The American Journal of Engineering and Technology
ISSN 2689-0984 | Open Access

TYPE Original Research
PAGE NO. 41-47
DOI 10.37547/tajet/Volume07Issue11-05

Check for updates

Godzilla Vs. Kong Escape Room: Orchestrating Spectacle, Safety, And Flow

Oleksandr Gorbachenko
Lead Project Engineer at 60out Escape Rooms, Los Angeles, California, USA

OPEN ACCESS

SUBMITTED 02 October 2025
ACCEPTED 14 October 2025
PUBLISHED 10 November 2025
VOLUME Vol.07 Issue 11 2025

CITATION
Oleksandr Gorbachenko. (2025). Godzilla Vs. Kong Escape Room: Orchestrating Spectacle, Safety, And Flow. The American Journal of Engineering and Technology, 7(11), 41–47. https://doi.org/10.37547/tajet/Volume07Issue11-05

COPYRIGHT
© 2025 Original content from this work may be used under the terms of the creative common's attributes 4.0 License.

Abstract: This article examines 60Out's Godzilla vs. Kong escape room as a representative case of designing complex narrative–interactive environments in which spectacle, safety, and player engagement are fused into a single managerial system. The relevance of the study is defined by the contemporary evolution of the location-based entertainment industry, which is shifting from traditional game formats to comprehensive immersive spaces that must simultaneously deliver sensory impact, cognitive absorption, and operational reliability. The novelty lies in conceptualizing a model of coordinated orchestration, implemented through the COGS system, which functions as a practical instantiation of the Experience Manager from interactive narrative theory. This mechanism demonstrates the feasibility of integrating three traditionally separate domains—show control, the cognitive dynamics of flow, and engineering safety—into a unified, coherent control architecture. The principal findings indicate that the success of Godzilla vs. Kong derives not only from high-technology components, but from their systemic coordination: synchronization of multimedia to produce spectacle, nonlinear design and adaptive hints to sustain flow, and embedded monitoring and intervention capabilities to ensure safety. It is shown that such integration yields durable business outcomes (a 25% increase in bookings) and establishes the basis for a new disciplinary paradigm in which experience design is understood as the governance of interdependent parameters of risk, engagement, and dramaturgy. The article will be useful to researchers in interactive media, entertainment-industry professionals, and designers of themed environments.

Keywords: Escape room, interactive narrative, flow, safety, orchestration, themed entertainment, COGS,

experience manager.

Introduction

Contemporary escape rooms have evolved markedly from simple puzzle spaces into complex, technologically saturated narrative environments. These spaces are defined by their capacity to immerse participants in a story through careful design of the physical setting, interactive elements, and orchestrated events. Themed entertainment design has become a distinct discipline, combining architecture, narratology, and experiential design to create holistic, story-driven worlds. Academic programs now explicitly train practitioners to create such environments in which guests interact with spaces engineered to convey narrative (UCF, n.d.).

The Godzilla vs. Kong (GvK) escape room by 60Out exemplifies this trajectory. The project's mandate was to translate the film's energy into a reliable live show. This formulation precisely frames the objective as the creation of a live, narrative experience rather than a mere game. This approach reflects a broader industry shift from passive consumption to active engagement. Research on theme parks shows that interactivity is becoming a key driver, transforming visitors from observers into active participants (Senita, 2017). The GvK project embodies this trend: elements such as the starship interface or lava flows are not pre-rendered videos, but dynamic systems that react to player actions in real-time. Consequently, the environment functions not just as a backdrop that is static but rather as a character that is active and also responsive in the player's story.

It is argued in this article that the success of the GvK escape room did occur and bookings increased 25% after its launch. Its high-tech parts and a joint orchestration plan cause this success. This strategy manages the ostensibly divergent demands of spectacle, player flow, also physical safety holistically but concurrently, implemented through a central control system as a powerful model for the industry at large.

Methodology

The study draws on an integrated corpus of academic and applied sources spanning three interlinked domains: interactive narrative theory, the cognitive psychology of flow, and safety standards in the themed-entertainment industry. The theoretical foundation includes work on the Experience Manager as a conceptual mediator between authorial control and player agency (Riedl & Bulitko, 2012), research on organizing innovative environments via distributed computational nodes (Bergesio et al., 2017; Reddy, 2022), and publications on narrative management in multi-user systems (Zhu & Ontañón, 2019). To ground the psychological mechanisms of engagement, we drew on studies on the prerequisites and dynamics of flow (Footitt et al., 2024). The role of hints and adaptive guidance was analyzed using empirical evidence from VR training (Drey et al., 2020). Ethical and regulatory safety frameworks were considered through ASTM F24 guidance (ACCT, n.d.) and risk-management reviews in engineering (Luo et al., 2024).

