

Knowledge Management Strategy and Service Firm Performance: A Comparison of Firms Competing on Low-Cost versus High-Quality

Completed Research Paper

Jason F Cohen
Wits University
jason.cohen@wits.ac.za

Karen Olsen
Wits University
inward@global.co.za

ABSTRACT

This study contributes to the knowledge management literature by comparing the effects of four knowledge strategy configurations on the performance of service firms competing on low-cost versus high-quality. Data was collected from 107 hospitality establishments operating in South Africa. Firms competing on low-cost and high-quality were classified into one of four groups based on their approach to knowledge management and were then compared on two dimensions of service firm performance. Results suggest that information (IT) based approaches to knowledge management are associated with high performance amongst hospitality services firms competing on low-cost whilst human capital based approaches are associated with high performance amongst firms competing on quality. Implications for knowledge management are discussed.

Keywords

Knowledge management, information technology, human capital, service, hospitality, performance.

INTRODUCTION

Two principal strategies for the management of organizational knowledge have been advocated in the literature. The first is focused on the firm's explicit or codified knowledge. This is knowledge that can be externalized, stored in documents and computer systems, and embedded in a firm's routines and operating processes (Choi and Lee, 2003; Greiner, Böhmman and Krcmar, 2007). A strategy of knowledge codification is actioned through a coordinated managerial effort to formally represent the organization's knowledge base (Hansen, Nohria Tierney, 1999; Rastogi, 2000). Therefore within this paradigm, technological solutions to the problems of knowledge management are highly valued (Gloet and Berrell, 2003), and information technology (IT) plays a predominant role in the acquisition, storage and retrieval, intra-organizational transfer and application of knowledge (Bhatt 2001; Davenport, Long and Beers, 1998; Gold, Malhotra and Segars., 2001).

The IT based strategy of knowledge codification can be contrasted with a human capital or personalization based strategy (Hansen et al., 1999). This strategy focuses on the tacit knowledge ingrained in the minds of employees who constitute the human capital of a firm (Choi and Lee, 2003). Under this strategy, the knowledge base of the firm resides in competent and committed employees who must be retained and motivated through incentives to contribute their knowledge. This approach thus emphasizes the development of human capital and favors social interaction rather than technology driven storage and retrieval mechanisms for knowledge sharing.

Organizations are advised to emphasize one of these strategies and to do so in a manner that aligns with the strategic orientation of the firm (Hansen et al., 1999). However, there is little empirical evidence to guide firms in making strategic choices about knowledge management, and we lack answers to a fundamental research question: Under what conditions do firms that focus on a strategy of knowledge codification and IT use outperform firms emphasizing knowledge management through human capital development and retention, and vice-versa?

Adopting the service sector as the context for our study, we address this gap. Firstly, we examine the link between knowledge strategy and two dimensions of service firm performance: customer service outcomes and market and financial effectiveness. Secondly, we compare service firms competing on low-cost and service firms competing on high-quality in an effort to examine whether knowledge strategy interacts with business strategy to influence performance.

Organizations can ill afford investments in knowledge strategies that will place them at a competitive disadvantage. Results of our study will provide managers with guidance on when they should invest in processes and technologies to externalize

and codify knowledge versus invest in tacit knowledge through policies and processes to increase and retain firm-specific human capital.

The next section of this paper presents the conceptual background to the study. We contrast the two strategies for knowledge management and discuss the dilemma organizations face in formulating a knowledge strategy. The contingent nature of the knowledge strategy-to-performance relationship is then hypothesized by comparing the knowledge needs of low-cost and high-quality service firms. This is followed by a description of the research methods, presentation of the empirical findings and conclusions.

