be done by training and by being persistent in using BVP in future projects.

Keywords: Best Value Procurement (BVP); Early Contractor Involvement; Public Procurement; Public projects; Norway

1. Introduction

Projects in the construction industry often suffer from cost and time overruns [1]. Various reasons for this have been suggested in the literature, but a recurring factor is traditional project procurement methods in which contractors are contracted sequentially. This leads to silo thinking and a lack of goal alignment between the project owner and the contractors. Several studies indicate that earlier contractor involvement can increase the project value and reduce the conflict level between the project owner and the contractor [2,3].

One of the methods that can be used for early contractor involvement is Best Value Procurement (BVP). BVP is a method for vendor selection and project management, which seeks to increase project value by emphasizing the competence and expertise of the vendor. The method utilizes previous performance data and interviews with key personnel to find the presumed best value vendor for the current project. The vendors compete based on project capability, their ability to identify risk, the additional value they can provide, interviews, and price [4]. The competition within these factors should lead to the selection of the vendor who offers the best value. BVP can be applied to procure all sorts of vendors, be that contractors for public works or service suppliers. This paper addresses how BVP is applied to construction projects, and in the following the word 'contractor' is used instead of the more general term 'vendor'.

Several different BVP methods exist, but this paper addresses the method that was developed by Dean Kashiwagi at Arizona State University in 1991 [5]. The method has been used with great success in the US [6]. BVP was

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introduced to the European market in 2005 when pilot projects were implemented in the Netherlands [7]. The experiences with the method in the Netherlands have been promising, and the method is now being tested in Norway.

Despite the promising experiences in the US and Netherlands, several challenges have been identified with the method [2]. For instance, the method is challenging to implement in the client's organization, and it demands thorough training of both the client and contractor [4]. Furthermore, the public procurement rules in EU and Norwegian law set certain limitations to the use of innovative procurement methods for public project owners. Public project owners must adhere to the public procurement principles of competition, equal treatment, and non-discrimination. As a result, the original BVP method must be implemented in a modified form for public project owners in the EU [8]. In addition, there are some practical barriers to implementing such methods of early contractor involvement, such as traditional culture and contracting practice [9].

Although several studies have been conducted on the use of BVP in the US and Netherlands, there is a knowledge gap on the use of BVP in other countries, including Norway. The purpose of this paper is therefore to study the introduction of BVP to the Norwegian construction market. By studying the practical use of BVP, and gathering experience data from the pilot projects, the knowledge database on how BVP can be implemented in the future may be strengthened. This paper addresses the following research questions:

- How was BVP implemented in practice?
- What are the experiences with BVP?
- How should BVP be performed in future projects?

This study is limited to two Norwegian cases that are medium-sized municipality projects. Furthermore, both cases are still in the execution phase. Therefore, the generalizability of the findings may have limitations.

2. Research methodology

The research was carried out through a literature study and two case studies. The literature study was conducted in accordance with the recommendations given by Arksey and O'Malley [10]. Search words such as BVP, Best Value Procurement, Best Value, PIPS, EU and combinations of these were used. Citation chaining was used for important documents. The objective of the literature study was to develop a theoretical background on how BVP should be performed, and to gain insight in previous experiences with the method.

To address the research questions, two cases were studied according to the recommendations by Yin [11]. The case studies involved two medium-sized municipality projects in the Norwegian public sector: one building project and one infrastructure project. The main characteristics of the case projects are presented in Table 1.

Table 1 – Main characteristics of the case projects

Project name	Type and complexity	Cost (EUR)	Role of interviewees
Flatåshallen Flatås sports club	**Building project** Construction of a sports hall, indoor football pitch, offices, and canteen. Total size: Approx. 6 200 m^2. Expected completion in August/September 2018.	7 200 000	Project leader (project owner) Project leader (contractor) Member of grading group Member of grading group Losing bidder
Metrobuss Trondheim municipality	**Infrastructure project** Construction of a four-lane highway, bicycle and walking trails, and two metrobus stops. Length: Approx. 800 m. Expected completion in July 2019.	7 700 000	Project leader (project owner) Project manager (project owner) Project leader (contractor) Member of grading group

