Audience Measurement
in the digital era

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BAM!

Introduction

Audience Measurement (AM, from now on) is a multifaceted theme that has gained increasing importance in current museum studies. It encompasses the process of collecting, analysing, and interpreting data related to visitors and their interactions with a museum's exhibits, programs, and facilities. The advent of new technologies and digital tools has expanded opportunities related to AM for museums and professionals. However, this expansion has also brought about increased complexity, requiring the management of more elements, monitoring of new visitor touchpoints, study of new meanings and literacy, and a deeper understanding of a whole new dimension.

The NEMO Working Group Digital Transformation supports European museums to fully tap the potential that digitalisation holds for museums by identifying new processes, tasks and challenges. Since the WG decided to focus on digitalization and audiences, it has recognised Audience Measurement in the digital era as a crucial theme to explore in order to raise awareness for this topic in the European museum community.

Given the complexity and multi-layered nature of AM, the Working Group organised a workshop under the leadership of the Italian cultural management consultancy BAM! Strategie Culturali. The aim of the workshop was to provide basic information on AM and to identify relevant topics and knowledge areas for further exploration and development, contributing to the support of museum development. Therefore, the workshop was organised with a focus on two main objectives.

Objective 1: Understanding the Context - This objective aims to establish a starting point and create a shared foundation regarding audience measurement in the digital era.

Objective 2: Deciding What's Next - This objective is centred on defining and selecting relevant themes and areas of knowledge related to Audience Measurement (AM) for further exploration and development, with the goal of contributing to and supporting the development of museums.

This report presents considerations and basics on AM and bundles essential questions that are relevant when dealing with this topic.

Expectations in the area of Audience Measurement

As a basis for engaging with AM, BAM! Strategie Culturali conducted a survey among the WG members. The aim was to identify the expectations, interests, and knowledge related to Audience Measurement. In the survey, four 'reading keys,' each accompanied by subtopics for analysing Audience Measurement, were proposed. Participants were asked to prioritize these reading keys by voting for the two most relevant subtopics in their opinion. Simultaneously, they were asked to share any significant experiences they had related to one or more of the presented subtopics.

During the first part of the workshop session, BAM! delivered a concise theoretical framework to the WG Members. Participants were provided with insights, input, models for interpretation, reading keys, suggestions, and perspectives. Rather than attempting to cover the entire spectrum of knowledge on Audience Measurement (AM), the team aimed to stimulate and spark thoughtful reflections among the participants. The goal was to establish a shared foundation, literacy, and vocabulary to facilitate the subsequent discussion, considering the complexity and multifaceted nature of AM.

The approach used to address the main topics was grounded in a mixture of various disciplines: economics, management, marketing, sociology, arts, psychology, informatics, and design. After the brief introduction, Audience Measurement was explored through **four primary reading keys and subtopics**, representing a combination of four perspectives used to analyse the main topic from different angles and gain a deeper understanding of it:

1) **Data management**
- Data culture in the museum sector - Why it is important.
- Strategy and data driven approach: Dealing with complexity and decision making.

2) **The digital audience**
- Who is the audience nowadays? Visitors, users and (digital) communities
- Understanding behaviours, preferences and experiences.

3) **Digital communication and engagement**
- Measuring audience engagement: An online-offline integrated approach.

- Metrics, KPIs, conversions - What matters in culture?

4) Data infrastructures and instruments
- Tools, methodologies and technologies (CRM, ERP, audience tracking systems in the museum...).

Consequently, participants logically deconstructed AM into smaller themes, akin to building blocks rooted in the actual needs of museums. They then adopted a vision and perspective to address the issues and challenges at hand.

The main threads emerged have been prioritised through a voting system based on three main paradigms:

- **Coherency**: How much do you think working on this need or issue aligns with NEMO's mission and the WG's objectives?
- **Relevance**: How relevant do you think it is to work on this need or issue? How much impact do you think it will have on the museum community?
- **Desirability**: How much would you like to work on this need? How much do you find it interesting and challenging?

Theoretical framework

The following paragraph presents a synthesis of the theoretical framework, the provided concepts, and, notably, the reading keys and topics proposed to address Audience Measurement (AM). This section's goal offers valuable insights and inputs, essentially serving as a logical compass to navigate the complex landscape of AM.