CONCEPTUAL BACKGROUND

Information Technology and Knowledge Management

A defining characteristic of a knowledge management strategy focused on codification is the investment in a comprehensive IT infrastructure to support the organization's knowledge processes. Technologies overcome many of the limitations of manual and human-intensive knowledge systems by improving the efficiency of processes for knowledge acquisition, collection, storage, retrieval and transfer (Alavi and Leidner, 2001; Gold et al., 2001; Tanriverdi, 2005; Wang, Klein and Jiang, 2007). For example, IT can support service staff in the rapid and wide-scale acquisition of knowledge during their interactions with customers (Böhnstedt, Scholl, Rensing & Steinmetz, 2010; Lee and Choi, 2003). Through electronic databases, document repositories and intranets, disparate information fragments can be connected, large volumes of information can be stored, and more easily searched and retrieved (Alavi and Leidner, 2001; De Carvalho & Ferreira, 2001; Lindvall, Rus & Sinha, 2002; Sambamurthy and Subramani, 2005). IT systems also ensure that knowledge is consistently applied during service interactions. For example, automated workflow and decision support systems use embedded knowledge to consistently implement best practice operations and to quickly facilitate decision making and trigger action (Alavi and Leidner, 2001; De Carvalho and Ferreira, 2001). IT also extends knowledge distribution beyond personal communication lines by connecting employees from multiple locations and organizational levels to the codified knowledge base (Lee and Choi, 2003).

Proponents of codification and IT use recognize that poor commitment and high rates of employee turnover pose significant threats to the firm's knowledge base (Bontis, Keow and Richardson, 2000). By implementing IT systems for knowledge management an organization can protect itself from the knowledge loss caused by employee turnover (Stovel and Bontis, 2003: 305), overcome the limitations of a human-centric knowledge system, and ensure its knowledge base can be easily accessed and reused (Greiner et al., 2007; Stovel and Bontis, 2003).

Human Capital and Knowledge Management

Knowledge that can be externalized and represented in IT systems is however only a subset of the organization's knowledge stock. Much of an organization's knowledge base is the tacit knowledge that resides in its human capital (Hitt, Bierman, Shimizu and Kochhar, 2001). Employees create, share and apply knowledge in their work and should thus be recognized as the primary sources of organizational knowledge (Engström, Westnes and Westnes, 2003; Meso and Smith, 2000; Walsh, Enz and Canina, 2008; Zhou and Fink, 2003). Given its externalized nature, the value of codified knowledge can be eroded through observation and imitation by competitors (Haesli and Boxall, 2005; Jasimuddin, Klein and Connell, 2005; Johannessen, Olaisen and Olsen, 2001). Tacit knowledge is however embedded within human capital and is thus more difficult for competitors to observe and imitate. Through creation and application of tacit knowledge, employees provide an organization with capabilities that competitors cannot easily copy (Teece, 2000). From this perspective, human capital rather than codified knowledge stored in IT systems determines the competitiveness of firms (Johannessen et al., 2001).

The human capital approach to knowledge management therefore emphasizes the value of employees and favors people over technology solutions for advancing organizational knowledge (Gloet and Berrell, 2003). However, unlike the non-human storehouses of knowledge, i.e. IT-based knowledge repositories, human capital is not owned by the firm (Bontis et al., 2000; Engström et al., 2003) and knowledge remains tied to the individuals who create it (Haesli and Boxall, 2005). The knowledge of employees is thus only available to the organization if employees are willing and motivated to contribute their knowledge (Zhou and Fink, 2003), to make it available for organizational use and share it via socially interactive processes (Meso and Smith, 2000; Smedlund, 2008; Šajeva, 2010). Employee commitment, motivation and loyalty are thus important indicators of the firm's effectiveness in managing its tacit knowledge base (Bontis, 1998; Chen, Cheng and Hwang, 2005:161).

Classification of Knowledge Strategies

Drawing on the preceding arguments, we adapted the work of Choi and Lee (2003) and Haesli and Boxall (2005) to conceptualize a 2-by-2 matrix (see Figure 1). The first dimension reflects a firm’s focus on IT-based solutions to knowledge management. The second dimension reflects a firm’s focus on managing its knowledge base through the development and retention of valuable human-capital.

Focus on Human Capital	<p>Quadrant 3: Human Capital Focus.</p> <p>A focus on tacit knowledge through retention of human capital</p>	<p>Quadrant 4: Dual Focus.</p> <p>A focus on IT together with retention of human capital</p>
	<p>Quadrant 1: Unfocused.</p> <p>No active knowledge management</p>	<p>Quadrant 2: IT Focus.</p> <p>A focus on knowledge codification and use of IT</p>
Focus on IT-Based Knowledge Systems		

Figure 1: Knowledge strategy configurations (adapted from Choi and Lee, 2003; Haesli and Boxall, 2005)

Four knowledge strategy configurations thus emerge: (1) Unfocused firms are not actively managing organizational knowledge through either an IT or human capital focus, (2) IT focused firms emphasize codification and the use of IT to support knowledge management whilst de-emphasizing human capital retention, (3) human capital focused firms invest little in IT-based solutions to knowledge management and instead retain tacit knowledge by maintaining an environment of high employee commitment and low turnover, (4) while firms with a dual focus attempt to manage different types of knowledge by emphasizing both strategies.