The cases were investigated through in-depth interviews with key personnel in the two projects, in addition to a losing bidder. A total of 9 interviews were conducted with interviewees from both the project owners' side and the contractors' side. As such, both the client's and the vendor's perspective have been examined. The interviews were conducted in a semi-structured manner, with an underlying interview guide containing central questions. The interview guide helped to give consistency through the different interviews, and to increase the validity of the data. The interviews were held face-to-face, which is beneficial for sharing information. The interviews lasted from one to one and a half hours. The interviews were recorded with permission from the interviewees. Transcriptions of the interviews were afterwards sent to the interviewees for approval to increase the reliability of the data.

To supplement the data obtained through the interviews, document studies were also carried out. Access to project documents was given through project intranets. The documents included tender documents, contracts, and design plans.

3. Theoretical framework

Although BVP seems to be a fairly detailed method for project procurement and management according to literature, it does not contain any set rules for how it should be implemented. Thus, there are various ways to apply the method. However, the main principles and philosophy of BVP must be applied in order for the method to work as proposed [12]. The main reference on how the theoretical model of BVP should be implemented is the book written by the originator of the method – Dean Kashiwagi [6]. However, in the European context, van de Rijt & Santema's 'Prestatieinkoop' [4,13] books are perhaps more important. This is because the method is adapted and presented in these books in a way that seeks to fulfill EU public procurement legislation requirements. A variant of this method is the approach that has been used in Dutch BVP projects. Since the Dutch approach is the method that the Norwegian projects are based on, it is also the approach that will be presented in this section.

3.1. The principles of BVP

The basic idea behind BVP is that the contractor is the expert on how the project should be executed. The control over the execution of the project should therefore to a larger extent be transferred to the contractor. Conversely, the project owner's management, direction, and control of the project should be minimized. This is done by shifting decision making towards the contractor [6]. Furthermore, the risks of the project are not transferred from the project owner to the contractor, but rather the management and control of these risks [4].

A core principle of BVP is the use of *past performance information* to predict the performance of the contractor in the current project [14]. As such, it is important that the previous performances of the contractor are measurable, and that they can be substantiated with controllable documentation. Past performance information is an important part of the selection process, but the contractor's performance in the current project is also measured in the execution [4].

The main goal behind BVP is to increase the project value while shortening the procurement time and maintaining competition between contractors. The increase in project value means that the goals of the project should be fulfilled to the largest possible degree, while still minimizing the project costs [6].

Although the BVP method is based on the contractor's expertise, it is not necessarily based on a *trust* in the traditional sense of the word [15]. The need for trust should be minimized through principles of transparency and accountability. In other words, the contractor's provision of performance information should lead to the client not having to *trust* the contractor, but rather become certain about the contractor's expertise. Snippert et. al. [2] denote this as a calculus-based trust, as opposed to traditional, relational trust. However, a traditional trust relationship between the client and the contractor will typically be developed in the Selection and Clarification phase.

3.2. The four phases of BVP

To understand the BVP method, it is necessary to have insight in how the phases of the method work. BVP is typically conducted in four phases: *Preparation* (*Pre-qualification* as it is called by Kashiwagi [6]), *Selection*, *Clarification*, and *Execution*. These phases consist of different core elements and activities that may be applied to standardize the BVP procedure. In the following, some of the core elements from theory [4] and elements that have been identified in previous studies [16] will be presented.

1. The *Preparation phase* is the first phase. In this phase, the client and the contractor are prepared for the process of using BVP by receiving education and training in the method. The phase starts with the selection of a *sponsor* in the client's organization who is responsible for the BVP [4]. To gain training and insight in the BVP method, the involvement of an *external BVP expert* is usually beneficial. After that, a *core team* in the organization is selected and educated. The core team can for example consist of a project leader, a procurement leader, a representative from the management, and a person with competence in the type of project that is to be executed [4]. The use of *pre-qualification* – i.e., minimum legal and financial requirements for the contractors – may also be used. This is generally not recommended by van de Rijt & Santema [4], but it may be beneficial if there are many potential bidders [6]. Furthermore, a *core document* should be created. This contains information on the project scope, the project objectives, the weighting criteria, and the budget ceiling. The core document is to be released as information to the bidders [6]. In public procurement, BVP contractors are typically selected by the criteria of *MEAT* (Most Economically Advantageous Tender). Thus, other factors than price are evaluated. Since BVP uses an *open budget with a ceiling* – i.e., the project owner's maximum price is released as information to the contractors – the risk of procuring an expensive project is lowered, which yields room for weighting the criterion of price lower. Price is commonly weighted at around 25 % in