The methodological design comprised three analytic steps. First, we conducted a comparative analysis of architectural approaches to show management in the escape-room sector, contrasting the COGS system with traditional show-control solutions. This segment emphasized the orchestration platform's capacity to synchronize multimedia, govern nonlinear logic, and integrate real-time adaptation mechanisms. Second, a systematic review of cognitive theories to align practical room elements (nonlinear puzzles, a dynamic hint system, and terminal interfaces) with the prerequisites of flow, including the balance of skills and challenges, clarity of goals, and immediate feedback. Third, a content analysis of industry standards and safety practices was conducted to evaluate how COGS's monitoring and intervention functions align with the principles of patron responsibility and digital risk governance.

Results And Discussion

The technical substrate of the GvK escape room is the COGS system, which may be construed as a practical realization of the theoretical Experience Manager (EM) from interactive narrative research.

GvK employs a centralized coordination module, COGS, operating within a local-area network to orchestrate timing synchronization and control the logical sequencing of operations. This system orchestrates a distributed network of heterogeneous devices: DMX protocol for lighting, Arduino nodes for touch and motion sensing, and a cluster of at least eleven Raspberry Pi endpoints for media playback and interactive games.

This architecture reflects core principles of ubiquitous and pervasive computing, whereby computational capacities are embedded into the surrounding

environment to create a smart space (Bergesio et al., 2017). The aim is for technology to recede into the background, enabling a seamless experience in which the intricate orchestration of disparate objects yields coherent, intelligent behavior (Reddy, 2022). COGS functions as the orchestration layer that enables these diverse smart objects to interoperate.

The Experience Manager (EM) is defined as an intelligent agent that monitors events in the (virtual) world and intervenes to steer the user's experience toward desired narrative or pedagogical goals, balancing authorial intent and player freedom, as illustrated in Figure 1 (Riedl & Bulitko, 2012).

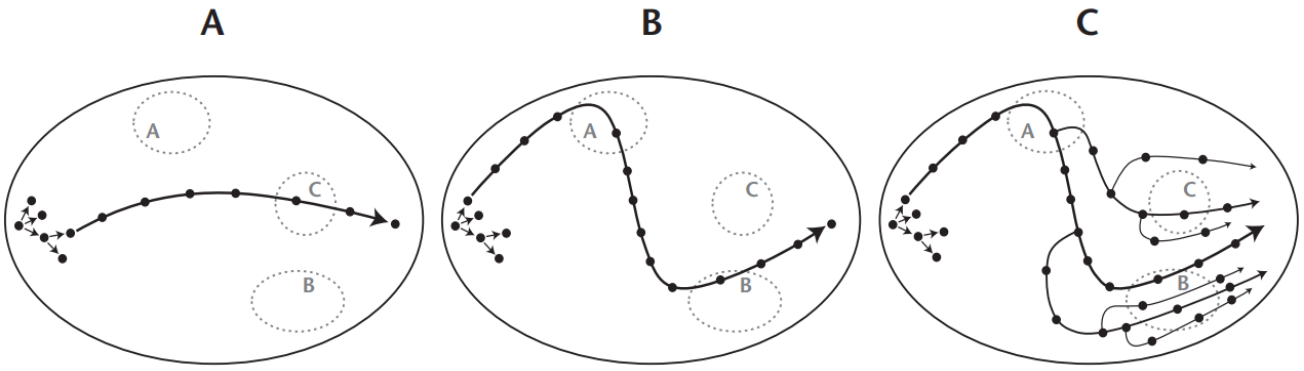

Fig. 1. The Experience Management Problem Is to Compute Trajectories through State Space (Riedl & Bulitko, 2012)

a. A possible narrative trajectory through state space. b. A possible narrative trajectory that visits states deemed favorable and avoids states deemed unfavorable. c. Accounting for player interaction

COGS performs precisely this function: it controls in real time, tracks dependencies via soft locks, and enables the operator to start, pause, skip, or roll back any cue without breaking flow.

