DigMus

EMPOWERING MUSEUM PROFESSIONALS WITH DIGITAL SKILLS

Financed by The Nordic Council of Ministers

TOOLKIT

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CONTENTS

UPPSALA UNIVERSITET

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NATIONAL HERITAGE BOARD

Faculty of Communication

LÄNSMUSEET GÄVLEBORG

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Ved Stranden 18
DK-1061 Copenhagen K
Phone: +45 33 96 02 00
E-mail: nmr@norden.org

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Authored by: Nadzeya Charapan (introduction, section 2 and section 3), Madli Parn (section 1), Agu Leinfeld (section 1.3).
Additional contributions by: Mirjam Rääbis, Vytautas Starikovičius, Donatas Snarskis, Indrė Jovaišaitė-Blaževičienė, Hans Lindholm Öjmyr, Cassandra Bergman, Jonas Westlund, Marge Rahu, Tõnis Veltman.
Style editor and proofreader: Tara Godwin
Design and Printing: Katsiaryna Plaksa
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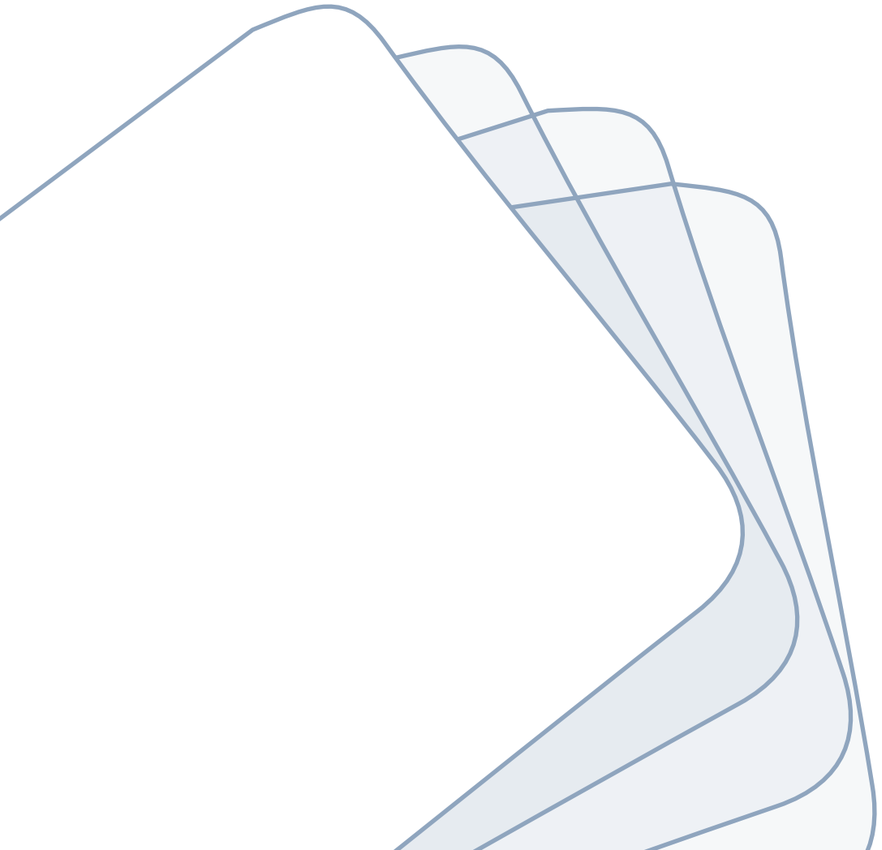
INTRODUCTION



IIn the aftermath of the COVID-19 lockdown, museums and other cultural institutions were forced to rapidly increase their digital presence and re-consider their daily operations in an emerging digital environment.

The present toolkit is an outcome of a series of webinars and continuous discussions of the DigMus core group, comprising museum professionals, scholars, and representatives of governmental institutions managing cultural heritage and digitisation from Sweden, Estonia, and Lithuania. It intends to support museum professionals with a more nuanced understanding of the possibilities and implications of digital technologies to facilitate more sustainable digital transformation in the museum sector.

The choice of themes is motivated by the findings from the mapping survey, conducted among the 96 museum professionals in spring 2021 across Sweden, Estonia, and Lithuania. The first section introduces a digital maturity model and a worksheet that allows one to benchmark the current status of organisational digital maturity and ideate on the further steps and specific actions for its advancement. The second section puts its attention on data-driven museum management. It unveils the main six stages in the data-driven decision-making process for museum professionals. Lastly, the third section is devoted to digital communication and outlines the key elements of digital communication planning and implementation. The toolkit is also designed for several layers of application, based on the competence levels of museum specialists. The digital maturity model presents the scope and complexity of the strategic planning field and requires a top-bottom approach, as well as a broad view of the organisation as a whole. The data-driven museum management is intended to be used on an operational level and unveils different stages of data-driven decision-making processes in a museum. It could be used by both museum administration and heads of the departments or middle managers. Meanwhile, the last section put its scope on the initial level of digital communication and specifically targeted museum personnel working with communication.

Conscious of different approaches to digitisation in situ and constant technological change, this toolkit does not aim to provide a one-size-fits-all solution and strict guidance but instead sought to clarify key terms and highlight crucial aspects of the museum.

For a more nuanced understanding of the themes and materials of this toolkit we suggest looking into the video recordings from three webinars[1] that provide a broader perspective on the aforementioned issues.

Nadzeya Charapan
DigMus Principal Investigator

[1] *Video recordings from webinars are available at the website: https://digmus.eu/*

SECTION 1.
Digital Maturity

1.1. Digital Maturity of an Organisation

Digital maturity is an organisational ability to use, manage, apply, and understand appliance of digital technologies in operations and management, contextually (fits for unique settings and needs), holistic (involves vision, leadership, process, culture, and people), and purposefully (is aligned to the organisational mission).

1.2. Glossary

Audience - museum visitors, collection users, and other interested parties.

Augmented reality (AR) - an interactive experience that combines the real world and computer-generated content. It involves the integration of visual, auditory, or other sensory information into the real world to enhance the experience.

Blockchain - a type of shared database that stores data in blocks that are then linked together via cryptography; the goal is to allow digital information to be recorded and distributed, but not edited.

Citizen science - scientific research performed with participation from the public audiences.

Cognitive load - the amount of information that working memory can hold at one time.

Data cube - a data structure that stores data in more than 2 dimensions and enables data to be modelled and viewed in multiple dimensions.

Data mining - the process of extracting and discovering patterns in large data sets.

Data Value Chain (DVC) - a mechanism that defines a set of repeatable processes to extract data's value step by step throughout its entire lifecycle from raw data to veritable insight.

Digital twin - digital (virtual) copy of a real-world physical object, system, or process.

GreenTech - technology that is considered environmentally friendly.

HORECA - an abbreviation of HOtel/REstaurant/CAfe, refers to food services and hotel industries.

IoT - "Internet of Things" refers to physical objects (or groups of such objects) with sensors, processing ability, software, and other technologies that connect and exchange data with other devices and systems over the internet or other communications networks.

ITIL - set of best practices for managing IT services and improving IT support and service levels.

Maturity - the capacity of growth potential that indicates the richness of operational processes as well as their continued application in current and upcoming projects.

Maturity model - a multilayered model that describes typical patterns in organisational development.

Model - informative representation of an object, person, or system.

Persona - a fictional character that communicates the primary characteristics of a group of users/ visitors, identified and selected as a key target through the use of segmentation data, across the museum in a usable and effective manner.

SLA - "Service Level Agreement", an agreement between a service provider and a client.

Social crediting - awarding prolific and meaningful contributors with higher status within the system or some other form of non-monetary reward.

Sustainable dialogue - a developed dialogue to both engage and sustain the diversity of misunderstanding, understanding, and meaning that can help manage conflicts of complexity.

1.3. Digital Maturity Model: Description and Instructions

The present Digital Maturity Model was initially developed by the National Heritage Board of Estonia. It is based on structured interviews and analyses of museums' current strategies. The interviews were conducted in April 2022 via e-mail and consisted of 25 questions asking Estonian museum professionals to discuss and map the current and future status of museums. Participants included a department head from the Estonian Open Air Museum (~140 employees), the Director of the Estonian Sea Museum (~100), the Director of Kalamaja Museum (~5), and museum and cultural heritage specialists from the Ministry of Culture and the National Heritage Board.

The ***goal*** of the Digital Maturity Model is to be a holistic and integrated inspiration model for museum development, to help museum management set targets for the near and distant future, and develop an action plan to achieve those targets. Its purpose is to spark discussion between management and employees and to inspire organisational digital maturity within a museum. The Digital Maturity Model can be used to map the current state of the museum, develop the museum's overall digital strategy and museum's digital activities, track the existing digital activities to monitor and benchmark the progress, and overall run a digitally mature museum.