The Knowledge Strategy Dilemma

The design of a knowledge strategy is however complicated. Neither the IT-based approach nor the human capital approach offers a complete solution (Jasimuddin et al., 2005). Without codification and IT, the organizational knowledge base is left vulnerable to individual loyalties and its development is over-reliant on the success of a complex set of interventions needed to secure commitment and retain knowledgeable human capital (Haesli and Boxall, 2005; Jasimuddin et al., 2005). However, codification captures only a subset of knowledge, results in a more imitable knowledge base (Johannessen et al., 2001), and requires significant investments in IT systems that employees may not be sufficiently motivated or willing to use (e.g. Damodaran and Olphert, 2000). By over-emphasizing knowledge externalization and IT solutions, companies may invest themselves into a position where they de-emphasize tacit knowledge and they ‘lose’ to the competition (Johannessen et al., 2001). A dual focus will be associated with extremely high costs and may therefore not be economically feasible. Moreover, a dual focused strategy will not deliver the expected returns if codified and tacit knowledge have varying levels of importance depending on the strategic and operating context of the firm. Organizations therefore face a dilemma when trying to position themselves beyond quadrant 1 in the matrix (Figure 1).

While past research has attempted to provide guidance by illustrating the value of an IT-based strategy (e.g. Gold et al., 2001; Khalifa, Yu and Shen, 2008), a human capital focused strategy (e.g. Crook, Todd, Combs, Woehr and Ketchen, 2011), or a mix of strategies (e.g. Choi and Lee, 2003; Andreeva and Kianto, 2012), there have been few studies concerned with possible contingent relationships between knowledge strategy and firm performance. More specifically, past research has not examined whether a particular knowledge strategy may be more or less effective depending on the business strategy of the firm. Evidence of such contingencies can provide much needed guidance to firms. We consider this next.

COMPARING LOW-COST AND HIGH-QUALITY SERVICE FIRMS

In the case of service firms, business strategy can be defined as the choice of the firm to create customer value by pursuing a low-cost, standardized service offering or a high-quality, differentiated service offering. While the former focuses on cost reduction so as to produce services more efficiently than competitors, the latter focuses on the delivery of a more customized service experience, the costs of which will be recovered through higher price premiums (O'Farrell, Hitchens and Moffat, 1993: 50).

Knowledge is an important input into service provision; and its importance to the success of customer service encounters has long been recognized (e.g. Bitner, Booms, Tetreault, 1990; Lewis and Entwistle, 1990). However, high levels of tacit knowledge and unique expertise may have little or no impact on the ability of low-cost firms to implement a strategy reliant on scale economies, standardization and consistency of service delivery (Sun, Aryee and Law, 2007; Walsh et al., 2008). Low-cost firms are considered less dependent on human capital for strategy implementation and investments into human capital beyond that required to deliver a low-cost service offering would be expensive and redundant. Instead, knowledge systems within low-cost firms should promote economies of scale by efficiently transferring and diffusing best practices and ensuring the exploitation and repeated use of proven codified knowledge (Choi and Lee, 2003). This may be especially important given reports of high employee turnover amongst these firms. The availability, effective dissemination and reuse of proven codified knowledge that is organized, integrated ready to be applied and easy to locate can thus save time and money and enhance the ability of the low-costs firm to offer a standardized and consistent service experience.

On the other hand, firms competing on service quality will be more dependent on retaining human capital who can apply their tacit knowledge to build elements of difference into the design and delivery of the firm's service offering (Walsh et al., 2008). The high costs associated with a human-centric knowledge system would be offset by the price premium these firms charge their customers. Efforts to externalize and codify knowledge may add little value to the firm's service differentiation efforts because tapping into a structured, codified and reusable knowledge base is unlikely to benefit the generation of new and innovative customer-specific solutions (Greiner et al., 2007).

