

# Communicating with Care: Ethical Tech and Inclusive Outreach in Science Centre Surat

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## SCIENCE CENTRE SURAT, INDIA

- established in 2009.
- At the time of inauguration there were only Fun Science Gallery, Digital Planetarium and Museum.
- Digital Planetarium had Digistar 3 System which was the latest technology at that time.

# Introduction



# Science Centre Surat and Its Digital Evolution



As the time passed, New galleries were developed.

Science Centre Surat consists of different galleries like:

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**Fun Science Gallery – 2009**

**Diamond Gallery – 2013**

**3D Theatre = 2014**

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**Power of Play Gallery – 2016**

**Entering Space Gallery – 2020**

**Astronomy through ages gallery – 2020**

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**“Khoj Museum” – 2022**

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Since its inception, the Science Centre Surat has evolved from traditional display-based communication to adopting a hybrid approach integrating digital technologies.

# Science Centre Surat and Its Digital Evolution



There is always a hybrid approach of integrating digital technologies with human-centered design and community needs.

Every galleries is a combination of digital technologies with content having linguistic, cultural, and cognitive diversity.

The Centre's mission is not merely to display science, but to make it relatable, responsible, and reachable for everyone.



# The Shift Toward Ethical and Inclusive Digital Communication

## Digital Transformation in Museums & Science Centres:

Rapid global shift toward **digital experiences** and **personalized engagement**.

**New opportunities** to tailor content for diverse audiences.

**Emerging ethical concerns** include:

- Algorithmic bias and lack of transparency
- Data privacy and security issues
- Spread of misinformation
- Unequal access to digital resources

There is a need for **responsible and inclusive** digital strategies.



## Accessibility:

Ensuring that all visitors—regardless of age, language, or background—can engage meaningfully.



## Transparency and Trust:

Safeguarding the accuracy and integrity of digital content.?



## Community Relevance:

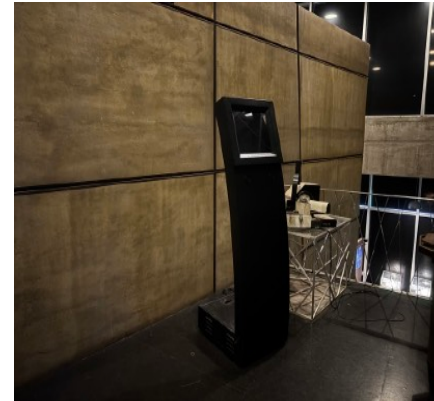
Designing content informed by local culture, language, and educational needs.

Science Centre Surat's strategy emphasizes "**communication with care**", integrating digital technologies through the lens of ethics and inclusion. Its approach revolves around above three guiding principles

# Technological development in science centre surat

## Science Centre in initial phase:

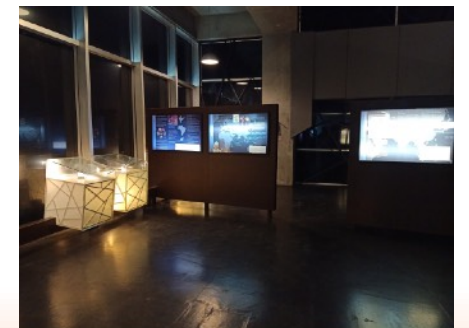
- Not much complex technologies were used.
- There were few digital interactive exhibits in Fun science Gallery.
- But the technology Digistar 3 used in Digital Planetarium was quite advance at that time.
- Digital Kiosks were displayed in the museum for public to get information about museum objects.



# Technological development in science centre surat

## Science Centre in next phase: Diamond Gallery –

- As Surat is also known as the “Diamond City” of India, a Diamond Gallery was developed in 2013.
- The sequence of eight (8) Audio-Visual Rooms are there.
- There is a storyline which is narrated by a digital character called “Hira Kaka” (Diamond uncle).
- He explains the story of Diamonds from its mining to polishing and it’s Physical characteristics throughout all the AV Rooms.
- The local Character of “Hira Kaka” has become famous among local people because they can correlate themselves with him.
- It is also popular among children and youngsters.
- So the complex content is delivered using technology and community centric approach.



