

# Digital Governance and Its Role in Enhancing Organizational Agility in Algerian Sports Organizations

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## Abstract

This study examined the relationship between four dimensions of digital governance and organizational agility in the sports organization under study: digital leadership and strategy, digital transparency and accountability, data and information governance, and digital infrastructure and service integration. A descriptive correlational design was employed with a final sample of 30 employees. Data were collected using a 30-item questionnaire, of which 24 items measured digital governance (six items per dimension) and six items measured organizational agility. Cronbach's alpha coefficients demonstrated satisfactory internal consistency, ranging from 0.782 to 0.854 across the digital governance dimensions and reaching 0.824 for organizational agility. The findings showed positive and statistically significant correlations between organizational agility and digital leadership and strategy ( $r = 0.692$ ), digital transparency and accountability ( $r = 0.691$ ), data and information governance ( $r = 0.488$ ), and digital infrastructure and service integration ( $r = 0.789$ ). Separate simple linear regression models further indicated statistically significant predictive relationships for all four dimensions. Digital infrastructure and service integration displayed the greatest explanatory power in the separate models, accounting for 62.2% of the variance in organizational agility. The findings underscore the importance of integrated digital infrastructure, digital leadership, transparency, and effective data governance in supporting more agile sports management. Given the cross-sectional design and small single-organization sample, the results should be interpreted as predictive associations rather than causal effects.

**Keywords:** Digital Governance; Organizational Agility; Sports Organizations; Digital Leadership; Data Governance.

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## **1. Introduction**

Digitalization has become one of the most consequential forces reshaping contemporary management and governance. The use of technology is no longer confined to automating administrative procedures; it increasingly influences strategy, data management, the allocation of responsibilities, transparency, accountability, and service integration. Janowski (2015) describes the evolution of digital government as a progression from digitization to transformation, engagement, and contextualization, reflecting a shift from technology as a supporting tool to technology as a structural component of organizational decision-making and governance.

The OECD digital government framework similarly emphasizes digital-by-design services, data-driven administration, openness, proactiveness, and user-centeredness. It also stresses that the governance of digital transformation requires clear leadership, institutional coordination, defined roles and responsibilities, standards, and organizational instruments (OECD, 2020, 2021). Digital governance therefore extends beyond the provision of hardware and software; it concerns how organizations direct digital resources, regulate their use, and convert them into organizational value.

The sports sector has undergone the same shift. Sports organizations increasingly rely on digital systems to manage data, communication, services, programs, and stakeholder relations. Merten et al. (2024) found that successful digital transformation in national football associations depends on organizational capabilities such as leadership support, strategic sensitivity, modern infrastructure, digital skills, and knowledge management. Likewise, the systematic review by Falese et al. (2026) concludes that digital transformation in sports organizations is fundamentally a governance and organizational challenge, with leadership and strategy, governance structures, data management and privacy, and organizational change among its central themes.

At the same time, organizational agility has become increasingly important as organizations face rapid and uncertain change. Organizational agility refers to the capacity to sense relevant changes, make appropriate decisions, and translate those decisions into timely and effective action. Walter (2021) conceptualizes agility as a dynamic capability supported by interconnected organizational enablers, while Nafei (2016) distinguishes sensing, decision-making, and acting as key manifestations of agility. From this perspective, digital governance may enhance organizational agility by improving leadership direction, transparency, data quality, and technological integration, thereby strengthening the organization's ability to respond to change quickly and effectively.

## **2. Research Problem**

Previous Algerian studies have examined the role of digitalization and information technology in modernizing sport administration. Battat (2021) highlighted the contribution of digitalization to the development of sport management functions, while Basiman (2021) emphasized the importance of human resources and technological equipment in the use of information technology within sports organizations. Dahia and Ben Sayeh (2025) further reported that digital transformation supports organizational change in the Directorate of Youth and Sports in M'Sila. With regard to digital governance specifically, Trad and Layadi (2025) identified human, technological, and legislative requirements for its implementation in Algerian sports organizations.