Thus efforts to implement IT systems required for knowledge codification and reuse of best practice should have greater links to performance for service firms competing on low-cost, while efforts to build and retain human capital should have greater links to performance for firms competing on quality. To test this hypothesis, we carried out an empirical study of hospitality firms operating in South Africa. The study and empirical results are discussed next.

METHODOLOGY

Context of the Study

The empirical context for our study of service firms is the hospitality sector. Hospitality is knowledge intensive (Hallin and Marnburg, 2008), but there are concerns that knowledge is not being managed effectively (Pizam, 2007), and high employee turnover continues to be a significant challenge to the industry (Cho, Woods, Jang and Erdem, 2006; Tracey and Hinkin, 2008). Both retention of human capital (e.g. Gursoy and Swanger, 2007) and IT investment (e.g. Ip, Leung and Law, 2011) have been advocated as solutions to the performance problems of hospitality firms.

Sample and Procedures

A survey research design was employed to collect data from a sample of 656 hospitality firms in South Africa that included hotels, motels, resorts and lodges of at least 15 rooms. A self-administered, structured questionnaire instrument was administered using a combination of online and land mail distribution as well as onsite visits. The targeted respondent was the relevant owner, general manager (or equivalent) of each establishment. These individuals were selected as they were presumed knowledgeable about the performance of their establishments, as well as with its broader operational activities, staffing and IT investments. The instrument was pilot tested with 9 hotel general managers prior to its administration.

Measures

Customer service performance and Financial and market effectiveness were the two dependent variables. Customer service performance was a four item measure capturing the firm's success in ensuring customer satisfaction, retention, loyalty and trust ($\alpha=0.925$). Financial and market effectiveness was a six item scale capturing respondent's assessment of the firm's competitive performance in areas of room occupancy rates, market share, sales, profitability, and revenue per available room ($\alpha=0.909$). These indicators of hospitality firm performance were drawn from Ottenbacher (2007). The performance scale was anchored from 1 = much worse than competitors to 7 = much better than competitors.

To measure information technology focus, a five item scale was developed by adapting existing items (Chen, Tsou and Huang, 2009; Gold et al., 2001; Lee, Lee and Kang, 2005). Items captured IT support for the acquisition of knowledge about customers, suppliers and/or competitors; the extent to which knowledge is embedded in databases and decision support systems; the use of Intranet and electronic bulletin boards to share information; the use of IT systems that prompt action and recommend solutions to problems; and the use of IT to protect knowledge. Items were measured on a 7-point Likert scale ($\alpha=0.807$).

Three items reflected the firm's comparative success in maintaining a human capital focus. Items captured success in maintaining employee satisfaction and competence, and keeping employee turnover low ($\alpha=0.840$). Items were measured on a 7-point scale (1=much worse than competitors to 7= much better than competitors).

Consistent with Sun et al. (2007: 567) we used the hospitality firm's star rating as a proxy for business strategy. Lower-star establishments offer a basic accommodation service at lower cost, and higher-star establishments offer higher quality accommodation services at a price premium. As per Sun et al. (2007), lower star rated firms (3-stars or less) were classified as competing on the basis of low-cost, and a higher star rated establishments (4 and 5-stars) were classified as competing on the basis of service quality.

RESULTS

Useable responses were received from 107 star-rated establishments. Larger and smaller establishments were fairly well represented with roughly half the sample consisting of establishments over 100 rooms. The majority of respondents (75%) had been in operation for at least 10 years. Both chain and non-chain affiliated entities are well represented at 59% and 41% respectively. The response profile is presented in Table 1.

	No. of Respondents	%
Respondent Job Title		
Executive or General Manager	49	45.8
Operations Manager	43	40.2
Other Manager e.g. HR, Revenue	11	10.3
Owner Manager	4	3.7
Number of Rooms		
15-50	21	19.6
51-100	35	32.7
101-200	30	28.0
201-300	13	12.1
300+	8	7.5
Age of Property		
Less than 10 years	27	25.2
11-20 years	37	34.6
21-30 years	19	17.8
31-50 years	12	11.2
More than 50 years	12	11.2
Star Rating		
2-star	5	4.7
3-star	44	41.1
4-star	49	45.8
5-star	9	8.4

Table 1. Sample Profile (n=107)

Having established scale reliability and unidimensionality, we ran multiple regression tests (SPSS v.20) to examine the effects of both the IT and human capital dimensions of knowledge strategy on the two firm performance measures. We controlled for chain affiliation (0=no affiliation, 1=chain affiliated) and log of size (number of rooms).