Accordingly, the GvK design transcends simple, linear show control, which typically comprises preprogrammed sequences. COGS's ability to govern a nonlinear flow with multiple active puzzles and to adapt to player pacing demonstrates the EM's intelligent, responsive character. The system is engineered to manage a narrative experience, not merely to execute a script.

Academic research on EM often focuses on single-user digital environments, as seen in Figure 2, and treats multi-user scenarios as a complex, open research problem (Zhu & Ontañón, 2019).

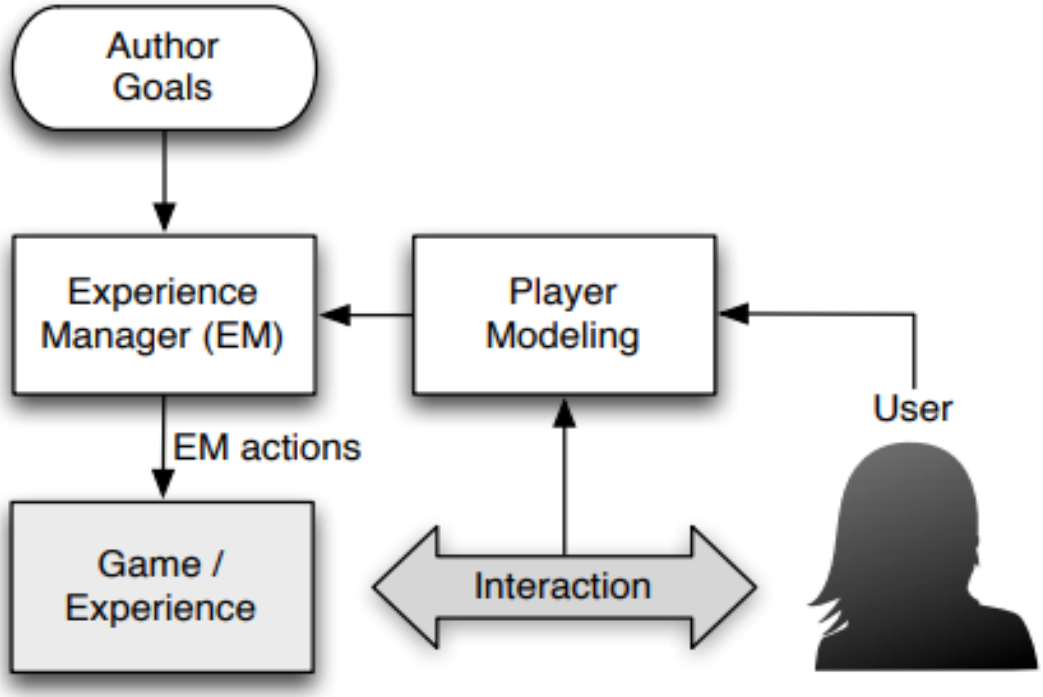

Fig. 2. The main control loop of a standard experience manager (Zhu & Ontañón, 2019)

The primary difficulty lies in aggregating the needs and actions of multiple players to forge a unified, coherent experience. By its very nature, GvK is a physical, multi-player system designed for teams of up to 8 participants. Its nonlinear design, which permits player fission, and COGS's capacity to track multiple parallel puzzle states together constitute a working solution to this very problem. Consequently, this case not only aligns with existing theory but also contributes valuable evidence that advances it by demonstrating a practical solution to a known theoretical challenge. The room's core mechanics are deliberately engineered to elicit and sustain this optimal state of engagement.

Consider the prerequisites of flow, a state of full absorption in an activity wherein an individual is wholly focused and derives enjoyment from the process (Footitt et al., 2024). Studies identify several key antecedents for achieving flow: (1) a clear balance between the perceived difficulty of the task and the player's skills; (2) clear, unambiguous goals; and (3) immediate, direct feedback to actions. A mismatch in which difficulty exceeds skill induces anxiety, whereas the converse—skills vastly exceeding difficulty—produces boredom.

The GvK design directly addresses these prerequisites, as shown in Table 1. The room employs a nonlinear puzzle structure in which approximately four puzzles are active at any given time, each intended for two players. This allows teams to self-organize, distributing tasks according to individual abilities and preventing the entire group from becoming stuck on a single puzzle that they find difficult. This approach is a powerful mechanism for maintaining a balance between complexity and skill in a heterogeneous group.