By running a digitally mature museum we understand the following:

- To engage more contacts by profiling current and future audiences and measuring their experience in a wider societal context
- To build collections by encouraging and enabling collective building through supportive frameworks and materials
- To build a "digital twin" model by digitising the museum's tangible and intangible heritage and creating constantly up-to-date digital twins of that heritage
- To build meaningful experience programs tailored to specific groups and support intuitive learning, enjoyment, reflection, and knowledge sharing through various presentation technologies
- To actively engage with communities and collaborative networks
- To build networks and workspaces on different platforms to encourage sustainable purpose-searching dialogue between museum professionals
- To constantly find new and sustainable museum operating models

Dimensions and Maturity Levels

The model is divided into *five main dimensions* with several sub-dimensions:

- Strategy encompasses three areas of museum strategy: overall strategy, operational strategy (what is done and how), and impact
- Audience delves into museums' approach to visitors and clients and how to keep existing clients and acquire new ones
- Heritage integrates the key operations with tangible and intangible heritage, including collection, preservation, accessibility, data modelling, scientific research, and sense-making.
- Technology focuses on recognising, implementing, and acquiring new and suitable digital technological solutions
- Processes cover key institutional procedures and approaches concerning data, management, operations, and technology

The model's *dimensions* are divided into four *levels of maturity*:

- Initial - no strategies or digital solutions
- Structured - digital technologies are recognised as part of the operation. There are some structures and standards for applying digital elements
- Advanced - main processes have optimised implementation and descriptions, standardised tasks are mostly performed automatically, and constant review and re-evaluation of the digital elements
- Sustainable Innovation - digital technologies are cohesively and seamlessly integrated into all museum areas of operation and are driving sustainable changes and innovation

How to use the Digital Maturity Model?

Depending on the need and goal, it is possible to perform evaluation of all five dimensions (including, Strategy, Audience, Heritage, Technology, and Processes) or select one or several dimensions for analysis. For evaluation and brainstorming, we advise using this model together with worksheet #1 (included below).

1. Review the model as a whole and make sure you understand it

2. Identify the dimensions that are present in your institution and think about the managers or personnel responsible for each dimension

3. Discuss these dimensions with the identified managers or staff;

4. Use worksheet #1 to score the level of digital maturity in the dimensions and develop further activities to reach the next level

5. For convenience, we suggest using a 3-point scale to provide more nuanced measurement within each level of digital maturity

6. Complete the sections "when", "what" and "who" in the worksheet

7. Set a period of time after which you revisit and review the model, your museum's goals, and your actual performance

8. Share the data with relevant managers and other stakeholders

9. Repeat the whole process (we advise reviewing the digital maturity and progress annually or every three years

Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation
·STRATEGY·	Strategic planning	No specific strategy. Actions are based only on state regulations and museum statute.	Museum operations are performed in line with externally pre-established indicators. There is an isolated understanding of organisation's digital goals on the personal level but it is not uniform and not written down in strategic documents.	A strategy is formed based on the understanding of visitors. Terms are negotiated with primary stakeholders based on those strategic goals. The goals of digital activities and digitisation are set and defined in the strategic documents.	Strategy is formed in collaboration with a wide network. Experiments measuring experience are carried out constantly to discover new opportunities.
	Operations management	Ad hoc. No specified principles	The tradition of what the museum outsources and performs has evolved.	There is a formulated policy of acquisition. Partners, expert networks, and client groups actively participate in the preparation of the design of the operations. Service design practices are used.	Capabilities are assessed. Resilience, environment, and long-term continuity are considered on policy and every-day operation level. Sustainability by design.
	Impact	No metrics. No measuring is implemented.	The main goal for the whole organisation is to measure the agreed-upon terms with stakeholders. Some internal metrics are added.	Created value, persona experiences and new revenue streams are measured. Business-type metrics are implemented.	The impact of sense-making, digital twin model validity and meaning creation are measured.

Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation
·AUDIENCE·	Audience development	Only visitors are seen as the target audience. No targeting in communication; “one size fits all” approach.	Some client groups are recognised based on research or on the agreement with stakeholders. The understanding of visitors, collection users and other parties (that benefit from the activities of the museum) is formulated into client groups. Audiences are defined. Operational activities are adjusted based on those groups and on the definition of audience.	Personas are created based on actively engaged visitors and target groups. Personas are used in collection building and in exhibition presentations. Measurement indicators are based on/linked with those personas. Service approach to different audiences is defined and implemented. The cognitive load of defined personas is managed effectively.	The understanding of non-active personas is present (future audiences, machine-linked actors, future generations, etc.). Audience behaviour is automatically measured. New profiles and group potential can be found from collected data of exhibit visits, audience behaviour and focused interest.
	Marketing and communications	No targeted marketing or communications.	Targeted communications and client acquisition are provided via at least one channel.	Targeted communications are provided via multiple channels based on client groups and personas. Knowledge of emerging relevant new channels is among the capabilities. Digital channels are consciously selected and used effectively.	Marketing and communications are audited. User experience is measured in the background (without disturbing the visitors during the visit) and is used as input for decision making. Omni-channel marketing is implemented.
	Visitor studies and experience design	Visitor studies are sporadic and based solely on the socio-demographic statistics and type of provided services. Visitor experience and feedback are not collected and evaluated. There is no measurable goal to attract additional audiences.	Visitor studies are performed from time to time, as a project-based initiative. In addition to socio-demographic statistics, visitor feedback is collected and measured at the end of visit by means of surveys.	Visitor studies are performed regularly, during the different stages of the visit and has some form of interactive feedback (for example, interactive panels, etc). In addition to feedback, experiences of personas are evaluated.	Visitor and experience studies are performed regularly and data are embedded for development of new services and programmes. Agile methodologies are used for visitor evaluation. Digital technologies and AI are used for visitor studies and experience design.
	Learning and education	Learning and educational programmes are performed onsite using physical collections. The indicators and targets for learning outcomes are not defined.	There are some project-based learning activities or exhibitions. May have some specific initiatives (e.g., special expositions for schools, for the elderly etc.). Educational and learning outcomes of those projects are measured.	There is a recognised pattern on creating good learning experiences. Learning outcomes of new programmes and services are measured.	The learning experience of persona groups is constantly enhanced based on feedback. Joy of learning is measured.

Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation
.HERITAGE.	Sense-making	The purpose of collecting and exhibiting are not clearly defined. No sense-making goals are defined.	Goals are set for collecting or exhibiting (or for other similar initiatives) that include discovery of context and meaning.	Collections, exhibitions, and the purpose of the museum are defined. Sense-making is an integral part of all processes.	A sustainable purpose-searching dialogue with networks is built of different cultural environments and outside of specific areas (transdisciplinary enabled).
	Collection	Collections are stored based on existing museum practices (may not even be digital).	Standards are implemented on labelling (may be local), and some meaningful parts of the collections are digitally available. Digitisation of museum objects is an ongoing process. Museum objects are digitally labelled according to the international standards.	Advanced labelling is used based on international best practices. Some form of citizen science is starting to emerge and there may be some guidance policy for the museum or to the contributors. Standardised tasks are mostly performed automatically.	Collections are stored physically and have a digital twin copy. Data models connect the personas, collection items and programmes for visitors. Machine readable data and API are available. Ability to absorb additional data sources to the collections. System includes social crediting or similar motivation to contributors.
	Preservation	Physical collections may have some offline/local digital data.There are no continuous data on the condition of preserved collections.	Digital data are used to maintain the collection, and this can be accessed online. Preserving condition data is analogue, is not timely consistent and collected randomly. Some data about preservation are missing. Staff is responsible for a regular check-up of the condition.	Museum objects in collections have a corresponding digital twin. Data of physical and digital storage conditions are available in real-time with set alerts and corresponding procedures in place. Impact of change in the storage conditions is known.	There are highly consistent 3D models of museum objects. Changes in the condition of collections can be presented based on real-time monitoring data. There is a “plan B” for saving critical parts of collections and restoring digital collections. Those plans are (regularly) reviewed.
	Accessibility	Collections are accessible physically. No metadata available on items on collections. There are no metrics on the use of collections.	Some parts of collections can be accessed online or are available to some central system/database.	3D or other advanced layered models of collections can be browsed with relevant metadata through a web browser, or an app. Long-term accessibility is ensured.	Virtual exhibitions of meaningfully connected items are held that engage client groups to discover more about the collections.
	Scientific research	No scientific research. Some books of scientific value may be published, but effort is single and random.	Some articles are published. No scientific ambitions or goals are set. No initiatives are started by the museum; may contribute to the work of others when asked.	Scientific goals are set and measured, and active projects are started at the initiative of the museum. The museum leads or actively contributes to local and international joint research projects.	Scientific research has considerable international influence; it expands the understanding of human sense-making and is widely cited.
	Data modelling	There is no knowledge of the “digital twin” possibilities.	There is an understanding that data collected can be presented in a digitally composed timeline, in connection with geographical locations, and in 3D form. Some data storage standards emerge. There is still no unified model.	3D models are created consciously based on standards and are created as part of a greater ecosystem, incorporating time and geographical data. Digital twin approach is defined. Single finds are tied to the digital twin ecosystem. Standards for communities emerge.	Data storage models are chosen that can build meaningful journeys. Experiments of advancements in those digital twin enhancement models are carried out (e.g., 3D, smell, chemical composition, usage animation layers etc.). Existing models are constantly being used for data mining to gain new insight.