BVP projects [4]. When the core document has been created, the process of inviting contractors for a tender competition can be started. *Training sessions for the contractors* may be held as part of the process of conducting the tender competition, for creating awareness about BVP in the market and educating the contractors.

2. The *Selection phase* is the second phase of BVP. The goal of this phase is to identify and select the best value contractor. The Selection phase is typically conducted in three steps: 1) Evaluation of written documents from the contractors, 2) interviews with key personnel from the contractors, and 3) prioritization of the contractors according to evaluation of the written documentation, interviews, and price [4]. The phase starts with the contractors sending in their written offers, which consists of three documents: Project Capability, Risk Assessment and Value Added. In addition, the price is provided in a separate document. It is vital that the documents are short; no more than 2 pages each. This is an important part of maximizing the resource efficiency of the involved parties. Furthermore, the provision of dominant information is a key term: The information given in the written documents should be accurate, measurable and verifiable. To evaluate the offers, a grading group is used. However, *two or more independent grading groups* may also be used. This was done in the Dutch projects at Rijkswaterstaat [16]. The members of the grading group evaluate each document individually and set scores [4]. On the basis of the scores that have been given by the grading group, it is decided which of the contractors that go through to the interviews. Kashiwagi [6] uses the term *shortlisting* about this step. Van de Rijt & Santema [4] do not recommend shortlisting, but rather advice that all the contractors should normally go through to the interviews. It is important that the interviews are conducted with the contractor's key personnel who will actually do the work in the current project, such as project managers [4]. The interviews are recorded, transcribed and become part of the contract. The contractors are then graded, and based on the weighting criteria the best value contractor is selected. A *dominance check* is then performed, in which the accuracy of the information given by the contractor is assessed to ensure that the best value contractor has been selected [6].

3. The *Clarification phase* is perhaps the most important phase [4]. In this phase, the selected contractor is given time to clarify and elaborate their offer. However, no negotiations or additions to the offer are to take place in this phase. Furthermore, no 'real work' is to be done in this phase: The Clarification is rather a phase for defining the project to the largest possible degree, such that all the main aspects of the project have been addressed before the execution starts. The idea behind this model is to save transaction costs because the other bidders do not need to use resources in detailing the project. The Clarification phase should be led by the contractor. The presumption is that the contractor is the expert, and he should not be dictated or micromanaged by the project owner [4]. This phase typically lasts 4 to 6 weeks [4]. If the project owner is convinced that the selected contractor is indeed the contractor that provides the best value, the contract is signed at the end of this phase. The Clarification phase starts with a *kick-off meeting*. Here the contractor shall present his plans in detail to the project owner. A *risk management plan* should be formed, which describes all the risk factors in the projects and how they can be reduced. Furthermore, a *scope document* should be created, which describes which activities are part of the project and which activities that are not. To make the contractor's performance measurable, *Key Performance Indicators (KPIs)* should also be formed. These should be used to measure the contractor's performance in the Execution phase [4]. If the project is complex and involves several subcontractors, *elaboration of potential critical subcontractors* may be requested [16]. The *contractor* should also *be involved in framing of the contract*. However, this does not mean that the contractor writes the entire contract; but through interviews and statements made in the Clarification phase, the contractor will inevitably contribute to the content of the contract [12]. *Reassessment of interviews* may also be done to ensure that any concerns from these are addressed [16]. It should be made clear that the *project owner is financially responsible for all uncontrollable risk* [4]. This gives a larger incentive for the contractor to identify the risk factors that lie outside of his control, with accompanying plans on how to mitigate these risks. A *risk contingency fund* may be used to account for unforeseen circumstances. This is not part of the original BVP methodology but has been used in some Dutch projects [16]. The Clarification phase ends with an *award meeting*. At this stage, all risk factors and scope of the project should be solved, and the KPIs should be agreed. If the contractor and project owner are in agreement, the contract may be signed.

