

Smart museums: Technologies to digitize cultural spaces

Why is it necessary to digitise a cultural space?

Museums increasingly need to operate with real data, automation, and more efficient infrastructures.

At a time when cultural spaces are looking to reinvent themselves, the smart museum emerges as a necessary response to the challenges of the 21st century. Digitalisation is no longer an option, it is a competitive advantage.



At Telefónica Tech, we drive the transformation of cultural spaces with solutions based on Connectivity and IoT and AI & Data technologies, which help preserve heritage, enhance the visitor experience, improve energy efficiency, and optimise management and accessibility.

Analogue museum vs Digitalised museum

Unstable environmental conditions

Risk to preservation



Preventive conservation

Constant monitoring of critical microclimates

Uncontrolled visitor flows

Operational overload



Operational management

Capacity control, flows, data-driven staff assignment

High energy consumption

Misaligned budget



Sustainability

Optimised consumption with automated reports for grants and subsidies

Lack of visitor behaviour insights

Generic visitor experience



Visitor experience

Adaptive content on screens and signage

Reactive maintenance

Downtime, repeated errors



Automation of repetitive tasks

Smart rules for climate, access, and energy



Security and control

Integration of video, access, and alarms with traceability

Tangible benefits of digitalisation

Digitising a museum not only transforms its infrastructure, but also the day-to-day work of every team. From management to visitor services, conservation or tech staff, everyone experiences practical, measurable, and sustainable benefits:

Measurable and strategic profitability

Centralised operational control

Smart preventive conservation

Experiences adapted to diverse audiences

Simple and secure integration

Sustainability with documented ROI

What technological solutions power a smart museum?



IoT sensors/devices



AI & Data



IoT connectivity



Cloud



Gateways/routers



Ciberseguridad



Management platforms



Interoperability

Building Management System (BMS)

Central platform for managing building systems (climate, energy, security, access).

Indoor insights

System that provides real-time information on visitor flows, occupancy, behaviour, and profiling.

Dynamic marketing

Signage and connected screen system that displays content based on context.

The Brain

Platform that securely integrates and coordinates all IoT solutions from a single AI-enabled interface in real time.

Experiential marketing

Solution to create immersive, participatory, and adaptive experiences through audiovisual and XR technologies.

Cultural centres that embrace smart solutions today not only improve efficiency, but they also gain resilience and stay relevant and sustainable.

Why Telefónica Tech?

- + 50.000 points of sale
- + 20 years deploying digital transformation solutions

- + 90 countries with our services
- + 100 digital transformation projects in 2023
- + 500 clients
- + €150 million invested over the last three years