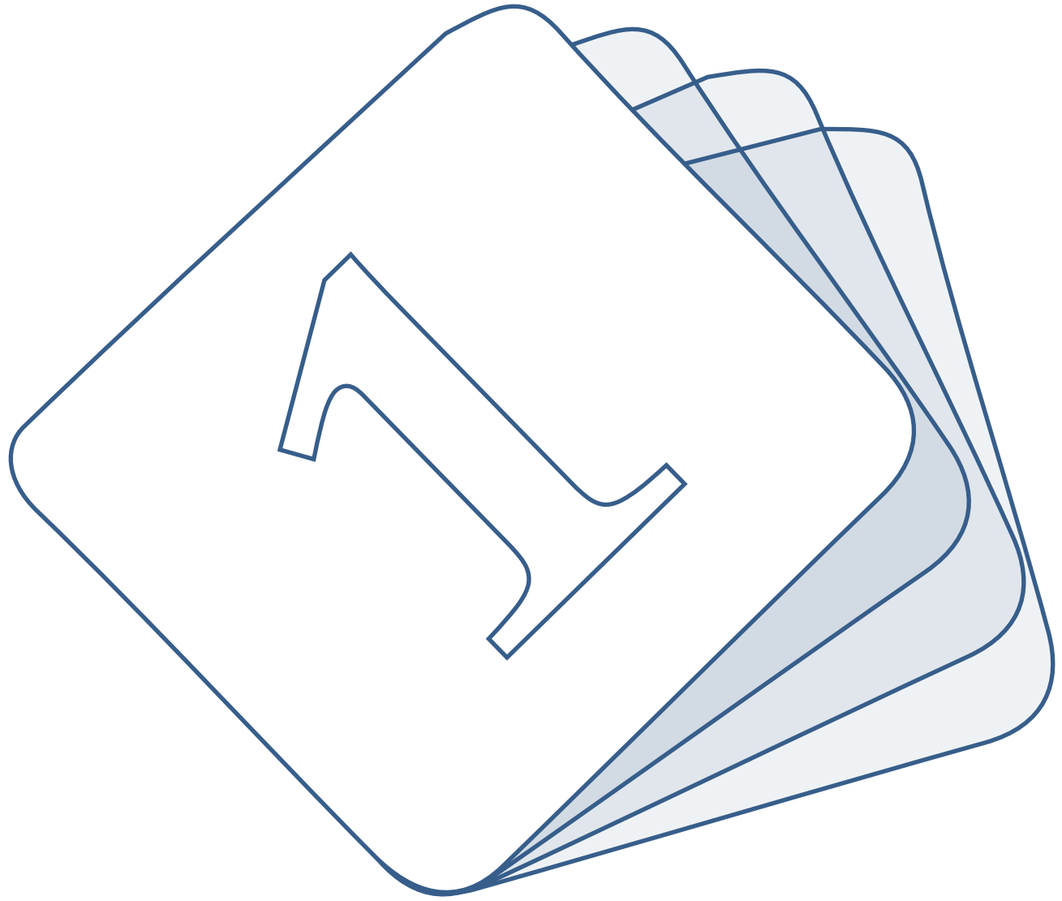
Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation
.TECHNOLOGY.	Appliance & product discovery	No search for new solutions. There is no budget for that. Random appearance of new technologies is based on outside initiatives (e.g., of temporary exhibitions).	Project-based testing of new technology. Some initiatives have new technological solutions on-site. Most innovations of appliances come and go with exhibitions. There are some permanent capabilities for display and communication (e.g., touchscreens, info-desks).	There is a described approach to areas that need technology & appliance advancement. It is based on target groups and business metrics needed to be reached. A strategy is agreed upon with partners and stakeholders for finding the best solution on the market with the help of partner networks.	New technologies and appliances are aligned with the purpose of the museum in detail. There are partners that propose relevant latest finds. APIs are used for independent testing to see how to fit the new appliances to the existing ecosystem.
	Frameworks	No frameworks of technological processes, data storage or for implementing equipment have been knowingly implemented.	IT services are recognised as part of the museum's operation. Implementation of new digital solutions has some standardised gateway events (quality checks, requirement fulfilment measurement etc.). There are some standards for describing data.	SLA-s are described. Standard practices for software and service development. ITIL lifecycle management and IT agile development processes are recognized and implemented. Enterprise architecture model is implemented. Data vocabularies are used. Data model and data roles are described.	Enterprise architecture model is linked with data science initiatives of the museum. Museum's purpose is related to human memory preservation in the AI era.
	Acquisition & knowledge import	No policies. Knowledge creation is implemented solely by museum employees.	There is a formulated policy on what to do yourself and what to outsource. Some partnerships have been established.	There are tech partners and competence networks for discovering and specifying the needs of the museum. Citizen science, voluntary organisations and individuals have been engaged in a sustainable way.	The network supporting acquisition has access to innovation. Knowledge is detailed to add it to the museum procurement documents.

Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation
PROCESSES	Data	Data-related roles are not described. There are no standards for data. Some local data may exist (e.g., collection items on a local Excel spreadsheet). Data are handled along with other things that need to be done.	Specific people are appointed for data-related roles. Data quality has some initially specified requirements that are regularly revised. Data are mainly about the museum's collection. Staff responsible for data management has no formal education in data management.	Data are collected on all processes. Data vocabularies are defined and used. Data quality requirements are published to contributing network members. Digital twin model creation is supported by a designed holistic data model of different dimensions.	Data cubes are used for new knowledge discoveries. Data scientists are analysing data to further optimise museum management strategies. Linked-data. Cooperation with international data standards creators to formulate industry best practices.
	Operations	Classical processes of storing, preserving, presenting. No IT or innovation-related processes are implemented.	Museum's main processes are written down in documentation available to the employees. Understanding of requirements categories and their practical use is implemented. Organisation understands the inclusion of IT skills in its processes.	Museum's main processes have been optimised and described. IT processes' and services are integrated into everyday operations. The use of canvases, patterns and models is common. Design thinking is driving process development.	Enterprise architecture model is implemented. Process design is influenced by the data value chain. Maturity models for specific areas are in use. Museum knowledge is used to create and contribute to industry best practices.
	Technology	No technology skill expectations are described or revealed in official documentation.	Some technology skill descriptions are found in job descriptions. Understanding of basic digital competencies.	Technology skill descriptions are linked with the organisational strategy and with known IT competence frameworks. IT related competences for non-IT jobs are recognised.	GreenTech, IoT, augmented reality, blockchain, and other relevant technologies are used in proper and efficient manner. There are test ground options and innovation transition models emerging in new tech.
	Management	Running as an everyday business. Keeping the lights on and updating data on collections. Management is based solely on public support and government financing. No resource and knowledge to seek additional sources of income.	Conformance with a wider set of regulations and museum standards is expected. Running as an NGO and passive demand-expectation management. There are additional sources of museum's income. Recognising the need for competence building.	Museum is run as an enterprise with strategy, value stream, evolving business models, client groups and a business network. Package deals with other members of the entertainment industry are implemented. (HORECA, education, tech, etc.). Capabilities of creating new revenue streams have evolved.	Although the museum is still managed as an enterprise, the purpose of the museum is set over a long period and is seen as human memory storage, capable of giving out meaningful and ordered input to AI-human coexistence. Capability building is implemented. Financing innovation.

1.4. WORKSHEET #1
Digital Maturity Checklist and Action Plan

The evaluation of organisational digital maturity requires a clear understanding of the current state-of-art and strategic planning of the resources and skills to gather, train and implement further steps. The goal of this worksheet is to map the results of the maturity evaluation and plan the further steps for change.

Together with a team, evaluate each component of the maturity model and discuss further the actions required for digital advancement, specifying **what** should be done, by **whom**, and **when**. Use the notes section for additional comments.



		Digital Maturity Mapping				Actions		
	Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation	WHAT?	WHO?	WHEN?
·STRATEGY·		Strategic planning	○	○	○	○			
		Operations management	○	○	○	○			
		Impact	○	○	○	○			

		Digital Maturity Mapping				Actions		
	Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation	WHAT?	WHO?	WHEN?
AUDIENCE		Audience development	○	○	○	○			
		Marketing and communications	○	○	○	○			
		Visitor studies and experience design	○	○	○	○			
		Learning and education	○	○	○	○			

Digital Maturity Mapping

Actions

Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation	WHAT?	WHO?	WHEN?
·HERITAGE·	Sense-making	○	○	○	○			
	Collection	○	○	○	○			
	Preservation	○	○	○	○			
	Accessibility	○	○	○	○			
	Scientific research	○	○	○	○			
	Data modelling	○	○	○	○			

		Digital Maturity Mapping				Actions		
Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation	WHAT?	WHO?	WHEN?
.TECHNOLOGY.	Appliance & product discovery	○	○	○	○			
	Frameworks	○	○	○	○			
	Acquisition & knowledge import	○	○	○	○			

		Digital Maturity Mapping				Actions		
	Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation	WHAT?	WHO?	WHEN?
.PROCESSES.	Data		○	○	○	○			
	Operations		○	○	○	○			
	Technology		○	○	○	○			
	Management		○	○	○	○			

1.5. CASE STUDY:
The Estonian Health Museum (Estonia)

The first case study aims to showcase how the digital maturity model was tested by the National Heritage Board (NHB) during the focus group and used by museum professionals from the Estonian Health Museum.

