
Event Concept Guide

- Hackathons for Museums -

Lessons Learned and Recommendations

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Abbreviations

AR	Augmented Reality
BYOD	Bring Your Own Device
DE	Germany
DK	Denmark
LT	Lithuania
IT	Information Technology
PL	Poland
SBP	South Baltic Programme
SE	Sweden

1. Introduction

1.1. BalticMuseums: LoveIT! project

In the project BalticMuseums: LoveIT! hackathon events in museums help getting inspiring ideas of gamified apps. The team of nine partners - museums and science centers, non-governmental organizations and research institutions from Poland, Denmark, Sweden, Lithuania and Germany – develops tours for visitors' smartphones – with a focus on gamification elements. Based on the partners' needs, a generic framework for gamification of tourist attractions was derived. A cloud-based system conforming to the guidelines of this framework is being developed by the University of Szczecin (lead partner) to enable museums to easily add gamification elements (e.g. earning badges or collecting points for visiting certain places or solving quizzes) to eGuide tours. The launch of the first version of the BYOD eGuide tours is planned for end of 2019. The developed IT tools will be open source and marketed under a common brand – open to be joined by other museums and touristic attractions later on.

Working with a user-centric design process, the project hosts special brainstorming and programming events – *Baltathons*, (a name derived from a combination of 'Baltic' and 'hackathon'). The creative ideas generated during these events feed into the gamified apps later on.

Project Website: www.balticmuseums.info

Project Knowledge Base: www.knowledge.balticmuseums.info

The project is part-financed by the European Regional Development Fund, within the Interreg South Baltic Programme.

1.2. What is a hackathon?

The word hackathon derives from the words hacking and marathon. It is an event set up as a competition for creative problem solving, originally relating to technology. Piller and West (2014) define hackathons as "tournament-based crowdsourcing for technical solutions" as part of open innovation initiatives, with hackathons even called "jump start for innovation" (Leclair 2015, p.12). It is a method to involve external people into innovation development. The understanding of the event concept is not defined strictly with some only relating it to programming (e.g. Oxford University Press 2018: "collaborative computer programming") while others see it more broadly, e.g. Tauberer (2018) defines: "A hackathon is any event of any duration where people come together to solve problems."

Hackathons gained considerable attention in the past, not only in the IT sector but also in other sectors. About one third of open innovation initiatives of the U.S. government were contests, out of which a considerable number were hackathons (Mergel 2015).

For testing and adapting this concept, the BalticMuseums: LoveIT! project implemented a series of hackathons, continuously reflected on them and refined the concept to suit the museum environment.

1.3. The hackathons of BalticMuseums: Baltathon

1.3.1. The process of hackathons and revision of concept

In the project “BalticMuseums: LoveIT!” a series of hackathons in museums was organized to feed into new gamified developments for visitor apps. These events were scheduled in Gdynia (PL), Klaipeda (LT), Malmö (SE) and Greifswald (DE). The overall organization, online promotion and expertise was provided by Netcamp in Szczecin (PL) together with University of Szczecin (PL) for the first three hackathons, the final hackathon in Greifswald was designed and implemented by Business Academy North in Greifswald together with Stralsund University of Applied Sciences (DE). The hackathons were all promoted under the same name “Baltathon” with uniform visuals.

After each hackathon, in-depth interviews with the organizers were held and the learnings captured and distributed to the next event organizer. This process resulted into a revision of concept after the third hackathon, with an adapted concept implemented in the final hackathon in Greifswald, DE.