Despite this growing body of research, the extent to which digital governance practices contribute to organizational agility within sports organizations remains insufficiently examined in the Algerian context. Algerian studies linking digital transformation to organizational agility have largely been conducted in industrial and telecommunications settings. Ghiad and Zerzar (2025) reported a significant relationship between digital transformation and organizational agility, while Qarmiti (2026) reached a similar conclusion in Algeria Telecom. The present study therefore addresses a more specific gap by examining the governance dimensions of digitalization, rather than technological transformation alone, within a sports management setting.

**Accordingly, the study addresses the following main question:**

**To what extent are the dimensions of digital governance predictive of organizational agility in the sports organization under study?**

## **2.1 Research Questions**

- What is the level of each digital governance dimension in the sports organization under study?
- What is the level of organizational agility among the respondents?
- Does digital leadership and strategy have a statistically significant predictive relationship with organizational agility?
- Does digital transparency and accountability have a statistically significant predictive relationship with organizational agility?
- Does data and information governance have a statistically significant predictive relationship with organizational agility?
- Does digital infrastructure and service integration have a statistically significant predictive relationship with organizational agility?

## **3. Research Objectives**

- To establish the conceptual foundations of digital governance and organizational agility within sport management.
- To assess the levels of the digital governance dimensions among the respondents.
- To determine the level of organizational agility in the sports organization under study.
- To examine the relationship between each digital governance dimension and organizational agility.
- To estimate the explanatory power of each digital governance dimension through separate simple linear regression models.
- To identify the dimension with the strongest explanatory power in the separate models and derive practical recommendations for digital management and organizational agility.

## **4. Significance of the Study**

### **4.1 Theoretical Significance**

The study contributes theoretically by linking digital governance with organizational agility in sport management. Rather than treating digitalization as a purely technical phenomenon, it conceptualizes

digital governance as a system of leadership, transparency, data governance, and service integration that may shape an organization's capacity to respond to changing conditions.

## **4.2 Practical Significance**

The practical value of the study lies in identifying the digital governance domains most strongly associated with organizational agility. This can help sports administrators direct development efforts toward digital infrastructure, service integration, leadership, transparency, and data governance instead of limiting digital transformation to technology acquisition.

## **5. Research Hypotheses**

- H1a: Digital leadership and strategy have a positive and statistically significant predictive relationship with organizational agility.
- H1b: Digital transparency and accountability have a positive and statistically significant predictive relationship with organizational agility.
- H1c: Data and information governance have a positive and statistically significant predictive relationship with organizational agility.
- H1d: Digital infrastructure and service integration have a positive and statistically significant predictive relationship with organizational agility.

## **6. Theoretical Framework**

### **6.1 Digital Governance**

Digital governance refers to the principles and institutional arrangements through which technology, data, and digital systems are directed and aligned with strategy, responsibility, transparency, and decision-making. It differs from digitization, which may simply involve converting conventional procedures into electronic formats. Digital governance addresses how digital resources are directed, responsibilities are assigned, data quality is protected, and services are integrated (Janowski, 2015; OECD, 2021).

#### **6.1.1 Digital Leadership and Strategy**

Digital leadership and strategy refer to the extent to which management articulates a clear digital vision, integrates digital objectives into organizational plans, supports the institutional use of technology, and develops employees' digital capabilities. Sport management research identifies leadership support and strategic sensitivity as key organizational enablers of successful digital transformation (Merten et al., 2024).

#### **6.1.2 Digital Transparency and Accountability**

This dimension captures the ability of digital systems to make information, workflows, and responsibilities more visible and traceable, thereby strengthening accountability and reducing ambiguity and delay. The public value literature on digital government links digitalization with greater openness, improved administration, institutional trust, and better organizational interaction (Twizeyimana & Andersson, 2019).

### **6.1.3 Data and Information Governance**

Data and information governance encompasses the rules governing data collection, updating, protection, access, exchange, and use in decision-making. Recent sport management research places data management and privacy among the central themes of digital transformation and governance in sports organizations (Falese et al., 2026).

### **6.1.4 Digital Infrastructure and Service Integration**

This dimension concerns the availability of technological equipment, connectivity, and technical support, as well as the capacity of digital systems to integrate functions across organizational units, reduce duplication, and save time and effort in service delivery. Merten et al. (2024) identify modern digital infrastructure as one of the organizational capabilities necessary for successful digital transformation.