The Estonian Health Museum (EHM) is a museum that collects, exhibits and analyses heritage related to health and healthcare in Estonia. The collection encompasses around 20000 objects. The mission of the museum is to show the beauty, pain and wonder of being a human so that Estonians would be healthier and happier.[2] EHM holds regular educational programmes, keeps a blog, and runs a podcast on various health topics. In 2017 it received The European Museum of the Year Award for its permanent exhibition. Personnel-wise, the museum is run by a team of 20 people, divided into the following departments "Exhibitions and Collections", "Education and Services", "Marketing and Communications", and "Support Team", led by a director.

The focus group was conducted with the EHM's director and three heads of "Exhibitions and Collections", "Education and Services", and "Support Team" departments. The model was sent to the members of the focus group beforehand. During the focus group, the NHB representatives went through the model together with the museum representatives to provide more clarifications and answer all questions about the content and the overall procedure. The main questions were related to the contents of the "sustainable innovation" level, where technical language and digital competencies became more prevalent. After the introductory round, the participants of the focus group were invited to evaluate the digital maturity of the museum and develop ideas for organisational development over 5 years.

Since the participants were provided with a model only (not with a worksheet), for convenience of evaluation, the team decided to use a 5-point scale (1 - the lowest - 5 the highest) to accurately measure the existing level of digital maturity and apply different colours for the defining the current status and future target. Thus, the yellow colour was used to indicate the current level of development and the green colour was marked to define the level in future. The results of the evaluation are presented in Figure 1 below.

Overall, the Advanced level of organisational maturity appears concerning the "Strategy" and "Audience" dimensions. Other dimensions ("Heritage", "Technology", "Processes") fell mainly in the Structured level with an outlier in Data modelling (Initial level) and Sense-making and Managerial processes (Structured level). The participants of the focus group during the discussion set the priority to focus further on "Strategy" and "Audience" and in 5 years to reach the level of sustainable innovation, which is foregrounded by the mission and core value of the institution put on museum audiences. EHM decided that they should increase their focus on non-active personas and expand their strategic network. And although they already have some digital solutions to measure visits, there is room for improvement. In addition to that, a decision to enhance digital maturity concerning "Heritage", "Technology", and "Processes" (see Figure 1) was made. For "Heritage", the goals were to increase the accessibility to collections and promote its use for scientific research. For "Technology", EHM's most pressing concern was the lack of unified digital solutions specifically tailored to museums (e.g., an electronic point-of-sale system). Also, the level of several sub-dimensions (including "Data", "Framework", and "Management") were evaluated by the team as efficient enough for the current and future periods and no changes were suggested by the team.

[2] *https://tervisemuuseum.ee/en/, accessed online 2022-12-01*

Figure 1. Digital Maturity Mapping Results from the Estonian Health Museum.

Main dimension	Sub-dimension	Initial	Structured	Advanced	Sustainable innovation
STRAGEDY	Strategic planning			3	5
	Operations management			3	5
	Impact			2 2	
AUDIENCE	Audience			2	5
	Marketing & communications			4	5
	Engagement growth			4	5
	Experience design		4 5		
HERITAGE	Sense-making			3	5
	Collection		3 5		
	Preservation		3 5		
	Scientific researchvvvv		3 5		
	Data modelling	3 5			
TECHNOLOGY	Appliance & product discovery		3	1	
	Frameworks		3 3		
	Acquisition & knowledge import		3 3		
PROCESSES	Data		3 3		
	Operations		5	2	
	Technology		5 5		
	Management			3 3	

Source: Provided by the National Heritage Board..
NB. Some dimensions in the table differ from the final version of the digital maturity model.

What can we learn from this case study?

The measurement and mapping of the digital maturity of a museum is a creative and collaborative process that brings together representatives of top and middle management of a museum with a nuanced understanding of the operational process. This self-evaluation requires a critical approach to the current operations management, available resources as well a shared understanding of a museum's vision for the future. The rubrics of the Digital Maturity Model might serve as benchmarks for strategic planning and ideation about the development of organisational maturity. It is also important to emphasise that probably not all the segments of the museum's operations require (digital) transformation, which is why we suggest critically approaching digital technologies as one of many opportunities for organisational development.

LINKS AND FURTHER READINGS:

- Digital Culture Compass: Helping Improve Your Digital Activities. https://digitalculturecompass.org.uk/
- Culture24 - Digital Pathways for Museums. https://digitalpathways.weareculture24.org.uk/
- Price, K., & James, D. (2018). Structuring for digital success: A global survey of how museums and other cultural organizations resource, fund, and structure their digital teams and activity. *In Proceedings of museums and the web.*
- The Charity Digital Code of Practice. https://doit.life/charity-digital-code

SECTION 2.
Data-Driven Management

2.1. Data-Driven Museum

The recent turbulence associated with financial instability and shortage of funding following rapidly increased digitalisation in the aftermath of COVID-19 have significantly challenged the existing operating models and museum management. In order to sustain financially and comply with the public agenda, museums need to redesign their services and operations to be as effective, innovative, and relevant as possible.

Museums often focus on the data that they use to report on their KPIs, for example, visitor numbers, revenue, volume of provided services, exhibitions, and more. Consequently, data are commonly perceived as an indicator of efficiency to be reported to externally. However, data-driven decision making can be implemented into museums' operational processes to facilitate sustainability and efficiency in different operations. Given this context outlined, it has never been more important for museums to be able to harness and use data for decision making on both operational and strategic levels. Data-driven decision management is commonly defined as an approach that utilises facts, metrics, and data to guide strategic and operational decisions that align with organisational goals, objectives, and initiatives. According to Stubbing (2022), data-driven decision making allows museums to examine services to ensure they are effective, efficient, and relevant for diverse audiences. It also lets museums to identify successful practices which can be replicated, key areas for improvement, and define changing needs and trends in order to develop new services and strategies around them.

This section aims to introduce, step-by-step, key stages in data-driven decision making processes in museums to provide museum professionals with helpful insights and examples on their data journey. Thus, the material might serve as an essential source for diverse museum professionals who increasingly seek to develop and enact data-driven implementations.

2.2. Glossary

Data - a set of raw entities used as evidence of phenomena in the form of either figures, texts, symbols, descriptions, or mere observations of events or things with a potential to be analysed. In information management, data is used as a primary source utilised for analysis to generate information.

Data in Museum Management - a collection of unstructured details that are collected and collated into meaningful entities (information) to be utilised in for the purpose of management and decision making. The data is generated from the museum's operations, staff, audiences and stakeholders.

Data Life Cycle - a series of phases over the course of data's useful life. This cycle often consists of several stages, including planning, collecting, analysing, implementing, evaluating and sharing.

Digital Data - electronic representation of data in a format or language that machines can read and understand.

Information - data collated to derive meaningful inferences according to its contextual requirement.

Visualisation - a way to represent information (processed data) graphically, highlighting patterns and trends and helping a reader to achieve quick insights.

2.3. Data-Driven Decision Management Model: Description and Instructions

Figure 2 depicts the six main stages in the data-driven decision making process for museum professionals. The present model was inspired by the Data Life Cycle framework (data collection => data analysis => data visualisation).

Figure 2. Data-driven Decision Management Model

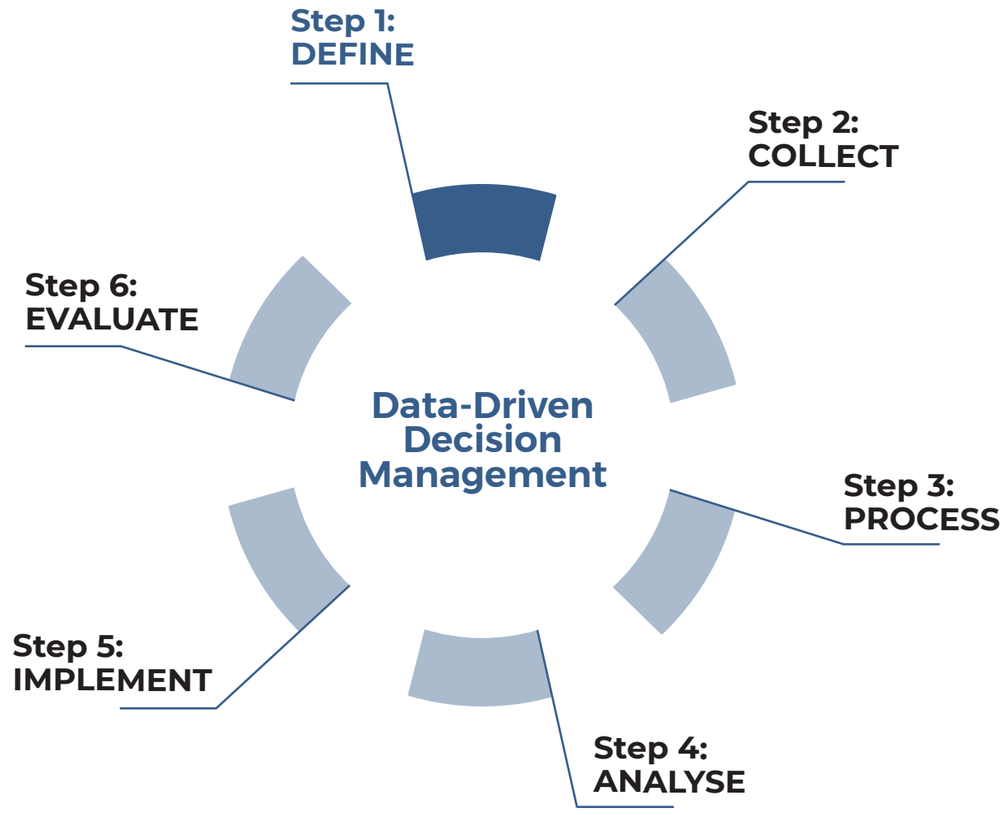


Figure 2.
Data-driven Decision Management Model

Step 1: DEFINE

Define data need, query and source – everything which is needed to make a decision