Concepts and topics provided

Audience measurement falls within the broader realm of **visitor studies**. When delving into visitor studies, we encounter <u>semantic ambiguity</u>, involving terms that may imply distinct approaches to the subject. In our exploration, we often encounter various terms such as *visitor studies, audience research, audience measurement, and monitoring*. Each term carries a slightly different connotation. Given that the starting point is establishing common vocabularies, it's crucial to remain mindful of these distinctions.

- **Measurement**: Is a specific action of data acquisition that involves the determination and description of a phenomenon or phenomena.
- **Monitoring**: Is an ongoing process that involves the continuous and systematic observation of a phenome-non or phenomena.
- **Research/study**: The creation of new knowledge and/or the use of existing knowledge in a new and creative way to generate new concepts, methodologies and understandings (source: Western Sydney University).

Diverse disciplines concur to frame visitor studies. Each brings different techniques and tools as well as different questions and perspectives:

- **Economics and management:** Willingness to spend, Return on Investments (ROI), value perception, habits, the market...

- **Sociology, arts and psychology:** Learning process, impacts, mission achievement...

- **Informatics and design:** New tools, usability and UX, new models of interaction, emergence of technologies...

In order to gain a deeper understanding of the various meanings that have evolved over time, a brief look at the history of visitor research is helpful.

XXth century

● Observations of the physical endeavour - museum fatigue

● The visitor's learning process

● The audience composition (emergence of demographic segmentation)

● The relation between the visitor and the space (servicescape)

● The experience (satisfaction, expectations, motivations)

XXIst century

● The demand - potential visitors and the barriers

● New models of interaction and engagement

● ...

At the same time, the development of the web, users and interactions within digital communities play an essential role. The stages of web evolution and their defining features, spanning from the 1990s to the present day, shall be outlined emphasising that the current environment is constantly evolving (as seen in the overview to the right).

Two interconnected pathways were developed in recognition of the rapid technological advancements and the emergence of the digital realm, which have offered museums, researchers, and scholars new tools and opportunities. However, they have also shifted the **paradigm of interaction** between individuals and their environment, as well as between museums and their visitors.

These interactions are of significant importance because they represent touchpoints with visitors and users, serving as strategic moments for gathering data and information.

Web 1.0 "read only"
INFORMATION WEB 1994-2000
● Few content creators for a large group of readers
● No interaction nor participation
● Unidirectional communication flow

Web 2.0 "read and write"
SOCIAL WEB 2000-2010
● Interaction, sharing and participation > digital communities
● Blogs and social media
● Websites start to monitor users' behaviour > the importance of data

Web 3.0 "read, write and execute"
SEMANTIC WEB 2010-2020
● The web is a database > web and social analytics
● The advent of Artificial Intelligence
● The world is fully integrated online-offline, almost fully converged > mobile first
● Co-creation and prosumers
● Personalisation (messages, tools etc.)

Towards web 4.0
INTELLIGENT WEB 2020-2030
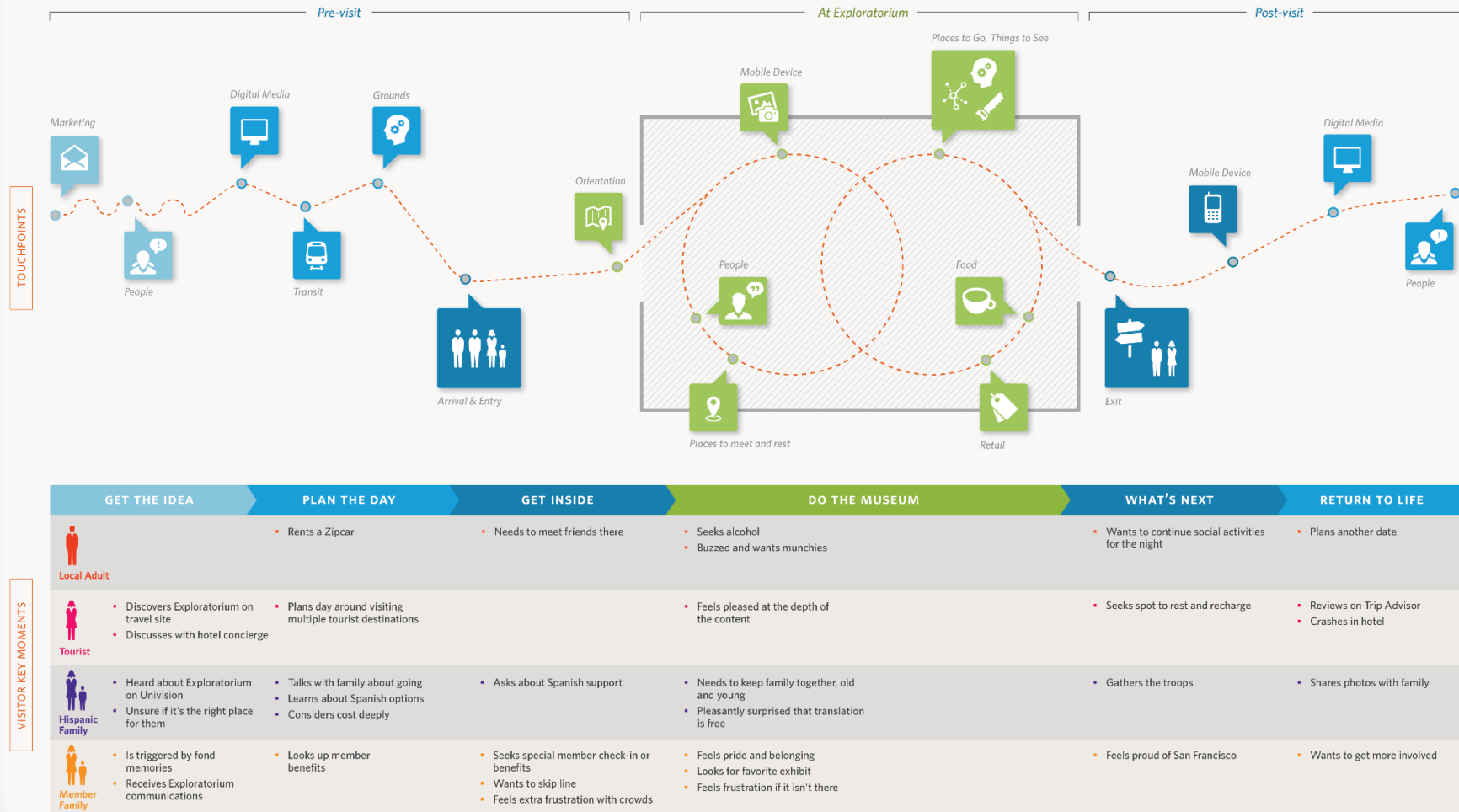● Self learning, self-organising

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To gain a better understanding of these interactions that occur both online and offline between museums and their visitors, two conceptual tools should be considered:

1. The Visitor Journey
2. Moments of Truth

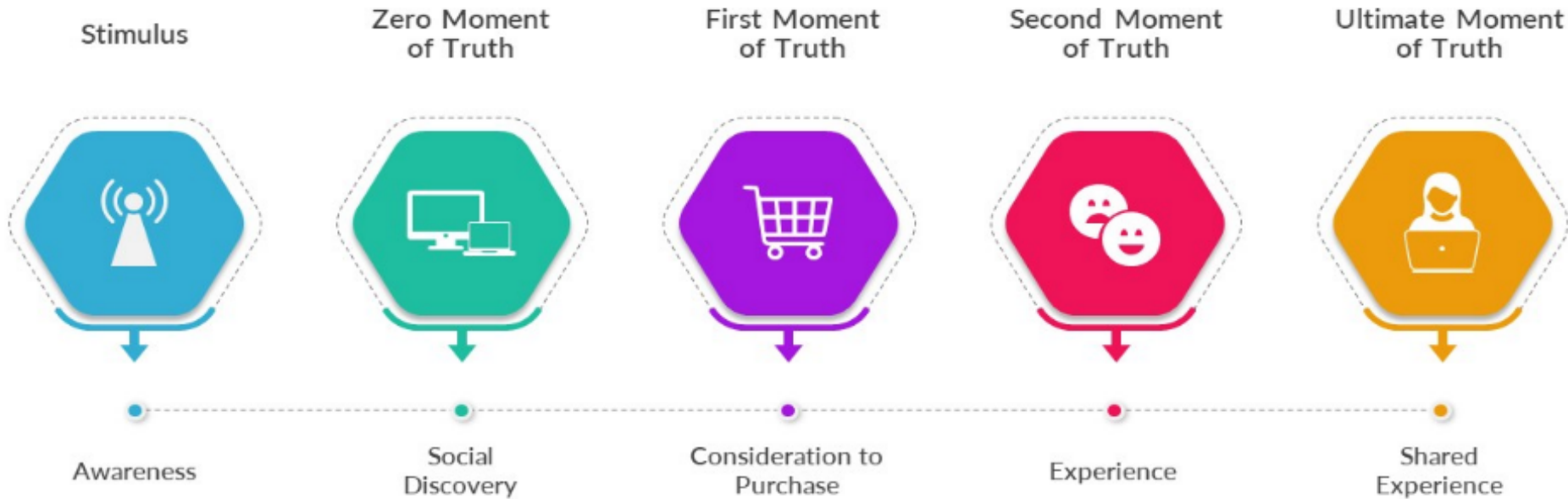The concept of the '**Visitor Journey**' is derived from marketing studies, specifically the 'Customer Journey.' The Visitor Journey comprises the stages and touchpoints that a visitor encounters during their interaction with a museum, product, or service, from the initial awareness to the conclusion of the experience. By its inherent nature, the Visitor Journey is multi-dimensional and non-linear.

The Visitor Journey
Where do you support the paths of different visitors?

TOUCHPOINTS

Marketing

Digital Media

Grounds

Mobile Device

Places to Go, Things to See

Orientation

People

Food

Digital Media

Mobile Device

People

Transit

People

Arrival & Entry

Places to meet and rest

Retail

Exit

VISITOR KEY MOMENTS

	GET THE IDEA	PLAN THE DAY	GET INSIDE	DO THE MUSEUM	WHAT'S NEXT	RETURN TO LIFE
Local Adult		• Rents a Zipcar	• Needs to meet friends there	• Seeks alcohol • Buzzed and wants munchies	• Wants to continue social activities for the night	• Plans another date
Tourist	• Discovers Exploratorium on travel site • Discusses with hotel concierge	• Plans day around visiting multiple tourist destinations		• Feels pleased at the depth of the content	• Seeks spot to rest and recharge	• Reviews on Trip Advisor • Crashes in hotel
Hispanic Family	• Heard about Exploratorium on Univision • Unsure if it's the right place for them	• Talks with family about going • Learns about Spanish options • Considers cost deeply	• Asks about Spanish support	• Needs to keep family together, old and young • Pleasantly surprised that translation is free	• Gathers the troops	• Shares photos with family
Member Family	• Is triggered by fond memories • Receives Exploratorium communications	• Looks up member benefits	• Seeks special member check-in or benefits • Wants to skip line • Feels extra frustration with crowds	• Feels pride and belonging • Looks for favorite exhibit • Feels frustration if it isn't there	• Feels proud of San Francisco	• Wants to get more involved

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An example taken from Website - Museu Nacional D'Art de Catalunya (Exploratorium, UX Map. Source: www.creativeblog.com/netmag/expert-guide-experience-mapping-71412427.)

Stimulus — Awareness
Zero Moment of Truth — Social Discovery
First Moment of Truth — Consideration to Purchase
Second Moment of Truth — Experience
Ultimate Moment of Truth — Shared Experience

Moments of Truth (MoT) represent the points of interaction between the organisation and potential clients or users. These were originally introduced by Richard Normann in the 1980s and have seen widespread use over time. With the emergence of the new digital dimension, in 2011, Google introduced the concept of the 'Zero Moment of Truth,' referring to the moment in the decision-making process when a client researches a product (either a service or a good in marketing terms) before making a purchase. Scholars, consultants, and professionals have further developed the concept of the moment of truth, emphasising the importance of understanding and studying the interactions or touchpoints between an organisation and its clients.

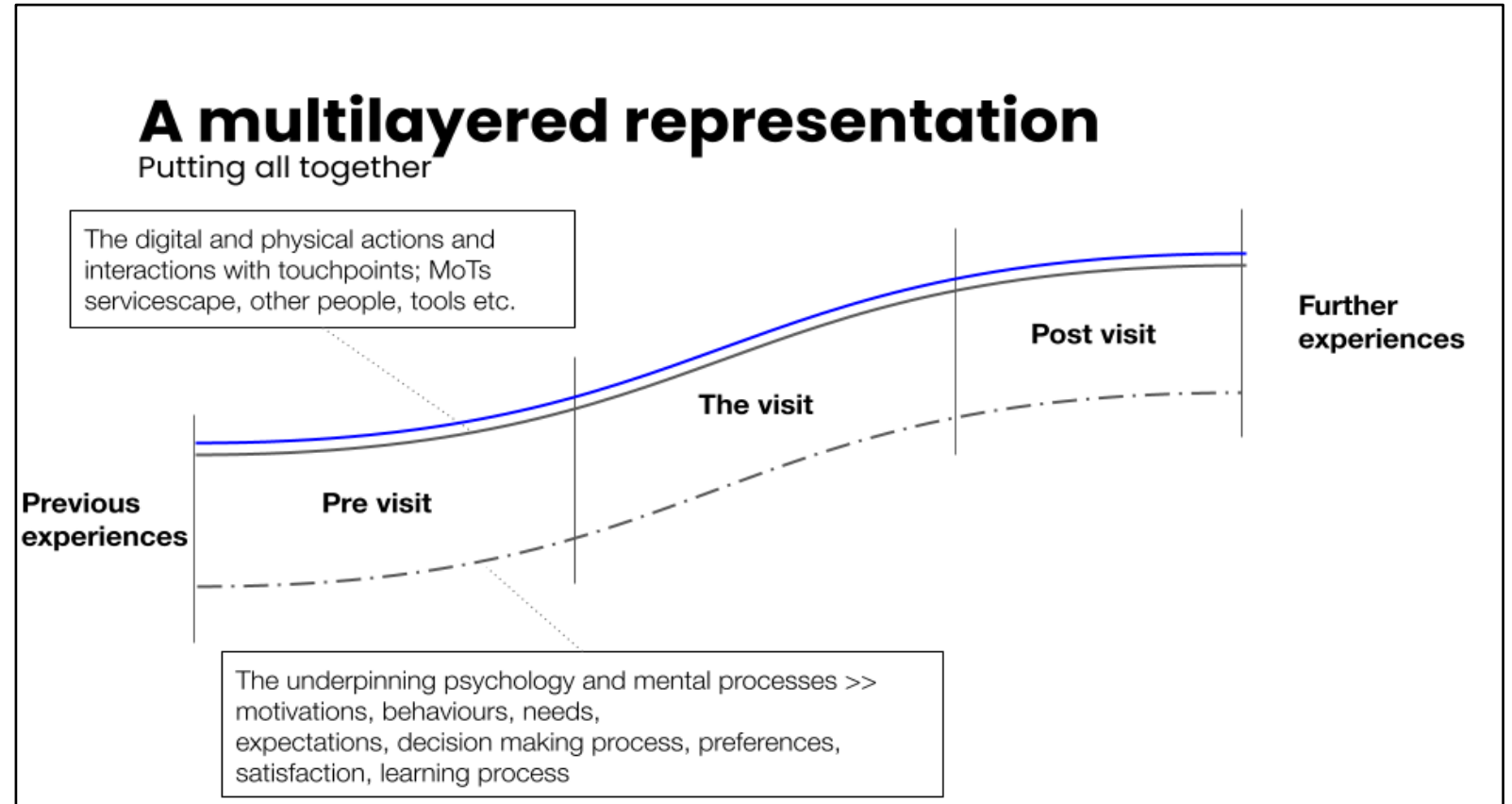These terms can be adapted from a museum perspective:

- **ZMOT**: When people research online for an exhibit or are made aware of a museum.

- **FMOT**: Is the evaluation and consideration among the different solutions.

- **SMOT**: When the person becomes a (physical or digital) visitor and experience the exhibition/ product/service.

- **TMOT**: When the person talks about the experience with other people (WoM, Online Reviews etc.

Moments of truth are seen solely through a marketing perspective (i.e. purchase). Is it possible for museum professionals to reuse them to study the interactions that fulfil the museum's mission?

The model illustrates the three intertwined dimensions, that concur to shape the whole experience (journey) of a visitor:

- The physical actions and interactions.
- The digital actions and interactions.
- The underpinning psychological and mental processes.

A multilayered representation
Putting all together

The digital and physical actions and interactions with touchpoints; MoTs servicescape, other people, tools etc.

Previous experiences

Pre visit

The visit

Post visit

Further experiences

The underpinning psychology and mental processes >> motivations, behaviours, needs, expectations, decision making process, preferences, satisfaction, learning process

Schematic representation of the concepts previously presented trying to put all together into a unique model. Source: Elaboration by BAM! Strategie Culturali

Reading keys

For a better understanding and to contextualise the audience measurement, four primary topics can be listed, referred to as reading keys. These topics also help to look at Audience Measurement from different angles and integrated perspectives. In doing so, the topics do not encompass the entirety of the theme but offer insights and a starting point for further discussion.

Data management

Sub-topics
- Data culture in the museum sector: Why it is important.
- Strategy and data driven approach: Dealing with complexity and decision making.

Data management encompasses the processes of collecting, storing, organising, and maintaining data to ensure its accuracy, security, and accessibility for various organisational purposes. While it has been widely debated that data has become a fundamental element for fostering organisational development, **not all organisations** possess a clear and coherent vision of the strategic role data plays in today's landscape. Therefore, it is essential to assist museums in keeping pace with these changes and emphasise the importance of cultivating a data culture. This entails understanding how data can help museums achieve their cultural, social, and economic objectives. However, data alone is not a universal solution, and implementing a data-driven approach should be accompanied by a coherent strategy and the

necessary literacy at the organisational level. Audience Measurement and visitor studies are integral components of data management and should be integrated into an **overarching data strategy** to yield optimal results.

In fact, through measurement and monitoring organisations can reduce uncertainty by:
- Taking informed decisions understanding patterns and changes.
- Understanding audiences' behaviours, satisfactions, expectations.
- Refining the offer and the interactions enhancing the opportunity to achieve the museum's mission.

Often the museum sector has these characteristics:
- Few strong policies on the promotion of a data-driven approach.

- Few observatories.
- No systematic approach > different methodologies lead to different results.

The digital audience

Sub-topics
- Who is the audience nowadays? – Visitors, users and (digital) communities.
- Understanding behaviours, preferences and experiences.

In the museum sector, a 'digital audience' refers to individuals or groups who engage with a museum's content, collections, or programs via digital platforms and technologies. Some users may access a museum's offering online but may have never physically visited

the museum. This raises the question: given the museum's cultural and educational mission, **should we consider these visitors as part of the audience?**

Audiences are **continually evolving** due to a variety of factors, including societal changes, cultural dynamics, shifts in the economy, and the emergence of disruptive technologies. Because this concept is constantly changing, it can be challenging to define the contemporary audience as a whole. Nonetheless, it is crucial to monitor these changes and for each museum to understand its visitors, allowing for a structured and strategic approach. As mentioned, each museum possesses its unique composition of audiences, which may differ from other museums. Furthermore, the rise of digital technology has introduced new forms of interaction among individuals and between individuals and organisations (such as the concept of *'Prosumers'* and co-creation processes).

In this context, a person can fulfil multiple roles in their interaction with a museum, including visitor, user, and a member of a community (including digital communities). Consequently, it is vital to comprehend the various audiences and the ways they engage with organisations and other visitors, both digitally and physically. Understanding and studying audiences is, of course, essential to establish a coherent approach to Audience Measurement. Major behavioural traits can provide valuable insights into defining a museum's digital audience and how to engage with them.

Digital communication and engagement

Sub-topics

- Measuring audience engagement: An online-offline integrated approach
- Metrics, KPIs, conversions: What matters in culture?

When discussing audience measurement, it is impossible to overlook the vast amount of data generated by online interactions occurring through various communication channels and platforms. To establish stronger connections with audiences, it has become essential to integrate both online and offline approaches into the communication systems and strategies of museums. However, the challenge lies in effectively measuring this integrated approach.

Digital communication pertains to the use of digital technologies and channels for conveying information, engaging with audiences, and facilitating interaction and dialogue between museums and their visitors or the broader public. It encompasses an array of strategies and tools designed to effectively communicate a museum's mission, exhibitions, collections, programs, and educational resources through digital means. Integrating the online dimension with traditional offline communication channels has become increasingly important for organisations, allowing them to engage

In general we are asked to move from a "digital communication" approach to a "digital engagement" framework

How shall we **monitor**, **measure**, **gather data** *about each step of this chain? And when does a receiver of the digital communication become an* **audience member**?

Elaboration by BAM! Strategie Culturali, Picture from Jasper Visser / Jim Richardson, "DIGITAL ENGAGEMENT IN CULTURE, HERITAGE AND THE ARTS", 2013, CC-BY-SA.

diverse audiences at different times and through various touchpoints.

To gain a comprehensive understanding of digital interactions between audiences and museums, a set of metrics and Key Performance Indicators (KPIs) can be employed to measure and comprehend user/visitor engagement. Traditional metrics include:

- Website analytics and metrics (e.g., new and returning audiences).
- Social media insights (e.g., reach, comments, and interactions).