The adaptive hint system serves as a real-time difficulty regulator. It works in cadence rather than blindly, providing hints only when the team stalls (on PuzzleStalled) and canceling them when pace recovers (on PaceRecovered), as depicted in Figure 3.

```
on PuzzleStalled(p) and pace == slow -> enqueue_hint(p)
on PaceRecovered or MilestoneReached(cluster) -> cancel_pending_hints(cluster)
on CriticalPathBlocked -> emit_progressive_hint(sequence=[soft, clearer, explicit])
```

Fig. 3. Event-Driven Hint Gating Logic for Adaptive In-World Assistance

This prevents players from slipping into anxiety or frustration, keeping them within the flow channel. This approach aligns with research indicating that automated adaptive hints outperform on-demand or non-adaptive hints, which can disrupt the flow (Drey et al., 2020).

Interactive elements such as the starship interface and the eight-player decryption game provide clear, diegetic goals. The orchestration mechanism supplies immediate feedback by tightly synchronizing lighting effects, audio, UI reactions, and sound hits with player actions, rendering the consequences of those actions unambiguous.

Table 1. Compliance of the GvK quest room design with the assumptions of flow theory

Flow Theory Premise	Godzilla vs. Kong ER Design Element	Mechanism of Action and Supporting Data
1. Balance of challenge and skills	Nonlinear puzzle structure	Allows an 8-person team to split into smaller groups, each freely choosing from ~ four puzzles available simultaneously. This accounts for diverse skill sets and prevents whole-group bottlenecks, maintaining an optimal difficulty level for different players at the same time.

2. Dynamic difficulty regulation	Adaptive in-game hint system	The COGS system tracks player pace. If puzzle solving takes too long, it delivers a context-specific letter to prevent frustration (anxiety). If the team is progressing smoothly, pending hints are canceled to avoid over-help (boredom). This actively manages the experience, keeping players within the flow channel.
3. Clear goals	Interactive terminals and puzzles	The starship interface and rhythm-based decryption mini-game provide explicit, diegetic tasks (redirect energy, decode fragments), giving players clear, immediate goals within the narrative.
4. Immediate feedback	Synchronized multimedia orchestration	COGS is tuned so that light effects, analyzer rhythms, interface responses, and sound hits occur simultaneously in reaction to player actions. This ensures instant, multisensory confirmation that their actions have consequences, fulfilling a key requirement for flow.

Safety in the GvK project is treated not as an add-on but as an integral component of the design, governed by the same orchestration mechanism that generates spectacle.

Large-scale physical and interactive installations carry inherent liabilities and risks of bodily harm. Effective risk management requires proactive identification, assessment, and mitigation strategies (Luo et al., 2024). COGS provides a unified operator console from which staff can start, pause, skip, or roll back any cue without breaking flow. This centralized control is a powerful risk-management instrument. It enables the human operator to function as a real-time safety monitor. If a hazardous situation arises (e.g., a player stumbles near a moving scenic element), the operator can instantly suspend room operations, preventing injury. Such proactive monitoring and instant intervention align with best practices in managing risks in complex systems.

The themed-entertainment industry relies on standards such as ASTM F24 to ensure safety in design, manufacture, and operation (ACCT, n.d.). A key component of these standards is the principle of Patron Responsibility, which states that visitors assume inherent risks and must act responsibly, heeding all warnings.

The GvK design supports these norms. Operator monitoring and intervention capabilities complement the principle of patron responsibility. The system enables the operator to enforce safety rules and manage situations in which visitors may behave imprudently, thus creating a critically important layer of operational safety. The very existence of a sophisticated control system demonstrates a commitment to safety consonant with the spirit of these international standards.

It is important to note that the orchestration mechanism is dual-use, inseparably linking spectacle and safety. The operator's ability to pause or skip cues is cited in the context of flow management for the show; yet the very same capability is a critical safety function. In a well-designed system, these are not separate features. The instrument used to hit a dramatic beat with precision is the same instrument used to avert an accident. Such integration is more effective and reliable than maintaining separate show and safety systems, because safety becomes an intrinsic property of the very architecture that governs experience.

Our analysis indicates that the GvK escape room's success is a direct consequence of the coordinated orchestration model. In this spectacle, flow, and safety are governed as interdependent properties of a single, unified system. The orchestration mechanism (COGS) is the central hub. It produces spectacle by synchronizing multimedia. The same mechanism powers mechanics (nonlinear puzzles, adaptive hints) that induce flow in players. Simultaneously, its real-time monitoring and intervention affordances provide the foundation for robust safety.

This integrated model connects directly to the project's success metrics. High-quality spectacle attracts

customers. Engineered flow yields high satisfaction and positive reviews. Reliable safety and operational efficiency (rapid room resets, stable throughput) sustain a durable, profitable business model. The 25% growth in bookings appears not as happenstance but as the logical outcome of this sophisticated, holistic design approach.

Conceptually, the model can be represented as follows: at the center lies the Orchestration Mechanism, from which bidirectional links extend to Spectacle, Flow, and Safety. This illustrates how the mechanism simultaneously influences the state of these three domains and receives feedback from them, collectively shaping a positive Guest Experience and ensuring the project's Economic Viability.

Conclusion

The principal theoretical nodes developed in the study—the concept of the Experience Manager from interactive-narrative theory, the psychology of flow, and engineering safety and risk-management standards—operate not as isolated disciplines but as mutually complementary dimensions of immersive-space design. The Experience Manager supplies the algorithmic logic for authorial control and adaptive mediation; flow theory supplies the evaluative criteria for interaction success (the balance of challenge and skill, clarity of goals, and immediate feedback); and safety and risk-management standards prescribe the organizational and technical mechanisms of control. Their significance lies in the fact that only the coordinated, synchronous implementation of these requirements makes it possible to achieve, simultaneously, strong emotional impact, sustained engagement, and predictable operational reliability.

The Godzilla vs. Kong project provides a concrete instantiation of these ideas. In that case COGS functions as an empirical Experience Manager: it synchronizes multimedia elements to produce a unified spectacle, regulates a nonlinear task architecture and an adaptive hinting system to sustain flow, and at the same time equips operators with tools for immediate intervention to preserve safety. This technical–procedural unity is not a mere summation of features but an architectural synthesis that accounts for observed business and operational outcomes (e.g., a 25% increase in bookings) and for enhanced operational resilience.

Theoretically and practically, therefore, the coordinated-orchestration model realized through COGS proposes a reproducible paradigm: experience conceived as a managed system of interdependent parameters—spectacle, flow, and risk. This reframes the industry's focus from element-by-element aesthetics to the design of control architectures in which effectiveness is determined not by isolated effects but by their real-time coherence.

References

1. ACCT. (n.d.). ASTM Overview. ACCT. Retrieved September 9, 2025, from https://www.acctinfo.org/astm-overview
2. Bergesio, L., Bernardos, A. M., & Casar, J. R. (2017). An Object-Oriented Model for Object Orchestration in Smart Environments. Procedia Computer Science, 109, 440–447. https://doi.org/10.1016/j.procs.2017.05.415
3. Drey, T., Jansen, P., Fischbach, F., Frommel, J., & Rukzio, E. (2020). Towards Progress Assessment for Adaptive Hints in Educational Virtual Reality Games. Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems, 1–9. https://doi.org/10.1145/3334480.3382789
4. Footitt, T., Christofi, N., Poulus, D. R., Carras, M. C., & Stavropoulos, V. (2024). Gaming Disorder: The role of a gamer's flow profile. Addictive Behaviors Reports, 19, 100555. https://doi.org/10.1016/j.abrep.2024.100555
5. Luo, Q., Sun, C., Li, Y., Qi, Z., & Zhang, G. (2025). Applications of digital twin technology in construction safety risk management: a literature review. Engineering Construction and Architectural Management, 32(6), 3587-3607. https://doi.org/10.1108/ecam-11-2023-1095
6. Reddy, T. A. (2022). Ambient Computing: The Integration of Technology into Our Daily Lives. Journal of Artificial Intelligence & Cloud Computing, 1(4), 1–6. https://doi.org/10.47363/jaicc/2022(1)135
7. Riedl, M. O., & Bulitko, V. (2013). Interactive Narrative: An Intelligent Systems Approach. AI Magazine, 34(1), 67-77. https://doi.org/10.1609/aimag.v34i1.2449
8. Senita, J. P. (2017). The Disruptive Impact Of Game Design, Mobile Technology, Social Networks, And Emerging Media On Theme Parks. TDL. https://utd-ir.tdl.org/server/api/core/bitstreams/39f5df9e-

4976-4fce-8cfa-e153892274e1/content

9. UCF. (n.d.). Themed Experience Graduate Programs. UCF. Retrieved September 1, 2025, from https://cah.ucf.edu/themed-experience/

10. Zhu, J., & Ontañón, S. (2019). Experience Management in Multi-Player Games. Arxiv. https://doi.org/10.48550/arxiv.1907.02349