Step 2: COLLECT

Collect. Identify what data should be captured and the best means capturing it. Many museums take a broad approach to data collection, capturing as much data as possible from each interaction and storing it for potential use. Hence, it is always important to keep in mind what kind of data is critical for a specific purpose.

Step 3: PROCESS

Process and visualise. Map your data to allow for more detailed analysis by creating visualisations, overlaying different types of data, and making your data comparable.

Step 4: ANALYSE

Analyse. Scrutinise and draw conclusions from your data by identifying patterns and gaps, using context to understand the data, and reviewing your visualisations.

Step 5: IMPLEMENT

Implement. Act on your data – plan and execute actions based on your understanding of it after going through steps 1 to 4.

Step 6: EVALUATE

Evaluate. Review all the progress of the previous steps, looking at the data you have.

The model has a circular nature because the lessons learned and insights gleaned from stage 6 typically inform step 1 and identify what data will fill the gaps highlighted from step 6, and so the cycle continues. In this way, the final step of the process feeds back into the first. Overall, the model commits to creating a culture of using data continuously to shape a more efficient decision making in the museum sector.

The forthcoming worksheet # 2 entails the key steps as depicted in Figure 2 and unfolds the critical insights that should be taken into consideration while applying the data-driven approach in practice.

2.4. WORKSHEET #2
Data-Driven Decision Management: Checklist

The process of data-driven management requires a nuanced understanding of key steps of implementing, reviewing and embedding data for decisions on operational and strategic levels. The **goal** of this worksheet is to map the potential issues and challenges that arise in each of the steps of data-driven decision management from the defining data needs to collection, processing, analysing, implementing and evaluation of the results. Here are some questions to guide group discussions on a data journey. Discuss the questions and put your answers in the diagram below

Step 1: Define your data needs

The first step in the model allows you to identify why you need data, what data you need, and where you can get that data from.

- Why do you need these data?
- What is a data query (specific aspects enable you to address your data need)?
- What type of data is needed (qualitative, quantitative, digital, analogue, mixed)?

Step 2: Collect/Select

Informed by the data needs, the second step is to start planning some of the specifics about data collection processes or selection from the available data.

- What are data sources?
- What time frame (or period) do the data need to cover?
- How granular do the data need to be?
- What resources are required for data collection/selection processes?
- What are the museum processes to store and keep this data secure?
- What collection methods will be used?

Step 3: Process

Data processing can refer to various activities, including cleaning up, wrangling, compression and encryption. The main idea is to make data processed and harmonised.

- What is the process to clean up the data?
- How are data normalised and translated?
- How are data munged (raw data converted into a more usable format)?
- How are data stored?
- What are potential issues and risks?
- Has informed consent been gathered for data? Does it consist of any personal information?
- Does the museum comply with the legal data privacy requirements?

Step 4: Analyse

As soon as data are harmonised and processed, the next step is to conduct analysis. Data analysis refers to processes that attempt to glean meaningful insights from raw data, specifically, patterns, trends, anomalies. The following actions for visualisation and interpretation provides the opportunity to make sense of your data analysis. Visualisation makes it easier to quickly communicate your analysis to a wider audience both inside and outside of the museum. Beyond simply presenting the data, interpretation allows you to investigate it through the lens of your expertise and understanding. It may not only include a description or explanation of what the data show but, more importantly, what the implications may be.

- How are data analysed?
- What patterns and trends are revealed?
- Are there any abnormalities in data behaviour?
- What do the findings demonstrate in a broader context?
- What are the main conclusions?
- How will the findings be visualised?

Step 5: Implement

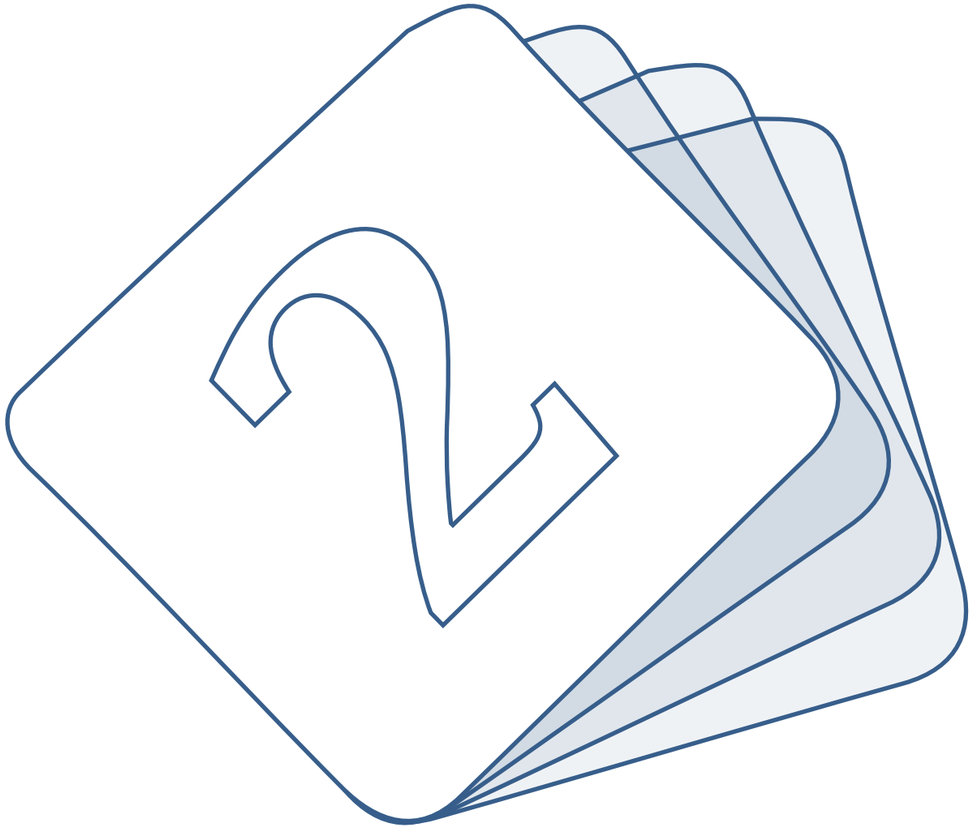
The next step focuses on how you can actually put the conclusions from the previous phase into action and ensure your data and findings are placed to facilitate data-driven decision making.