4. The *Execution phase* is the final phase of BVP. In this phase, the project is to be executed in accordance with what the project owner and the contractor have agreed upon in the Clarification phase. Both Kashiwagi [6] and van de Rijt & Santema [4] state that it is essential that both the project owner and the contractor stick to the BVP method in the Execution phase. The *weekly risk reporting* is important in this phase, in which the contractor keeps the project owner updated on the status of the project. Both positive and negative deviations in relation to the project plan should be reported, in addition to any changes in risks. This is a key part of securing transparency and protecting the project owner from poor performances from the contractor [4]. The contractor should include *performance measurements* in accordance with the KPIs as part of the weekly risk reporting [4]. A *directors reporting* may also be used. This is a report that is delivered to the project owner's management, such that the project's costs and time can be monitored [4].

4. Results and discussion

4.1. The use of BVP in practice

The use of BVP in the two Norwegian projects aligns with the theoretical approach identified in the literature. No major nonconformities to the theoretical model were discovered. A matrix of BVP elements and other elements that were identified in the literature is presented in Table 2, with indicators of the presence of such elements in the two cases. Both projects are still in the Execution phase. Procurement was done using an open tender procedure. Both projects have opted for the use of underlying standard design-build contract provisions, namely the Norwegian standard NS 8407.

Table 2 – Presence of BVP elements in the two cases

Elements from BVP		**Flatåshallen project**	**Metrobuss project**
1. Preparation phase			
Sponsor		X	X
Involvement of external BVP expert		X	X
Selection and education of core team		X	X
Pre-qualification of contractors		–	–
Use of all four phases		X	X
Training sessions for contractors		X	X
Core document		X	X
Open budget w/ceiling		X	X
2. Selection phase			
Award criteria in MEAT:	• Project capability	• 25 %	• 20 %
	• Risk assessment	• 15 %	• 20 %
	• Value added	• 10 %	• 15 %
	• Interviews	• 25 %	• 25 %
	• Price	• 25 %	• 20 %
Shortlisting		–	–
Two or more independent grading groups		–	–
Dominance check		X	X
3. Clarification phase			
Kick-off meeting		X	X
Risk management plan		X	X
Scope document		X	X
Elaboration of potential critical subcontractors		X	–
Reassessment of interviews		X	X
Key Performance Indicators (KPIs)		X	X
Award meeting		X	X
Contractor involved in framing of contract		X	X
Owner financially responsible for all uncontrollable risk		X	X
Risk contingency fund		–	X
4. Execution phase			
Weekly risk reporting		X	X
Performance measurements		X	X
Directors reporting		–	X

In both projects, all four phases have been used. Pre-qualification was not used in either of the projects. Furthermore, shortlisting was not used, such that all the bidders were given the opportunity to be interviewed. Two or more independent grading groups were not used. Elaboration of potential critical subcontractors was requested in the Flatåshallen project. This was not deemed necessary in the Metrobuss project, as there are few subcontractors in this project. Risk contingency fund was not used in the Flatåshallen project, due to small margin in the project budget. Directors reporting was not used in the Flatåshallen project, as the project owner is a one-time construction client.

4.2. The experiences with BVP

The general view of BVP is positive in both projects. The project owners and the contractors were mainly positive about the BVP method and philosophy. However, some challenges with the method have been identified. The positive experiences and challenges are presented in Table 3.