Results confirm the two dimensions of knowledge strategy are significantly related to performance (see Table 2). Business strategy (0=low-cost versus 1=high-quality) was not associated with either performance outcome, nor was chain affiliation or establishment size. Results demonstrate that knowledge management is important to performance and that both IT-focused and human capital focused strategies contribute independently. Satisfied that these two dimensions of knowledge strategy deserve continued attention, we proceed to consider their interaction with business strategy next.

	Customer Service Performance	Financial and Market Effectiveness
Log of Size	-.151	-.102
Chain Affiliation	-.006	.041
Business Strategy	-.008	.093
IT Focus	.179*	.352***
Human Capital Focus	.614***	.401***
R ²	.446***	.324***

Table 2. Multiple Regression Results

* p<0.05 ** p<0.01 *** p<0.001

We used a median split on the IT focus and human capital (HC) focus variables to classify organizations into the quadrants of Figure 1. The mean scores on customer service performance and market and financial effectiveness for each of the business strategy and knowledge strategy configurations are presented in Table 3 and illustrated in Figures 2 and 3.

			Customer Service Performance		Market and Financial Effectiveness	
	Low Cost (n)	High Quality (n)	Low Cost Mean (std dev)	High Quality Mean (std dev)	Low Cost Mean (std dev)	High Quality Mean (std dev)
No Focus	15	14	5.083 (0.87)	5.161 (0.91)	4.558 (0.75)	4.536 (0.59)
IT Focus	7	11	5.875 (0.72)	5.205 (0.79)	5.500 (0.78)	5.242 (1.03)
HC Focus	10	21	5.725 (0.58)	6.354 (0.68)	4.900 (0.91)	5.603 (0.67)
Dual Focus	17	12	6.515 (0.43)	6.125 (0.52)	5.725 (0.87)	5.750 (0.80)

Table 3. Descriptive Statistics

Figure 2 illustrates the customer service performance scores. To determine whether interaction effects were significant, we carried out a two-way ANOVA with rank transformation. The results of the ANOVA test indicate that there is a significant main effect of knowledge strategy on performance ($F=15.9$, $p<0.001$) as well as a significant interaction between knowledge strategy and business strategy ($F=4.6$, $p<0.01$). Firms that do not have a focused knowledge management strategy are the poorest performers. A pair-wise comparison test shows that high-quality firms that under-emphasize human capital and adopt a predominantly IT focused knowledge strategy significantly underperform in the area of customer service performance (Mann-Whitney $U = 32$, $p<0.01$). Pair-wise comparison further revealed that low-cost firms combining IT and human capital

(a dual focus) perform significantly better on customer service than those relying on human capital alone (Mann-Whitney U = 23.5, $p < 0.01$).

Figure 3 depicts the market and financial effectiveness of low-cost and high-quality firms at each knowledge strategy configuration. ANOVA results found that there was a significant main effect of knowledge strategy on financial and market effectiveness ($F = 11.1, p < 0.001$). Although, no statistically significant interaction effect was found ($F = 1.6, p = .192$), results as illustrated in Figure 3 show a pattern similar to Figure 2. Pair-wise comparisons revealed that low cost firms focusing predominantly on human capital have statistically significantly poorer performance than those with a dual focus (Mann-Whitney U = 41.5, $p < 0.05$).