### **6.2 Organizational Agility**

Organizational agility is an acquired and continuously available capability that enables an organization to respond to change rapidly and effectively (Walter, 2021). Agility research commonly distinguishes sensing, decision-making, and acting or responding (Nafei, 2016). In the present study, organizational agility was operationalized as a single six-item construct, with higher scores indicating a greater perceived capacity for rapid and effective organizational response.

### **6.3 Theoretical Relationship Between Digital Governance and Organizational Agility**

The expected relationship between the two constructs can be explained through several complementary mechanisms. Digital leadership clarifies priorities; transparency reduces ambiguity; data governance improves the quality and accessibility of information used in decision-making; and integrated digital infrastructure facilitates rapid coordination and implementation. Digital governance can therefore be understood as a set of organizational enablers that support sensing, decision-making, and response - the core functions underlying organizational agility.

## **7. Previous Studies and Research Gap**

Battat (2021) reported that digitalization contributes to the modernization of sport administration by supporting planning, implementation, monitoring, evaluation, and information infrastructure. In a field study of sports organizations in Ouargla, Basiman (2021) found relatively strong human and technological resources but uneven use of information technology across administrative activities.

Dahia and Ben Sayeh (2025) concluded that digital transformation constitutes an important foundation for organizational change in the Directorate of Youth and Sports in M'Sila. Focusing directly on digital governance, Trad and Layadi (2025) found that its implementation in Algerian sports organizations requires human, technological, and legislative conditions. At the international level, Merten et al. (2024) identified a set of organizational capabilities required for digital transformation in national football associations, while Thompson et al. (2024) showed that digital technology may support change in non-profit sports organizations, although strategic transformation depends on embedding technology within the organization's broader orientation. Falese et al. (2026) further note that the field still requires more quantitative empirical testing.

With regard to organizational agility, Walter (2021) conceptualizes agility as an integrated dynamic capability, while Nafei (2016) operationalizes it through sensing, decision-making, and acting. In Algeria,

Azzouz (2023) found a significant relationship between strategic vigilance and organizational agility, Ghiad and Zerzar (2025) reported a significant relationship between digital transformation and organizational agility, and Qarmiti (2026) found a similar pattern in the telecommunications sector.

Taken together, the literature suggests a clear research gap. Algerian sport studies have examined digitalization, organizational change, and the requirements of digital governance, but have not directly tested how specific dimensions of digital governance are related to organizational agility within a sports organization. The present study addresses this gap by examining four dimensions of digital governance separately in relation to organizational agility.

## **8. Methodology**

### **8.1 Research Design**

A descriptive correlational design was adopted because it is appropriate for describing the study variables, examining relationships among them, and estimating the explanatory power of each digital governance dimension through separate simple linear regression models.

### **8.2 Sample**

The final sample consisted of 30 employees from the sports organization under study. These 30 completed responses constituted the dataset used in the statistical analysis.

### **8.3 Research Instrument**

Data were collected using a 30-item questionnaire organized into two main constructs. The first construct, digital governance, comprised 24 items equally distributed across four dimensions, with six items per dimension. The second construct, organizational agility, consisted of six items. Responses were measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

**Table 1. Distribution of Questionnaire Items**

| <b>Construct</b>       | <b>Dimension</b>                               | <b>Number of Items</b> |
|------------------------|------------------------------------------------|------------------------|
| Digital Governance     | Digital Leadership and Strategy                | 6                      |
| Digital Governance     | Digital Transparency and Accountability        | 6                      |
| Digital Governance     | Data and Information Governance                | 6                      |
| Digital Governance     | Digital Infrastructure and Service Integration | 6                      |
| Organizational Agility | Organizational Agility                         | 6                      |
| Total                  | —                                              | 30                     |

*Source: Prepared by the author based on the structure of the questionnaire.*

### **8.4 Reliability**

Internal consistency was assessed using Cronbach's alpha. Reliability coefficients for the four digital governance dimensions ranged from 0.782 to 0.854, while organizational agility yielded an alpha coefficient of 0.824. These values indicate satisfactory internal consistency for the purposes of the present analysis.