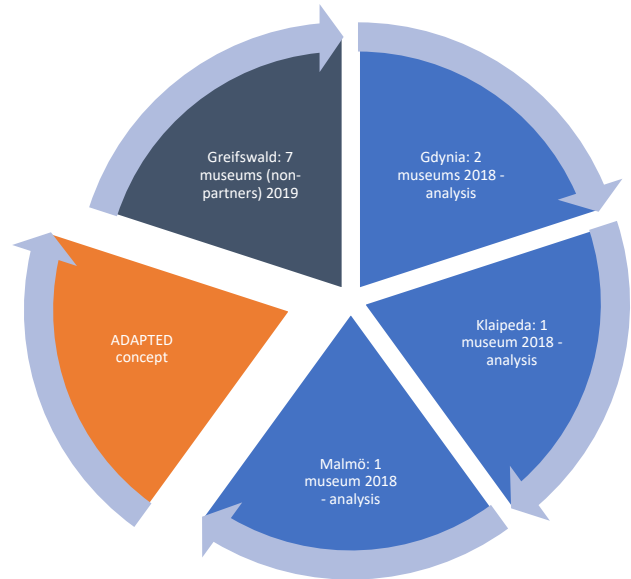


Figure 1 Process of Hackathon event development

1.3.2. Gdynia (Poland)

The hackathon in Gdynia took place from 17 – 18 March 2018 at Experyment Science Centre. The event was hosted both by Experyment Science Centre and NMFRI Gdynia Aquarium, and co-organised by Netcamp (Szczecin, PL) and the University of Szczecin. 56 participants signed up for the hackathon, one team did not come, and one team stopped during the first day of the hackathon. A warm-up was hosted one week before the event.



1.3.3. Klaipeda (Lithuania)

The hackathon in Klaipeda took place from 14 – 15 April 2018 at the Lithuanian Sea Museum. 34 interested people from the Lithuanian cities Vilnius, Kaunas, and Klaipeda registered for the hackathon (55 was a maximum preferred). The real number of participating “coders” was 20 in addition to IT consultants. The participants were 18 – 50 years, coming for hobby and practice, being students, IT specialists and



marketing people.

1.3.4. Malmö (Sweden)

The setup of the hackathon at Malmö Museums was different, being divided into a warm-up (18 September 2018), a one week working phase and the actual hackathon day (25 September 2018). 17 participants in 4



teams participated from Poland and Germany. Due to the geographical distance of most participants, the warm-up was organized via video conference. The participants could talk to the mentors and the mentors took them in a tour with a camera through the exhibition. The hackathon day lasted six hours. The idea was, that participants could develop their idea and code at home. The actual hackathon day was planned for finalizing the work, create a final presentation, talk to museum's workers and IT experts. The final presentation was pitched (4 minutes) to other teams, organizers and partners.

1.3.5. Greifswald (Germany)

The setup of the final hackathon in Greifswald was considerably different. Seven different museums from Mecklenburg-Vorpommern region joined with topics, while seven teams from Germany and Poland totaling 35 participants joined the event. Additionally a process expert and five Augmented Reality specialists from a Finish university joined to coach the teams. The hackathon lasted 30 hours on a weekend, 18-19 May 2019. The participants were students and pupils of vocational training in the areas of IT, Renewable Energy, Design and Art, mostly below 30 years of age, with an equal mix of gender.



2. Event Concept – Lessons Learned

2.1. Reflections on tasks and results from initial 3 hackathons

During the first three Baltathon events we found, that defining the challenge to the participants is key and challenging. If it is too narrow and too problem oriented, it has a limiting impact on motivation and creativity. For example an experienced participant said the task was too "business" oriented and not free enough.

2.1.1. NMFRI Gdynia Aquarium (Gdynia, Poland)

For Gdynia Aquarium, the briefing was an app that includes a kind of game. In the warmup, problems of aquarium were highlighted. The aquarium asked to develop a game that solves problems (e.g. people getting

lost). This resulted into comparable results, with most groups focused only on the problem in a very narrow sense, some even not considering the gamification aspect. The conclusion was, that a more open task would have resulted into more creative ideas, but these might be difficult to implement. With such a problem based briefing of participants, rather achievable ideas were developed, however, not very innovative.

2.1.2. Experyment Science Center (Gdynia, Poland)

For Experyment, the briefing was to develop an app. During the warmup, results of a survey of guests and the museum team were presented. Following a design thinking approach, the science center had identified personas to focus on, based on the survey. Experyment presented problems that the guests encounter in the exhibition, and asked the hackathon participants to solve these problems (e.g. exhibition seems to be for kids, not for adults; or how to use exhibits, how to provide instruction – although the description is available people often don't read it). The museum team even suggested how to solve the problems already during the warmup. During the warmup, the strategy of information was changed as participants seemed to be overwhelmed by expectations. The second part of the warmup was then dedicated to gamification. The Experyment team concluded that clear and detailed result expectations seem to limit creativity. For the future they recommended to provide input only about their institution in more general sense and leave the participants more freedom, to receive more out-of-the-box ideas. The team also proposed to stay in touch with participants after the event, to invite them again or involve them in what happens next or ask them to first test the later developed application. They confirmed the satisfaction with the general organization and the exceptional teamwork in the project team. However, how to take the results from the event further to real developments seems a challenge.

2.1.3. Lithuanian Sea Museum (Klaipeda, Lithuania)

The Lithuanian Sea Museum focused their briefing on a selection of potential topics and problematic issues. