

## **From Luxury to Responsibility: The Evolution of Hotel Pools through Smart Technology**



Source: Pixabay (2017)

### **Background**

Due to their high water and energy usage, swimming pools have traditionally been viewed as expensive and environmentally unfriendly. However, recent innovations have made it possible for pools to become more efficient and sustainable, showcasing a hotel's commitment to responsible tourism (Hospitality Technology, 2025). This case study will explore how smart, eco-friendly pools are emerging as a new status symbol for hotels.

By integrating water meters, sensors, and software, smart pool systems enable hotels to monitor variables such as water level, temperature, and power usage in real time. This provides actionable insights for managers to minimize excessive water and energy consumption (Fluidra, 2024). Additionally, these systems can detect unusual usage patterns and alert managers to potential leaks, significantly reducing the risks of service disruptions and maintenance costs (Hotel Technology News, 2024a). As a result, smart pool systems promote efficient use of resources while offering cost savings for hotels.

Traditionally, pool maintenance has been carried out manually by hotel staff with sufficient understanding of water chemistry, filtration systems, and compliance protocols. However, smart pool systems can help control water quality and uphold safety standards in a more ideal and efficient way through automation (Hotel Technology News, 2024b). For example, many hotels are now adopting smart dosing technology, where chemicals such as chlorine flocculant are automatically injected into the pool to keep pH levels optimal and maintain a safe, healthy condition for swimmers (Smart Water Magazine, 2022).

Apart from incorporating smart systems to manage their pools, hotels are also seeking more eco-friendly alternatives. For example, some hotels are utilizing sustainable materials, such as recycled glass tiles and nontoxic sealants, to build their pools (Hospitality Technology, 2025).

Similarly, plants and biological filters are also used to replace chlorine-based chemicals in controlling water quality (Hospitality Technology, 2025).

### **Challenges**

While recent innovations have enabled pools to become more efficient and sustainable, the initial investment in smart technology and sustainable materials can be substantial, particularly for existing pools that are heavily invested in legacy systems. Consequently, implementing these advanced technologies often requires extensive renovations, which can lead to prolonged service disruptions. Furthermore, although smart systems reduce much of the manual labor, specialized knowledge and training for staff are still necessary to optimize the use of the smart technology.

### **Discussion Questions**

1. How do smart pool systems help in reducing water and energy consumption for hotels?
2. In what ways can smart pool systems enhance the safety and quality of pool water compared to traditional manual methods?
3. How can hotels facilitate a smooth transition from legacy systems to smart, eco-friendly systems while minimizing service disruption?
4. What role do guests play in supporting or demanding sustainable pool practices?
5. What advancements in smart pool technology can we anticipate in the next five to ten years, and how might they further enhance sustainability and efficiency?

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### **Keywords**

- Hotel
- Pool Technology
- Smart Pool System
- Property Management
- Sustainability
- Water and energy efficiency

## 从奢华到责任：智能技术驱动下的酒店泳池演进



Source: Pixabay (2017)

### 背景

由于其高耗水和高耗能，游泳池历来被视为昂贵且不环保的设施。然而，近期的创新已使泳池变得更高效率、更可持续，彰显了酒店对负责任旅游的承诺（Hospitality Technology,2025）。本案例研究将探讨智能环保泳池如何成为酒店新的身份象征。

通过集成水表、传感器和软件，智能泳池系统使酒店能够实时监测水位、温度和能耗等变量。这为管理者提供了可行的洞见，以最大限度地减少过度的水和能源消耗（Fluidra,2024）。此外，这些系统可以检测异常使用模式，并提醒管理者注意潜在的泄漏，从而显著降低服务中断的风险和维护成本（Hotel Technology News,2024a）。因此，智能泳池系统促进了资源的高效利用，同时为酒店节省了成本。

传统上，泳池维护由具备足够水化学知识、了解过滤系统和合规规程的酒店员工手动进行。然而，智能泳池系统可以通过自动化，以更理想、更高效的方式帮助控制水质并维护安全标准（Hotel Technology News,2024b）。例如，许多酒店现在采用智能加药技术，自动向泳池注入氯絮凝剂等化学品，以保持最佳pH值，为游泳者维持安全健康的环境（Smart Water Magazine,2022）。

除了引入智能系统管理泳池外，酒店也在寻求更环保的替代方案。例如，一些酒店使用可持续材料，如回收玻璃砖和无毒密封剂来建造泳池（Hospitality Technology,2025）。同样，植物和生物过滤器也被用来取代含氯化学品以控制水质（Hospitality Technology,2025）。

## 挑战

尽管近期的创新使泳池变得更高效和可持续，但在智能技术和可持续材料方面的初期投资可能相当可观，特别是对于那些在传统系统上投入巨大的现有泳池。因此，实施这些先进技术通常需要进行大规模的翻新，这可能导致长时间的服务中断。此外，尽管智能系统减少了许多体力劳动，但员工仍需要专业知识和培训来优化智能技术的使用。

## 讨论问题

1. 智能泳池系统如何帮助酒店减少水和能源消耗？
2. 与传统的人工方法相比，智能泳池系统在哪些方面可以提升泳池水的安全性和质量？
3. 酒店应如何促进从传统系统向智能环保系统的平稳过渡，同时最大限度地减少服务中断？
4. 客人在支持或要求可持续的泳池实践中扮演什么角色？
5. 在未来五到十年内，我们可以预期智能泳池技术有哪些进展？它们将如何进一步提升可持续性和效率？

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## 关键词

- 酒店
- 泳池技术
- 智能泳池系统
- 物业（财产）管理
- 可持续发展
- 水与能源效率



## 從奢華到責任：智能技術驅動下的酒店泳池演進



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通過整合水錶、感測器和軟體，智能泳池系統使酒店能夠即時監測水位、溫度和能耗等變數。這為管理者提供了可行的洞見，以最大限度地減少過度的水和能源消耗（Fluidra, 2024）。此外，這些系統可以檢測異常使用模式，並提醒管理者注意潛在的洩漏，從而顯著降低服務中斷的風險和維護成本（Hotel Technology News, 2024a）。因此，智能泳池系統促進了資源的高效利用，同時為酒店節省了成本。

傳統上，泳池維護由具備足夠水化學知識、了解過濾系統和合規規程的酒店員工手動進行。然而，智能泳池系統可以通過自動化，以更理想、更高效的方式幫助控制水質並維護安全標準（Hotel Technology News, 2024b）。例如，許多酒店現在採用智能加藥技術，自動向泳池注入氯絮凝劑等化學品，以保持最佳 pH 值，為游泳者維持安全健康的環境（Smart Water Magazine, 2022）。

除了引入智能系統管理泳池外，酒店也在尋求更環保的替代方案。例如，一些酒店使用永續材料，如回收玻璃磚和無毒密封劑來建造泳池（Hospitality Technology, 2025）。同樣，植物和生物過濾器也被用來取代含氯化學品以控制水質（Hospitality Technology, 2025）。

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儘管近期的創新使泳池變得更高效和永續，但在智能技術和永續材料方面的初期投資可能相當可觀，特別是對於那些在傳統系統上投入巨大的現有泳池。因此，實施這些先進技術通常需要進行大規模的翻新，這可能導致長時間的服務中斷。此外，儘管智能系統減少了許多體力勞動，但員工仍需要專業知識和培訓來優化智能技術的使用。

## **討論問題**

1. 智能泳池系統如何幫助酒店減少水和能源消耗？
2. 與傳統的人工方法相比，智能泳池系統在哪些方面可以提升泳池水的安全性和質量？
3. 酒店應如何促進從傳統系統向智能環保系統的平穩過渡，同時最大限度地減少服務中斷？
4. 客人在支持或要求永續的泳池實踐中扮演什麼角色？
5. 在未來五到十年內，我們可以預期智能泳池技術有哪些進展？它們將如何進一步提升永續性和效率？

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- 泳池技術
- 智能泳池系統
- 物業（財產）管理
- 永續發展
- 水與能源效率