What is often missing, however, is an integrated approach that connects online data with offline data (such as ticket counters, visitor experiences, and museum activities). This approach allows for a more comprehensive study of the audience, recognising the existence of a digital audience, a physical audience, and an audience that seamlessly integrates both dimensions in their interactions with a museum's offerings.

Data infrastructures and instruments

- Tools, methodologies and technologies (CRM, ERP, audience tracking systems in the museum...).

To conclude the analysis of Audience Measurement, it's essential to consider the significance of tools, instruments, methodologies, and data infrastructure that contribute to shaping this field. Numerous tools are available for understanding audiences, including:

- Tracking systems (wifi)
- Sensors
- IoT (Internet of Things)
- RFID (Radio-Frequency Identification)
- NFC (Near Field Communication)
- Beacon technology
- CRM (Customer Relationship Management) and ERP (Enterprise Resource Planning)
- Web Analytics

- Social Analytics
- Online Reputation Analysis (e.g., Tripadvisor)
- Surveys and questionnaires
- Interviews
- Focus groups
- Direct observation
- Usability tests
- And more...

AM in museums

If we look at the topic of AM from the perspective of museums, museum-specific needs and challenges arise. With the help of the workshop, the WG has identified the following five topics as particularly relevant.

1) **Digital audience:** How to count them and how to make them count?

One essential thread identified revolves around understanding the digital audience - how to quantify their presence and maximize their impact. It's imperative to determine whether digital and physical visits complement each other, represent alternatives, or encompass both aspects.

However, it's worth noting that digital audiences are not consistently counted by museum funders and institutions. Typically, only visitors to physical locations are tallied. There's a lack of collective consensus on what constitutes a digital audience, and a joint methodology is notably absent. Online and offline audiences are often evaluated independently, and digital audiences are not valued in the same manner.

2) **Substantial aspects**: Uncovering digital audience motivations, needs, decision-making, and expectations.

This includes understanding what drives individuals to engage online and whether an online presence translates into physical visits. Therefore, it's crucial to acknowledge and cater to the distinct needs of various types of visitors, such as students, researchers, and more.

3) **Strategy:** Implementing a comprehensive approach.

This encompasses the development of strategies to address the diverse behaviours of digital audiences. Furthermore, digital offerings are

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frequently underutilised or remain unknown beyond the central and traditional museum audience. The absence of strategies to attract new and diverse audiences is a prevailing concern.

4) **Data and metrics:** Is it possible to set standards?

A key concern revolves around the choice of data and metrics. Is it feasible to establish standardised criteria? Currently, our measurements focus on outputs rather than outcomes - numbers rather than the experience or impact. There's a pressing need for new or

alternative Key Performance Indicators (KPIs). We don't know enough about (digital) museum visitors. Demographic data collection is challenging - but necessary?

Another challenge is the lack of standardized data collection practices, preventing benchmarking and comparative learning. Moreover there is no consistent benchmarking on a sectoral or at least cross-institutional level beyond "counting heads".

5) **Tools and methodologies:** The need for consistency.

A pressing issue is the lack of consistent benchmarking regarding information and communications technology tools such as CRMs and ERPs, which could potentially facilitate this endeavour. A crucial question arises: are there evaluation tools available to effectively combine insights from online and offline audiences?

Furthermore, the challenge lies in determining what should be measured or researched, as well as acquiring the necessary know-how regarding which tools and methods are suitable for these purposes. This involves reconciling the utilisation of various evaluation tools, such as surveys on multimedia guides, web resource analytics (including website and virtual museum tours), and ad hoc surveys (e.g., brief visitor interviews). A common obstacle is the widespread lack of data skills and a generalised absence of interest in this domain.

In a prioritisation session at the end of the workshop, the NEMO Working Group Digital Transformation decided on two primary needs as follows. The WG will dedicate their future work to explore those topics and disseminate the findings to the European museum community in their publications and different learning formats.

1. To develop a more profound understanding of the motivations, needs, decision-making processes, and expectations of digital audiences.

2. To determine how and when to count digital audiences affectively and make their engagement meaningful.

Endnotes

1) Ludovico Solima: Visitatore, cliente, utilizzatore: nuovi profili di domanda museale e nuove traiettorie di ricerca, 2008, https://www.researchgate.net/publipublic/231422223_Visitatore_clientc_utilizzatuti_nuovi_profili_di_domadom_museale_e_nuove_traiettorie_di_ricerca.

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