Table 3 – The experiences with BVP

Positive experiences	• Project cost predictability because of open budget with ceiling
	• Faster procurement phase for the project owner
	• The interviews are well suited to differentiate between contractors
	• Contractors are to a larger extent evaluated on their competence compared to traditional procurement methods
	• The Clarification phase provides foreseeability for the execution
Challenges	• The project owners and contractors are uncertain about the method
	• Uncertain whether time or costs have been saved in the procurement phase for the contractors
	• Legal challenges concerning public procurement law
	• Difficult to balance the line between clarification and negotiation in the Clarification phase
	• Lack of specific contract provisions for BVP projects represent a challenge in the Execution phase

In both projects, *project cost predictability because of the open budget with ceiling* was put forth as a positive element, especially from the project owners' point of view. Since the budget with ceiling is released up front as information to the vendors, the probable cost of the project is known at an early stage. Furthermore, the project owners pointed to a *faster procurement phase* since the tender documents need less detailed descriptions. The project owners also agreed that the *interviews were well suited to differentiate between the contractors*. There was a great difference in how the contractors performed on the interviews, and the project owners were very positive to using interviews as a means of differentiating between contractors. In addition, the *contractors are to a larger extent evaluated on their competence compared to traditional procurement methods*. The contractors express that this is a much-appreciated change to the usual tough price competition, which yields less room for their expertise. Furthermore, *the Clarification phase provides foreseeability for the execution*. The contractor gets to know the project better through this phase, and relationships to the project owners are formed.

Despite the many positive experiences, there are some challenges. The main challenge was that the *project owners and contractors are uncertain about the method*. Many of the offers from the contractors lacked the specificity and verifiability that is expected. Furthermore, the contractors perform poorly on the interviews in general. The uncertainty with the method was also challenging in the Clarification phase. The contractors had trouble leading this phase and trouble forming measurable KPIs. These challenges are probably caused by the contractors' lack of knowledge and experience with the method. Conversely, the contractors in both projects find that the project owners are having trouble 'letting go' of control in the Clarification and Execution phase. This corresponds to the observations made by Snippert et. al. [2], in that project owners frequently fall back on the traditional model of management, direction, and control, instead of leaving the technical decision making to the vendor. Thus, despite the presence of BVP elements, there is a gap between theoretical and practical application of the BVP *philosophy*. Furthermore, it is *uncertain whether time or costs have been saved in the procurement phase for the contractors*. Both contractors state that no costs or time has been saved in the procurement phase. Although BVP simplifies the procurement phase in that the contractors should only deliver 6 pages of documents, the price of the offer must still be calculated as usual, and the budget ceiling must be controlled. There are also some *legal challenges concerning public procurement law*. An interviewee expressed that it is challenging to subsequently reject a contractor who has been selected to the Clarification phase. At this stage, the contractor has put down a great deal of work and resources in the project, and would probably not give up without

a fight. As such, a proper rejection in accordance with public procurement law would require thorough documentation from this phase. Furthermore, it is *difficult to balance the line between clarification and negotiation in the Clarification phase*. Although there should be no negotiation in this phase, the distinction is not always easy to draw. In addition, the *lack of specific contract provisions for BVP projects represents a challenge in the Execution phase*. Both projects use underlying standard contracts. These do not account for any special considerations that must be taken when using the BVP method, such as the weekly risk reporting. The standard contracts contain clauses that require the contractor to notify the project owner without undue delay if a change occurs. Thus, a challenge occurred when a change was reported in the weekly risk report, but not through the traditional system. This resulted in ambiguity about whether the change had been notified in time. The notification rules are preclusive, such that failure to notify in time results in a loss of the right to claim monetary compensation or extension in time limits. Since accountability and transparency are important principles in BVP, a need for clarification of the Execution phase through contract terms has been identified.

4.3. How should BVP be performed in future projects?

The interviewees were asked about success factors and pitfalls with the method to develop suggestions on how BVP should be performed in future projects. In addition, the interviewees were queried on what could have been done differently in the current and future projects. The interviewees agreed that the theoretical approach should be followed in future BVP projects. An overview of some key success factors and pitfalls that were found is presented in Table 4.