**Table 2. Cronbach's Alpha Reliability Coefficients**

| Dimension                                      | Items | Cronbach's $\alpha$ | Interpretation     |
|------------------------------------------------|-------|---------------------|--------------------|
| Digital Leadership and Strategy                | 6     | 0.847               | Good               |
| Digital Transparency and Accountability        | 6     | 0.854               | Good               |
| Data and Information Governance                | 6     | 0.828               | Good               |
| Digital Infrastructure and Service Integration | 6     | 0.782               | Acceptable to good |
| Organizational Agility                         | 6     | 0.824               | Good               |

Source: Author's calculations based on SPSS output.

### 8.5 Statistical Analysis

- Means and standard deviations were used to describe the study variables.
- Pearson's correlation coefficient was used to assess the strength and direction of the relationship between each digital governance dimension and organizational agility.
- Separate simple linear regression models were estimated to assess the predictive relationship between each digital governance dimension and organizational agility.
- $R^2$  and adjusted  $R^2$  were reported to indicate the explanatory power of each regression model.
- The F statistic was used to assess overall model significance, and the t statistic was used to assess the significance of each regression coefficient.

### 8.6 Interpretation of Mean Scores

To facilitate interpretation on the five-point Likert scale, the total mean score for each six-item dimension was divided by six to obtain an item-level mean. The following intervals were used: 1.00-1.80 = very low, 1.81-2.60 = low, 2.61-3.40 = moderate, 3.41-4.20 = high, and 4.21-5.00 = very high.

## 9. Study Limitations

- The sample was limited to 30 employees, which restricts the generalizability of the findings to Algerian sports organizations as a whole.
- The study relied on self-reported cross-sectional questionnaire data; consequently, the results do not establish temporal or causal relationships.
- The four digital governance dimensions were tested in separate simple regression models. Their relative explanatory power therefore reflects their individual associations with organizational agility rather than their unique effects after controlling for the other dimensions.
- The available standardized residual statistics did not indicate extreme observations beyond approximately  $\pm 3$ ; however, a complete evaluation of regression assumptions would require the original diagnostic plots and dataset.

## 10. Results

### 10.1 Descriptive Results

**Table 3. Descriptive Statistics for the Study Variables**

| <b>Variable / Dimension</b>                    | <b>Total Mean</b> | <b>SD</b> | <b>Item Mean / 5</b> | <b>Level</b> |
|------------------------------------------------|-------------------|-----------|----------------------|--------------|
| Digital Leadership and Strategy                | 19.4667           | 3.64581   | 3.244                | Moderate     |
| Digital Transparency and Accountability        | 22.0000           | 3.06257   | 3.667                | High         |
| Data and Information Governance                | 21.4000           | 3.74718   | 3.567                | High         |
| Digital Infrastructure and Service Integration | 22.0667           | 2.09981   | 3.678                | High         |
| Organizational Agility                         | 21.8333           | 2.15092   | 3.639                | High         |

*Source: Author's calculations based on SPSS output. Note: Item means were obtained by dividing each total mean by six items.*

Table 3 shows that organizational agility was rated at a high level, with an item mean of 3.639. Among the digital governance dimensions, digital infrastructure and service integration recorded the highest descriptive mean (3.678), followed closely by digital transparency and accountability (3.667) and data and information governance (3.567). Digital leadership and strategy recorded a moderate level (3.244). Descriptively, these findings suggest that technological integration and transparency were more strongly perceived than the leadership and strategic dimension among the respondents.

### 10.2 Correlation Results

**Table 4. Pearson Correlations Between Digital Governance Dimensions and Organizational Agility**

| <b>Digital Governance Dimension</b>  | <b>r</b> | <b>p</b>           | <b>N</b> | <b>Direction</b> |
|--------------------------------------|----------|--------------------|----------|------------------|
| Leadership & Strategy                | 0.692    | < 0.001            | 30       | Positive         |
| Transparency & Accountability        | 0.691    | < 0.001            | 30       | Positive         |
| Data & Information Governance        | 0.488    | 0.003 (one-tailed) | 30       | Positive         |
| Infrastructure & Service Integration | 0.789    | < 0.001            | 30       | Positive         |

*Source: Author's calculations based on SPSS output.*

All four dimensions of digital governance were positively and statistically significantly correlated with organizational agility. The strongest correlation was observed for digital infrastructure and service integration ( $r = 0.789$ ), followed by digital leadership and strategy ( $r = 0.692$ ) and digital transparency and accountability ( $r = 0.691$ ). Data and information governance showed a weaker, although still positive and statistically significant, correlation with organizational agility ( $r = 0.488$ ).