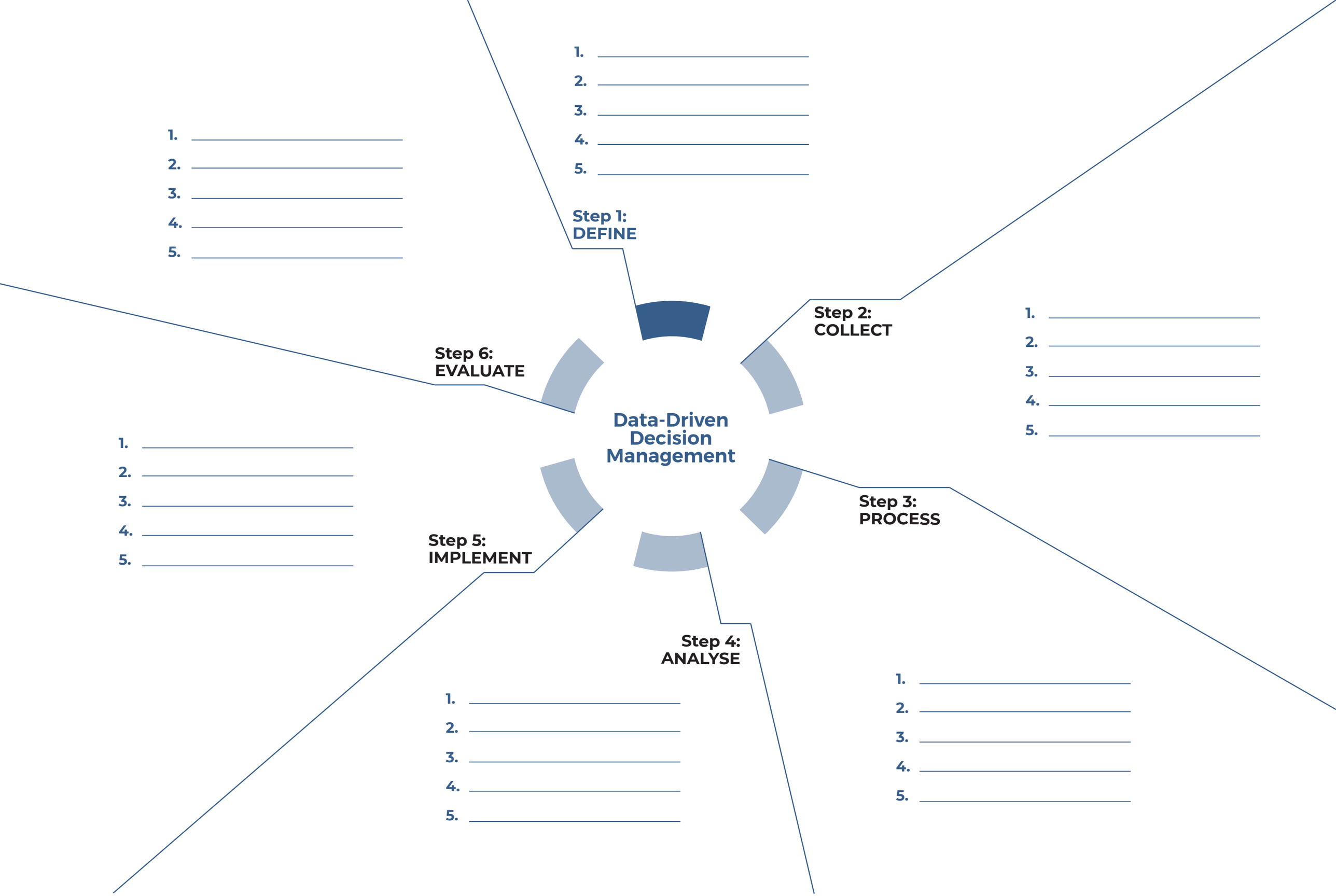
- How are data analysed?
- What patterns and trends are revealed?
- Are there any abnormalities in data behaviour?
- What do the findings demonstrate in a broader context?
- What are the main conclusions?
- How will the findings be visualised?

Step 6: Evaluate

The final step is to review and evaluate the implemented process of data-driven decision management to reveal the possible gaps and develop a more nuanced understanding of the data needs for the first step of the model.

- Is your data collection as efficient and effective as possible?
- What is the impact of data on decision management processes in the museum?
- How can the results of data-driven decision management projects be used for other projects and initiatives?




Step 1:
DEFINE
1.
2.
3.
4.
5.
Step 2:
COLLECT
1.
2.
3.
4.
5.
Step 3:
PROCESS
1.
2.
3.
4.
5.
Step 4:
ANALYSE
1.
2.
3.
4.
5.
Step 5:
IMPLEMENT
1.
2.
3.
4.
5.
Step 6:
EVALUATE
1.
2.
3.
4.
5.
Data-Driven
Decision
Management

2.5. CASE STUDY:
The Estonian Maritime Museum (Estonia)

The second case study aims to exemplify data practices and specifically how data are used for decision making processes at the Estonian Maritime Museum. According to the museum's website, the Maritime Museum is one of the largest museums in Estonia. The museum's Seaplane Harbour exhibit also makes the museum one of Estonia's most popular destinations. The museum collects, preserves, studies, and presents Estonian maritime culture and history. The overall mission is to promote knowledge about, respect for, and love of the sea.[3] Along these lines, there are three main groups of target audiences. These groups include Estonian families and school groups, visitors from Finland, and people with professional interests in maritime history like historians, sailors, researchers.

The museum's marketing department is responsible for data collection about audiences and communication. Five people work with data collection and analysis about visitation and communication. This unit constantly collects and processes both quantitative and qualitative data about museum visitors. Quantitative data about physical visitors are collected through ticketing system machines and software. These include visitors' country of origin, frequency of visit, number of visitors in a group (family, individual visitors), and age. Additionally, the marketing team captures digital data from Google analytics, social media platforms, and media monitoring platforms (station.ee). These data are collected and processed on a daily basis. Particular attention is given to the profile of the audiences that visit the website and social media engagement (for example, on Facebook, Instagram and Vkontakte). In an effort to continue to gather quantitative data about physical and digital interactions, the museum sends out surveys to the participants of educational programmes to generate data about their experiences and overall feedback. The head of the unit provides an analysis of accumulated qualitative data. In addition, digital data is aggregated and processed by Google analytics and social media analytics (Facebook analytics, for example).

Every second week the collected and processed data are presented and discussed within the marketing unit to develop tactical operations. For strategic purposes, twice a year the museum arranges a general meeting with all museum staff to present, share, and benchmark key indexes of museum's operations for further future planning. In addition to this planning meeting, the Estonian Maritime Museum utilised an internal information and communication system (Siseveeb.se), that aggregates, consolidates, and processes data from diverse museum operational units and presents information in a structured and visualised way. This information is available to all museum staff and depicts the key aspects of museum's operations, including but not limited to the number of visitors, tickets sale, museum shop sales, catering, events, and services provided to visitors. It provides a snapshot of the museum's daily operations and informs museum personnel about the ongoing events or activities at the museum.

In addition to this internally aggregated data, the marketing team is constantly referring to and comparing statistical information about the visitors and activities provided by the Tallinn Tourist Board. This information allows the museum to develop a more nuanced understanding of domestic and international tourist flows in Tallinn and adjust the museum's external communication accordingly. For example, if the Tallinn Tourist Board has several activities attracting tourists from Germany, the museum tends to develop communication aimed towards these prospective German visitors. Another example is related to the published statistics from the Tallinn Tourist Board. If the number of visitors from Finland is expected to increase in the near future, the museum tends to produce more content and communication in the Finnish language. As stressed by Marge Rahu, Head of Marketing, this data cross-checking allows the museum to keep abreast of current trends and develop communications and activities in line with the broader landscape of Tallinn as a tourist destination. In addition, collaboration with museum's stakeholders (for example, Tallinn Tourism Board) leads to a synergetic effect in the museum's communication and increases the number of physical visitors and online engagements.

[3] *https://meremuuseum.ee/lennusadam/en/the-museum/, accessed online 2022-12-29.*

Lastly, concerning data-driven management, the museum’s services and programmes are subject to annual internal audit and data about visitors from both internal and external sources. These audits act as the main foreground to introduce new changes to the museum's communication and services. For example, due to the increased level of digital interactions from Google analytics as well as constantly growing visitor flow from Finland, the Estonian Maritime Museum has gradually extended its services in Finnish. Beginning in 2023, the museum will offer an educational programme, previously conducted only for the Estonians and in the Estonian language, adjusted for the Finish visitors. With this programme, the museum aims to attract new audiences and facilitate the retention of former visitors to successfully promote knowledge about, respect for, and love of the sea.

What can be learnt from this example?

To successfully implement data-driven decision making in relation to marketing and communications, museums should skillfully integrate different types and sources of data. The combination of internal and external data sources allows museums to develop a more nuanced understanding of the institutional environment and existing trends. Additionally, to develop programmes that are meaningful for the audiences, it is crucial to use Google analytics and communicate with museum visitors on site about their interests, background, and motives. Data-driven management allows museums to succeed and keep abreast in line with constantly changing environment.

LINKS AND FURTHER READINGS:

- Stubbing, A. (2022). Data-driven decisions: a practical toolkit for library and information professionals. London: Facet Publishing. 180.
- 5 Reasons Your Museum Should Use Data Analytics, https://medium.com/museum-tech-trends/5-reasons-for-museum-data-analytics-14b777c12d2a
- Google Analytics for Museums, https://www.museumnext.com/article/google-analytics-for-museums/
The Estonian Maritime Museum’s website: https://meremuuseum.ee/en/

SECTION 3.
Digital Communication

3.1. Digital Communication in Service of New Museum Agenda

The changing museum is one of the most debated topics in the museum field. This is not only due to the change in ICOMOS definitions, but also due to the interaction between the institution and the public, which is experienced and witnessed by both sides involved. The debate is broadening as the field of museums expands from the physical to the digitised, from the physical object to the intangible heritage, experiences, memory, and other dimensions. Interactions with digital museum objects are also active and transformative, allowing for a variety of engagements. Thus, the themes of digital heritage and digitisation, together with the themes of the mission of museums, remain relevant, even as new definitions of museums are adopted.

Museums focus on communication and creation of the new interrelated relationships between cultural institutions, society and technology. Digital space, or metaverse, became the area where new forms of communication and technological innovations flourished. According to the survey of DigMus, the latter aspect was the major issue for museum professionals from Lithuania. Additionally, data from other participants of the survey – Estonia and Sweden – shows the necessity for a more nuanced understanding of digital communication planning and implementation among various professionals working in museums.

The *goal* of this section is to outline the main stages of the digital communication campaign in a museum and outline key aspects that museum professionals should keep in mind while developing digital communications with diverse audiences. Along these lines, this section was designed first and foremost for museum specialists working in fields of external communication and marketing. However, other museum specialists, such as curators, guides, and educators, might also find some tips and information useful for their professional practices.

3.2. Glossary

Digital Communication – online communication activities of an organisation, connecting museums with target audience across online channels.

Digital Communication Strategy – the plan for delivering an organisation's digital communication messages to a target audience(s) online, describing the purpose(s), and how to accomplish the tasks and the desired outcomes.

Digital Communication Campaign – an organised course of digital communication actions to achieve a goal.

Key Performance Indicator (KPI) – measurable value that demonstrates how effectively an organisation is achieving key objectives of a digital communication campaign.

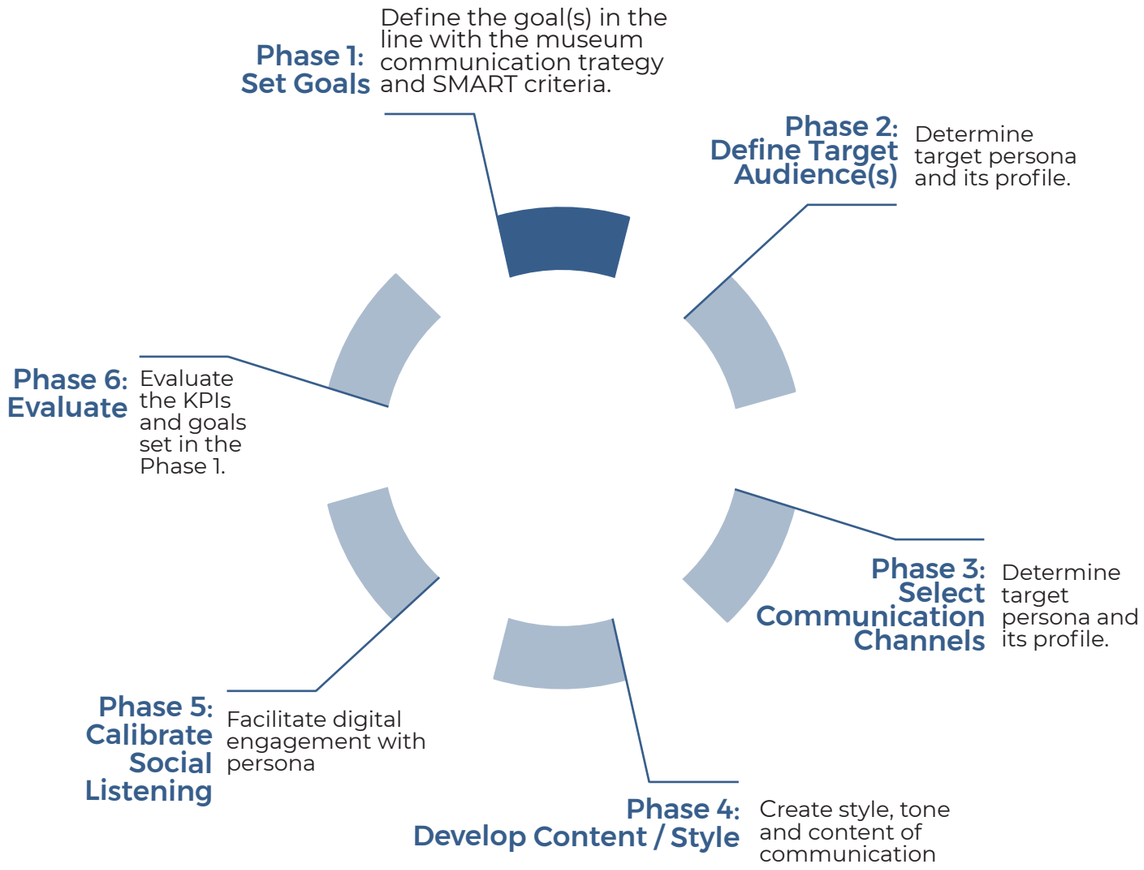
SMART Criteria – mnemonic acronym to guide organisations in the setting of goals and objectives for better results. SMART stands for specific, measurable, achievable, relevant, and time-bound characteristics of the objectives.

Target Audience – the individuals, groups and communities that are identified as the receivers for a particular communication campaign or message.

3.3. Phases of Digital Communication Campaign: Description and Instructions

In this toolkit, we approach digital communication campaign as a process that entails key 6 stages, including, defining goals (1), setting target audience and persona (2), selecting appropriate communication channels and platforms (3), developing content that resonate with the needs of the target audiences and comply with overall museum's agenda (4), calibrating social engagement and meaningful interaction (5), and evaluating of performance, including KPIs and overall communication goals (6). Figure 3 visually depicts abovementioned stages.

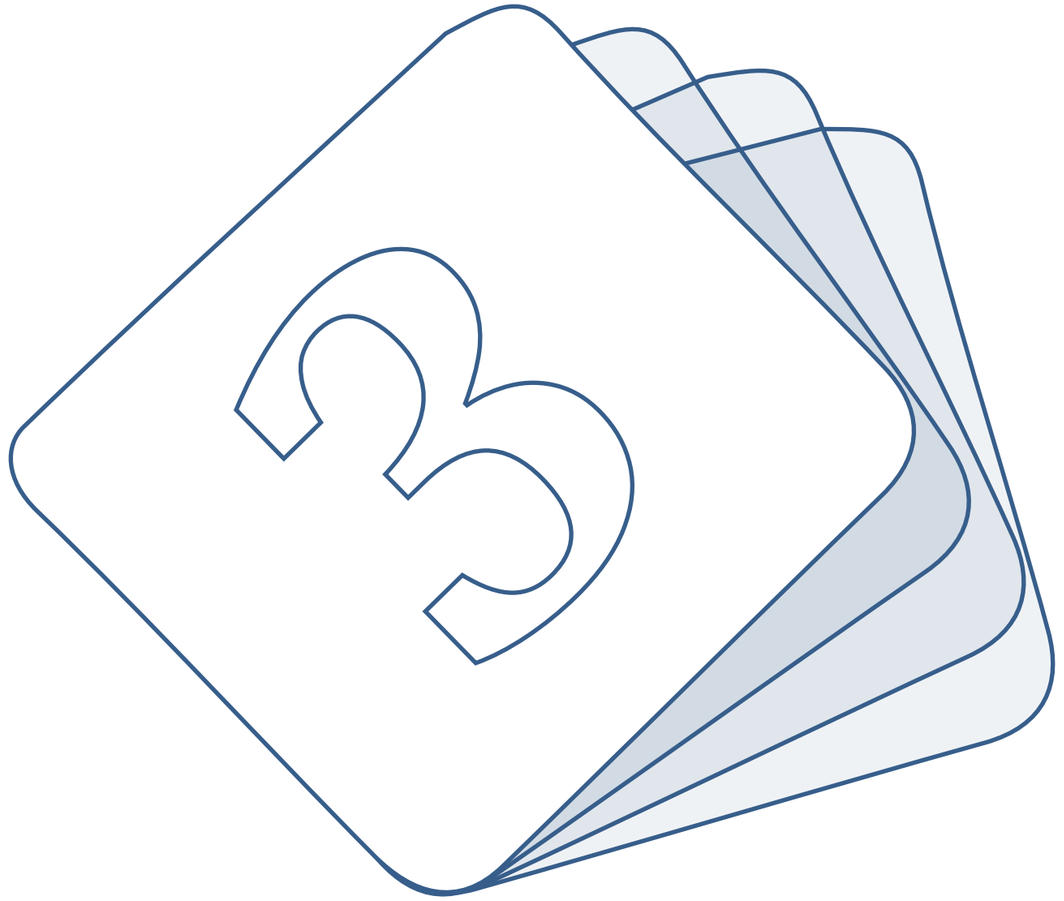
Figure 3. Key Phases of Digital Communication Campaign in Museums.



Worksheet # 3 entails the key phases as depicted in the Figure 3 and unfold key aspects, framed as questions, that should be taken into consideration while planning and auditing digital communication campaigns in a museum.

3.4. WORKSHEET #3
Digital Communication Campaign Check

Development of an effective digital communication campaign requires an organisation's communication strategy in place that ensures clarity and understanding of the key steps in planning and compelling direction for the team. The goal of this worksheet is to define the key stages in digital communication campaign planning and discuss each of the following aspects of the capabilities needed to undertake to develop a digital communication strategy. Here are some questions to guide your discussions with a team when developing a digital communication campaign plan for a museum.