# Technological Development in Science centre surat

## Science Centre in next phase: Power of Play Gallery -

- Power of Play Gallery is made for children between age group of 3 to 12 years.
- There are interactive exhibits with simulation software where children can learn by themselves having fun also.
- Interactive exhibits and simulation software made this gallery very popular amongst visitors under 12 years.

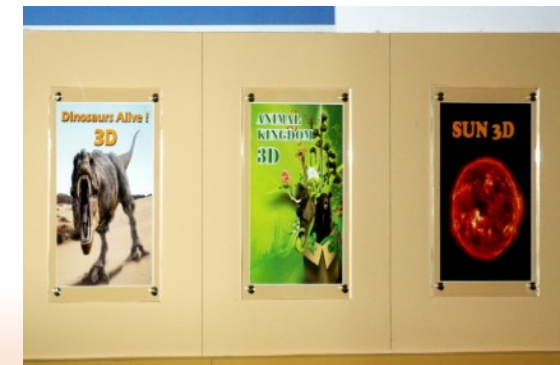




# Technological Development in Science centre surat

## Science Centre in next phase: 3D Theatre-

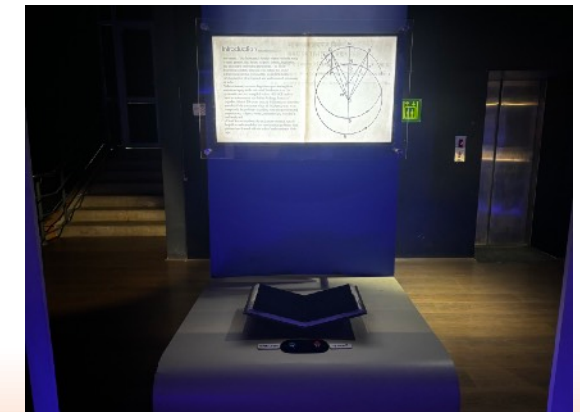
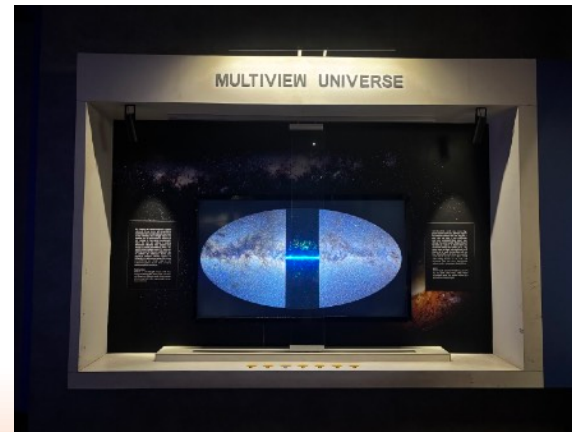
- It was developed in 2016 having just 37 seating capacity.
- With the passive 3D glasses, Visitors can get 20 minutes of immersive experience with different informative subjects like Dianasours, Climate Change, 3D Sun, etc.



# Technological Development in Science centre surat

## Science Centre in current phase: Astronomy Gallery & Entering into Space Gallery-

- It was developed in 2020.
- There are many Digital exhibits displayed in these galleries.



# Technological Development in Science centre surat

**Science Centre in upcoming phase:  
Up gradation of Digital Planetarium and development of  
Textile Gallery’ and ‘Polar Science Gallery”**

- Upgradation from Digistar 3 to Digistar 7 system.
- It is a latest technology in the field of Digital Planetarium.





# Communicating with Care: Ethical Tech and Inclusive Outreach in Science Centre Surat

**This presentation shows that the Science Centre Surat integrates ethical technology and inclusive communication strategies in its outreach and exhibitions, by implementing digital technologies to enhance engagement without compromising human values such as equity, privacy and cultural sensitivity.**

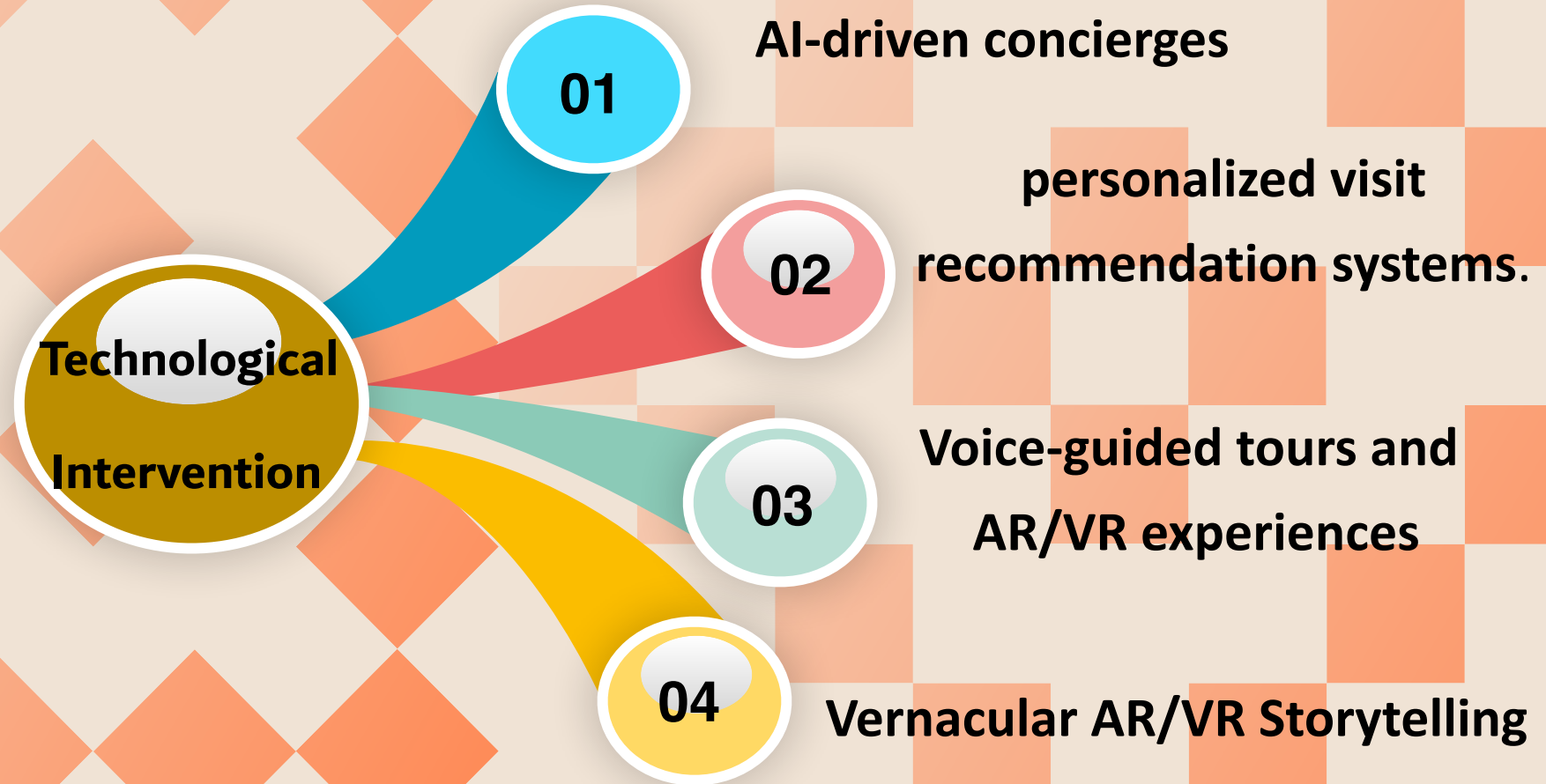


# Communicating with Care: Ethical Tech and Inclusive Outreach in Science Centre Surat

## Addressing Misinformation in Science Communication

- Growing threat of misinformation demands proactive strategies.
- Leverage AI-supported moderation tools to enhance content accuracy.
- Provide training for educators to ensure ethical and transparent communication.
- Align emerging technologies with human-centered design and community needs.
- Position Science Centres as models of ethical and inclusive communication in the digital era.

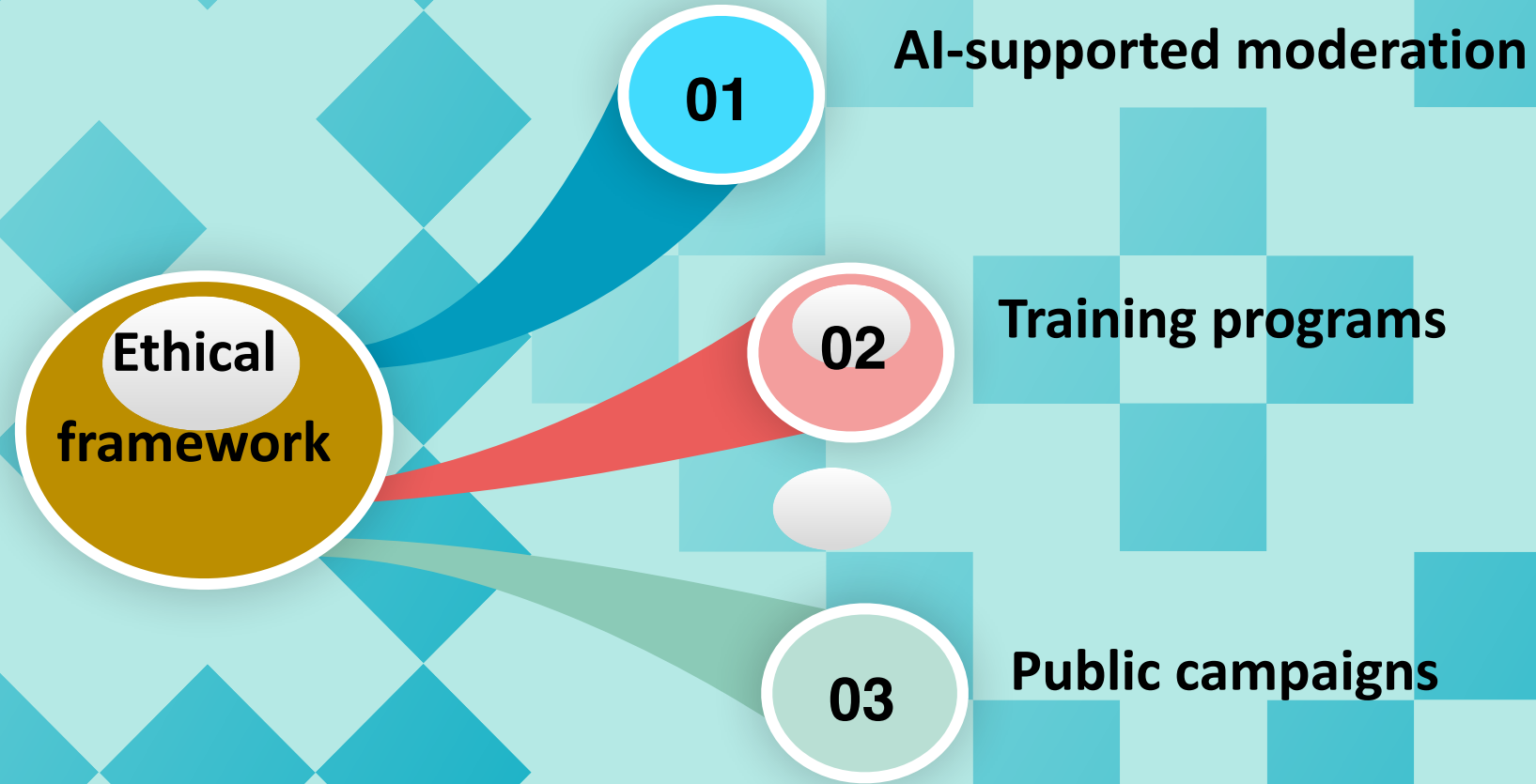
# Technological Interventions for Inclusive Engagement



# Data-Informed Outreach and Community Feedback



# Addressing Misinformation and Ethical AI Practices





# Digital Planetarium: A Platform for Responsible Innovation

**Digital Planetarium: A Model of Responsible Innovation**  
Showcasing innovation through immersive astronomical experiences.

Functions as both a **pedagogical** and **ethical** platform.

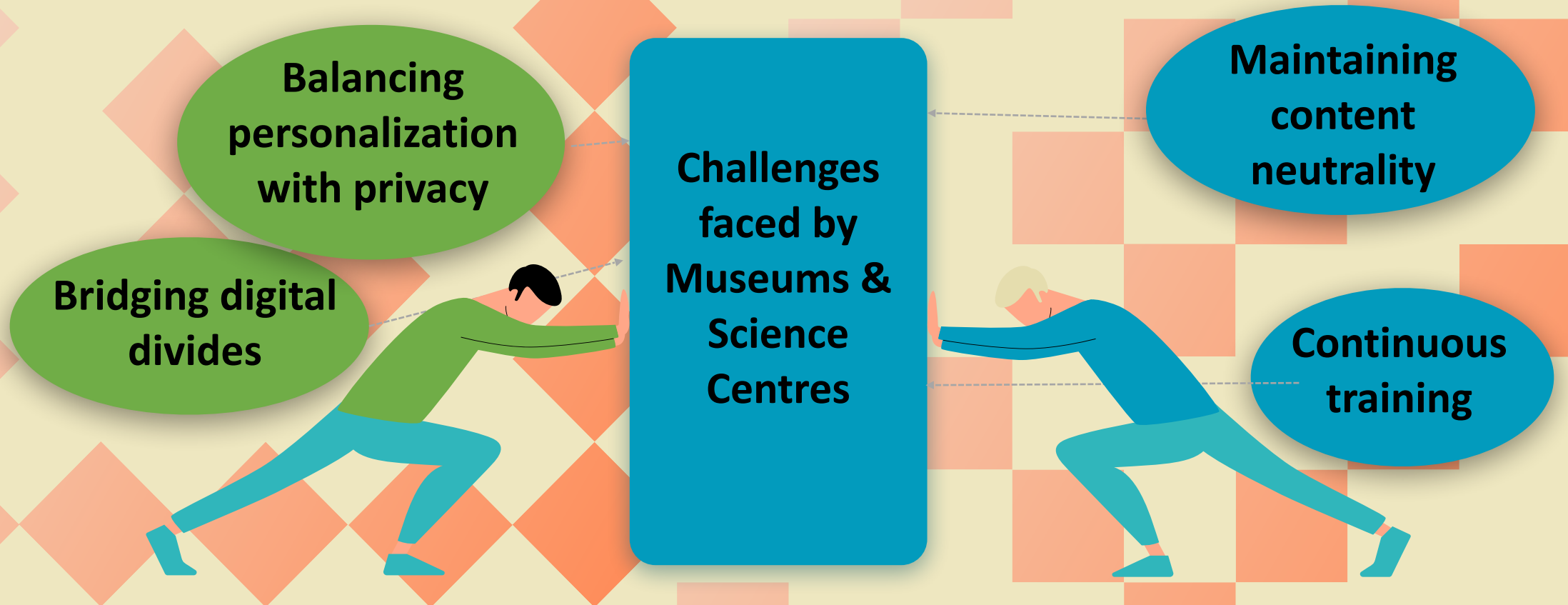
## Key Features:

- **Real-time celestial simulations** using verified scientific data.
- **AI-assisted narration** tailored to visitor demographics and languages.
- **Content moderation systems** to prevent misinformation and ensure accuracy.
- Positions the planetarium as a **technological marvel** and a **model for responsible science communication**.



# Challenges and Lessons Learned

challenges underscore the need for ongoing institutional learning and cross-sector collaboration among technologists, educators, and social scientists.



The future of science communication depends not only on *how **fast*** institutions adopt technology, but *how **thoughtfully** they integrate it* into human experience.

# THANK YOU

20-11

Proposal Type