### 10.3 Hypothesis Testing Using Simple Linear Regression

**Table 5. Summary of Separate Simple Linear Regression Models**

| Predictor                            | R     | R <sup>2</sup> | Adjusted R <sup>2</sup> | F      | df      | p       |
|--------------------------------------|-------|----------------|-------------------------|--------|---------|---------|
| Leadership & Strategy                | 0.692 | 0.479          | 0.460                   | 25.706 | (1, 28) | < 0.001 |
| Transparency & Accountability        | 0.691 | 0.477          | 0.459                   | 25.584 | (1, 28) | < 0.001 |
| Data & Information Governance        | 0.488 | 0.238          | 0.211                   | 8.740  | (1, 28) | 0.006   |
| Infrastructure & Service Integration | 0.789 | 0.622          | 0.609                   | 46.155 | (1, 28) | < 0.001 |

*Source: Author's calculations based on SPSS output.*

**Table 6. Regression Coefficients for the Digital Governance Dimensions**

| Predictor                            | Constant | B     | SE B  | $\beta$ | t     | p       | Decision      |
|--------------------------------------|----------|-------|-------|---------|-------|---------|---------------|
| Leadership & Strategy                | 13.888   | 0.408 | 0.081 | 0.692   | 5.070 | < 0.001 | H1a supported |
| Transparency & Accountability        | 11.157   | 0.485 | 0.096 | 0.691   | 5.058 | < 0.001 | H1b supported |
| Data & Information Governance        | 15.842   | 0.280 | 0.095 | 0.488   | 2.956 | 0.006   | H1c supported |
| Infrastructure & Service Integration | 4.001    | 0.808 | 0.119 | 0.789   | 6.794 | < 0.001 | H1d supported |

*Source: Author's calculations based on SPSS output.*

### 10.3.1 H1a: Digital Leadership and Strategy

Digital leadership and strategy showed a positive and statistically significant predictive relationship with organizational agility. The model yielded  $R = 0.692$  and  $R^2 = 0.479$ , indicating that this dimension, when modeled separately, accounted for approximately 47.9% of the variance in organizational agility within the sample. The regression model was statistically significant,  $F(1, 28) = 25.706$ ,  $p < 0.001$ . The standardized regression coefficient was  $\beta = 0.692$ , with  $t = 5.070$ ,  $p < 0.001$ . H1a was therefore supported.

### 10.3.2 H1b: Digital Transparency and Accountability

Digital transparency and accountability also demonstrated a positive and statistically significant predictive relationship with organizational agility. The model produced  $R = 0.691$  and  $R^2 = 0.477$ , indicating that the dimension separately accounted for 47.7% of the variance in organizational agility. The model was statistically significant,  $F(1, 28) = 25.584$ ,  $p < 0.001$ , and the standardized coefficient was  $\beta = 0.691$ ,  $t = 5.058$ ,  $p < 0.001$ . H1b was supported.

### 10.3.3 H1c: Data and Information Governance

Data and information governance had a positive and statistically significant predictive relationship with organizational agility, although its explanatory power was lower than that of the other dimensions. The model yielded  $R = 0.488$  and  $R^2 = 0.238$ , meaning that this dimension separately accounted for 23.8% of the variance in organizational agility. The model was statistically significant,  $F(1, 28) = 8.740$ ,  $p = 0.006$ , with  $\beta = 0.488$  and  $t = 2.956$ ,  $p = 0.006$ . H1c was therefore supported.

### 10.3.4 H1d: Digital Infrastructure and Service Integration

Digital infrastructure and service integration displayed the strongest predictive relationship in the separate regression models. The model yielded  $R = 0.789$  and  $R^2 = 0.622$ , indicating that this dimension, when modeled alone, accounted for 62.2% of the variance in organizational agility. The regression model was statistically significant,  $F(1, 28) = 46.155$ ,  $p < 0.001$ . The standardized coefficient was  $\beta = 0.789$ , with  $t = 6.794$ ,  $p < 0.001$ . H1d was therefore supported.