Phase Check Question(s)/ Item(s)	Answer	Notes
Phase 1. Define Goals - Does your institution have a communication strategy? - Does an internal interdisciplinary collaboration across museum specialists exist in defining the goals? - Does an external collaboration across specialists (designers, IT and public relations specialists, etc.) exist in defining the goals? - What is the goal of your digital communication campaign? - How does the goal of the digital communication campaign relate to the existing communication strategy? - How does the goal of the digital communication campaign relate to the overall museum objective? - Define the goal using SMART criteria (specific, measurable, assignable, realistic and time-related)?		
Phase 2: Identify Target Audience(s) - What is the profile of the persona (individuals, groups and/or communities) that you want to reach out to in the communication campaign? - What are the socio-demographic characteristics of the target audience? - What are the interests and values of the target audiences? - What are the existing needs of the target audience that you would like to address?		
Phase 3: Select Communication Platform(s) / Channel(s) - What digital communication channel(s) would you use for the campaign? - How do digital communication channels comply with your target audience? - What is the reciprocity of the selected channels? - Which digital communication channel would be relevant to your specific goals, your personal and your collection? - Set individual communicative goals for each channel that you will use. - Set key performance indicators (KPI) for each channel.		

Phase Check Question(s)/ Item(s)	Answer	Notes
Phase 4: Develop Content/ Communication Style -What is the story that you would like to tell to your audiences? - How museum collections/ themes are involved in content development? - What is the communication tone of the message? - How do you use hashtags? - Define the content calendar and communication pace for each of the channels. - How are museum values communicated via content of digital communication channels? - How is the content relevant to the target audience/ contemporary context?		
Phase 5: Calibrate Social Listening/ Engagement - Does your digital communication campaign initiate and support discussions with your audience? - How does the audience engage with the content? - How do you enforce two-way engagement/ communication? - How do you manage the feedback? - How do you collect opinions from the audience?		
Phase 6: Evaluate - Evaluate the following KPIs for the each of the channel:[4] Engagement Social Media Messages Sent New Followers Gained Social Media Referral Traffic Most Visited Pages From Social Media Page Views Impressions Compare the initially established KPI with the existing one and adjust the communicative activities accordingly. To what extent have you reached the goals of the digital communication campaign (phase 1)? -What was particularly good about the campaign? - What changes are needed? - What lessons did you learn for the future campaigns? [4] *For example, a social media audit template developed by Sprout Social.*		

3.5. CASE STUDY:
The County Museum of Gävleborg (Sweden)

The third case study is about implementation of social media for digital communication of the County Museum of Gävleborg. This museum is a medium-sized regional museum with a focus on culture and history of Gästrikland and Hälsingland provinces of central Sweden. Their collection contains over 120,000 objects. Major collections belonging to the museum include cultural history, art, building and landscape conservation, and archaeology from Gävleborg County. Part of their collection consists of one of Sweden's finest art collections, donated by the Rettig's family. The primary purpose of the museum is to manage these collections, archives, and buildings and keep them accessible to the public.

The primary target audience of the museum is predominantly defined by the geographical scope of the Gävleborg region and Sweden. Following the visitor studies, a typical profile of the museum's target audience can be characterised as a female, aged 50+ years old, residing in the city of Gävle or the region.

To engage with its audiences, the museum actively involves social media for digital communication, including Facebook, Instagram and YouTube channels. Facebook is primarily used for delivering factual information to the users, for example upcoming museum events, but secondarily the museum also provides information about collections and key themes in textual or visual formats. Instagram is primarily utilised for visitors' engagement and entertainment, and the format of a reel or a short video to gain the most reach. YouTube is commonly used for longer videos and, more specifically, is used to stream live lectures or events occurring in the museum.

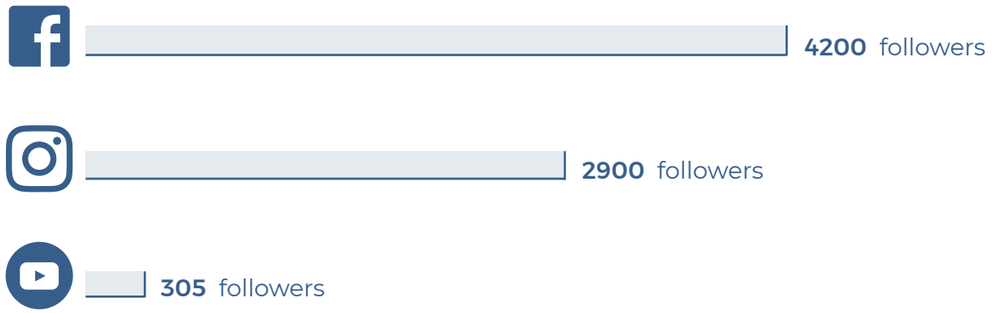


Figure 4.

YouTube is commonly used for longer videos and, more specifically, is used to stream live lectures or events occurring in the museum. Facebook is the museum's oldest and the most developed channel with 4,200 of followers (as of December 2022). The socio-demographic profile of a Facebook user is compliant with the museum's target audience, comprising of women aged between 45-64 years old and interested in local and regional history, art, and culture of the Gävleborg County. The second largest channel is Instagram with 2,900 followers (as of December 2022), including predominantly younger Swedish audiences aged 35-44 years old (Figure 4). YouTube is the latest established channel with 305 followers, but its number and reach are constantly growing.

When it comes to the content development and the style of communication, the museum follows the thematic scope of the museum and its collections. Communication centres around the following themes: art, archeology, buildings, ethnology and local history. Micro-history storytelling is very popular among the museum followers. For example, a video about the traditional way of wood production with the involvement of a locally famous Micke gained high reach both on Facebook and Instagram. Another recently successful example is a story from fisherman Sture Nordin from Bönan, who demonstrates and tells about his fishing procedures. In both cases, a balanced combination of storytelling with the involvement of real (local) people, the museum's profile on the regional culture, and demonstration of processes, resulted in the high impact and reach of the communication. Therefore, when thinking about the content of the communication, it is increasingly important to keep in mind the scope of the museum and its collections, interests and needs of the followers and a good story.

To humanise perception of a museum as an inclusive and welcoming institution, humour is often used in the development of social media content. For example, traditionally on All Fool's Day, the museum posted content that contains scam and humour (often dark), to attract attention and enhance interaction and engagement. For example, in 2022 a post was made about snakes who were invited to the museum as art experts after the flooding in spring. More examples of humorous posts could be found directly on the museum's Instagram page (link is in the list below). The involvement of humour in the content acts as a trigger for engagement and allows to calibrate social listening by fostering dialogue and discussion. One more hint to keep audiences engaged is to end a post with a question mark. For example, on Instagram it is a commonly used strategy to post an image of a museum's artefact or a documentary photo of Gävle in the past and inquire about the meaning/ application of the object or location of the site in contemporary landscape. The main challenge here is to select an artefact that is simultaneously difficult enough to guess but at the same time attention-catching (Figure 5).

Figure 5. An example of interactive content: an image of the museum's artefact and an inquiry to guess its meaning.

Source: https://www.instagram.com/p/Cd_Re42o0wi/?igshid=YmMyMTA2M2Y=

In addition to asking questions, it is always important to provide feedback on the comments, ideas and suggestions. This, in turn, signifies respect and appreciation of the museum's audiences and their contribution to the discussion.

To evaluate the outcome of digital communication and overall reach, the team of communication specialists tracks the statistics about the number of followers, including existing followers and newly gained followers on all channels, page and video views on YouTube, and comments or feedback on all three channels. In addition to that, the team regularly explores the abnormalities in audience engagement with the content (for example, those posts with the highest or lowest levels) and try to investigate the reasons for the consequent engagement. This data serves as food for thought and lessons to be learnt for the future. Overall, planning and implementing digital communication in social media is very much an exercise in trial and error, and only by experimenting with content is it possible to find out the strategies and approaches that really resonate with the audience.

To conclude, the success of digital communication depends very much on planning. For this purpose, the communication team of the museum has developed a map that contains a monthly operational plan for digital communicative activities. It is developed on a monthly basis and includes dates and weekdays, type of content to be published and the channel(s) used. When the content is posted a blue-mark is used to signal that the task is completed. This tool provides a holistic overview of digital communication activities and allows keeping social media channels consistent even if there is a turnaround of communication specialists.

What can be learnt from this example?

In planning a museum's digital communication it is crucial to keep in mind the museum's overall mission and contemporary needs of the museum's audiences, which are constantly changing. In addition, digital communication as any kind of communication entails two counterparts. Specifically, behind any artefact or issue communicated via social media there is a real person or a story. On the other side of a social media post remains museum audience with particular needs, interests and preferences. Therefore, the ultimate goal of successful digital communication is to build an emotional connection between these two entities. The best way to find this balance is to adopt learning by doing an approach and constantly experiment and track the outcomes of these trials.

LINKS AND FURTHER READINGS:

- The Ultimate Social Media for Museums Guide: https://sproutsocial.com/insights/social-media-for-museums/
- A. Langer (eds.) (2022). Storytelling in Museums, American Alliance Of Museums, 312.
- The County Museum’s of Gävleborg Social Media Channels:
Intagram:https://instagram.com/lansmuseetgavleborg?igshid=YmMyMTA2M2Y=
Facebook:https://www.facebook.com/lansmuseetgavleborg
YouTube: https://www.youtube.com/@lansmuseetgavleborg7221