Table 4 – Success factors and pitfalls

Success factors	• Education in the BVP method for both the project owner and the contractor
	• Using an external BVP expert with thorough BVP knowledge and experience
	• Ability for the project owner to let go of control
	• Appropriate budget ceiling and time plan
	• Starting the BVP at an early enough stage of the project
Pitfalls	• Considering the method too easy
	• Using BVP for the wrong kind of project
	• Not being able to differentiate between the best contractor and the best seller in the Selection phase
	• Potential legal pitfalls with regards to public procurement legislation if the method is not followed

The predominant success factor that was identified is *education in the BVP method for both the project owner and the contractor*. This was put forth as a vital factor for succeeding with the BVP method and to creating ownership to the methodology. In this regard, the interviewees from the Metrobuss project also expressed that the internal training sessions on BVP should have been held earlier. The need for training in the Clarification and Execution phase is especially prevalent. *Using an external BVP expert with thorough BVP knowledge and experience* was also put forth as a success factor, especially by interviewees from the project owner's side. This was argued as important to implement the method correctly so that the method can work as proposed and legal problems are avoided. *Ability for the project owner to let go of control* was also mentioned as a success factor. The project owner has to be prepared to provide more information than usual and focus on facilitating an environment where the contractor can succeed. This has been identified as a common challenge in previous BVP projects [2,4]. Furthermore, the contractors emphasize that an *appropriate budget ceiling and time plan* is important. If these are set too low, there will be a constant race against the clock and to keep cost margins low. *Starting the BVP at an early enough stage* was stated as a success factor by interviewees from one of the contractors. To gain the benefits of the contractor's expertise, the contractors should be selected at a stage where they can exert real influence on the project. In the Flatåshallen project, applications for government permissions had been sent before the contractor was selected. As part of the applications, some main characteristics of the buildings were determined, such as building height. Although this saved some time for the project owner, since the processing of the applications could be done parallel to the procurement, the contractor expressed that this deprived them of freedom for how the project should be solved.

A common pitfall that was expressed is *considering the method too easy*. Although the BVP method focuses on the expertise of the contractor, it still demands thorough education and cannot be regarded as simply a 'procurement trick'. *Using BVP for the wrong kind of project* was also identified as a potential pitfall by the interviewees. If the method is used for projects where there is little freedom in choice of solution, the expertise of the contractor cannot be fully

utilized. *Not being able to differentiate between the best contractor and the best seller in the Selection phase* was also mentioned by several interviewees. It is important to stick to the dominant information that is provided in the written documents and the interviews. Furthermore, an interviewee expressed that there are *potential legal pitfalls with regard to public procurement legislation if the method is not followed*. These pitfalls are related to the negotiation ban in open tender procedures, and the previously mentioned challenges that occur if the client wishes to reject a contractor in the Clarification phase and choose the second-best contractor.

5. Conclusion

The research questions addressed in this study are 1) how BVP was implemented in practice, 2) what the experiences with BVP are, and 3) how BVP should be performed in the future. The findings from the two cases indicate that BVP to a large extent has been implemented in accordance with the theoretical approach. Some minor deviations from the theoretical model have been identified, but these are related to BVP elements that are regarded as optional.

The experiences of project owners and contractors on BVP are mainly positive. The findings indicate that BVP is an effective and promising method for contractor selection and project management. The project owners can make a faster call for tenders, the Clarification phase provides foreseeability for the execution, and the budget ceiling yields project cost predictability. At the same time, the contractors find that they can utilize their expertise to a larger degree. However, some challenges were identified during the practice of the method. First, the contractors were inexperienced with the method, and their tender offers lack the specificity, measurability and verifiability that is expected in BVP. Second, the Clarification phase was characterized by traditional thinking due to the uncertainty on the method. Third, the legislation on public procurement represented a challenge, as the prohibition of negotiations in tender competitions is demanding to maintain in the Clarification phase. Fourth, the lack of specific contract provisions was challenging in the Execution phase.

The results indicate that future project owners will benefit from preparing the contractors better for the use of BVP. This may be done by facilitating training sessions for the contractors or by being persistent in using BVP in future projects. Through using BVP in future projects, both the project owners and contractors will gain experience with the method. Final conclusions can only be drawn after the projects have been finished, i.e. late 2018 and mid 2019.

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