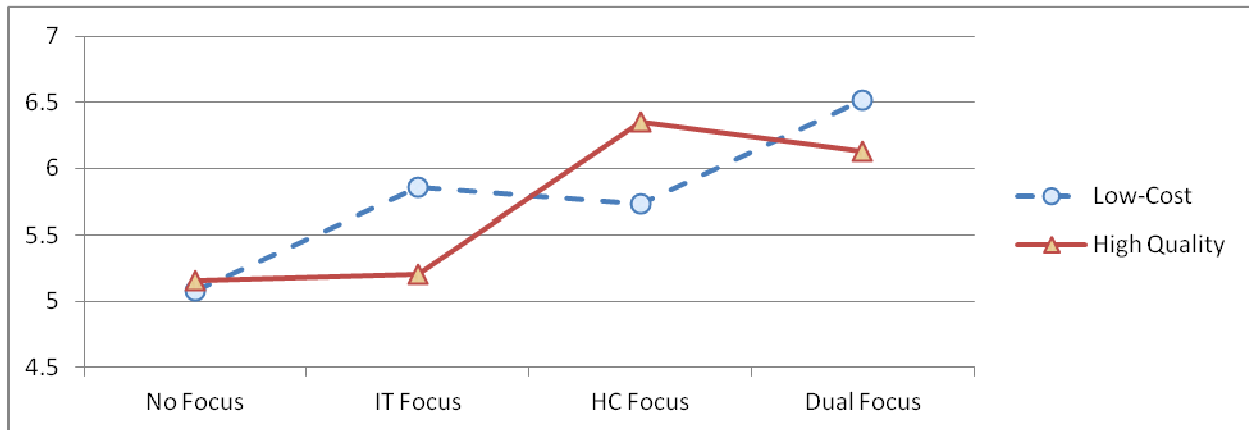


Figure 2: Interaction between Knowledge Strategy and Business Strategy: Effects on Customer Service Performance

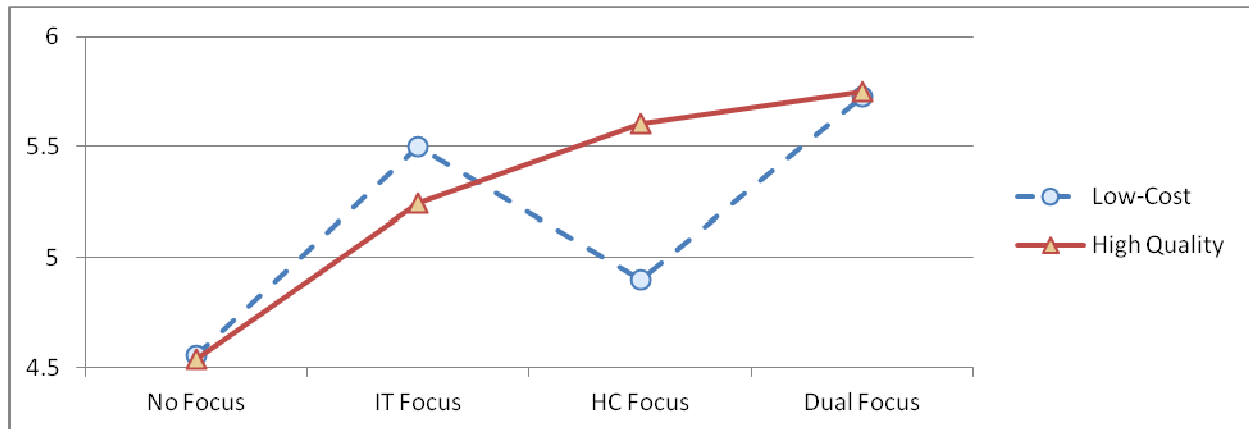


Figure 3: Interaction between Knowledge Strategy and Business Strategy: Effects on Market and Financial Effectiveness

CONCLUSION

This study compared the effects of four knowledge strategy configurations on the performance of hospitality firms competing on low-cost versus high-quality. Results confirm that the two dimensions of knowledge strategy are important to firm performance but they also interact with business strategy in exerting effects. Firms competing on quality are disadvantaged by an IT-focused knowledge strategy. They benefit from strategies to retain knowledge through investment in human capital. This is particularly evident for customer service performance. High-quality service firms will therefore need to engage in necessary human resource management practices to secure their tacit knowledge base through ensuring satisfaction and retention of their human capital.

On the other hand, low-cost firms with IT focused knowledge strategies perform better than those with a human capital focus. Low-costs firms should therefore consider investing in technologies to externalize and codify knowledge so that it is easily reused for repeated delivery of a standardized service offering, and more easily transferred between potentially transient employees. While a human capital focus cannot substitute for an IT focus, a dual focus does bring added improvements to customer service performance amongst low-cost firms. This confirms that even amongst low-cost firms, hospitality remains a high-touch service context.

Future work can overcome our limitations by using more objective assessments of firm performance, extending the empirical work to include other service firms and adopting longitudinal designs to strengthen causal inferences. Future work may also wish to explore the interactions between knowledge strategy configurations and other factors such as the firm's culture, structure and external environment.

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