## 11. Discussion

Overall, the findings indicate that all four dimensions of digital governance are positively associated with organizational agility and explain a statistically significant proportion of its variance when each dimension is modeled separately. This pattern is consistent with the theoretical view of digitalization as an organizational and governance capability rather than merely the adoption of technological tools. Effective digital governance may shorten access to information, clarify responsibilities, facilitate coordination, and strengthen the speed with which organizations respond to change.

Digital leadership and strategy demonstrated relatively substantial explanatory power ( $R^2 = 0.479$ ). This result aligns with Merten et al. (2024), who identify leadership support and strategic sensitivity as pivotal capabilities in the digital transformation of national football associations, and with Falese et al. (2026), who place leadership and strategy among the central governance themes shaping digital transformation in sports organizations. From a managerial perspective, digital leadership may contribute to agility by accelerating resource mobilization, clarifying priorities, and legitimizing digital initiatives across the organization.

Digital transparency and accountability separately explained 47.7% of the variance in organizational agility. A plausible interpretation is that clearer workflows, information access, and lines of responsibility reduce ambiguity and shorten the time required for verification and coordination, thereby enabling faster organizational responses. This interpretation is consistent with digital government literature linking digitalization to openness, improved administration, and public value (OECD, 2020; Twizeyimana & Andersson, 2019).

Data and information governance showed a positive and significant, but comparatively weaker, predictive relationship ( $R^2 = 0.238$ ). This may suggest that the existence of data or formal data rules is not sufficient by itself to produce high levels of agility unless the data are timely, integrated, and actively embedded in decision processes. This interpretation remains tentative and should be tested in future studies, but it is consistent with Falese et al. (2026), who identify data management and privacy as continuing challenges in the digital transformation of sports organizations.

Digital infrastructure and service integration exhibited the strongest relationship and the highest explanatory power in the separate models ( $R^2 = 0.622$ ). This finding is plausible in an administrative context where rapid organizational response depends on reliable connectivity, adequate equipment, integrated systems, and efficient information exchange across organizational units. The result converges with Merten et al. (2024), who identify modern infrastructure as an essential digital capability, and with Thompson et al. (2024), who show that digital tools can support organizational change when embedded in communication, coordination, and service delivery.

The overall pattern also corresponds with Algerian research outside sport that has linked digital transformation to organizational agility (Ghiad & Zerzar, 2025; Qarmiti, 2026). The present study, however, extends this line of inquiry by moving beyond digital transformation as a broad technological construct and decomposing digital governance into leadership, transparency, data governance, infrastructure, and integration within a sports management context.

The ranking of the dimensions should nevertheless be interpreted cautiously. Each predictor was examined in a separate regression model; therefore, the results do not demonstrate that digital infrastructure and service integration would remain the strongest predictor after accounting for overlap

among the four dimensions. A larger study using multiple regression or structural equation modeling would be required to estimate the unique contribution of each dimension simultaneously.

## **12. Conclusion**

The study concludes that digital governance is closely associated with organizational agility through multiple dimensions that differ in strength. All four hypotheses were supported: digital leadership and strategy, digital transparency and accountability, data and information governance, and digital infrastructure and service integration each showed positive and statistically significant predictive relationships with organizational agility when examined separately. Digital infrastructure and service integration displayed the greatest explanatory power, whereas data and information governance showed the smallest, although still statistically significant, explanatory contribution. The findings indicate that more agile sport administration is unlikely to emerge from technology adoption alone; rather, it requires alignment among leadership, information, transparency, infrastructure, and digital integration.

## **13. Recommendations**

- Develop integrated digital infrastructure and connect systems and services across organizational units to reduce duplication and accelerate administrative procedures.
- Embed digital objectives within the organization's overall strategy and assign clear leadership responsibilities for monitoring digital transformation.
- Strengthen digital transparency through systems that make procedures, decisions, and accountability more traceable.
- Improve data quality, updating, and interoperability, and integrate data directly into managerial decision-making rather than limiting digitalization to electronic storage.
- Enhance employees' digital competencies and provide continuous technical support to ensure effective use of digital systems.
- Conduct future studies with larger samples and multiple sports organizations, using multiple regression or structural equation modeling to estimate the unique contribution of each digital governance dimension.
- Undertake comparative studies across Directorates of Youth and Sports, multisport complexes, leagues, and clubs to identify differences in digital maturity and organizational agility.

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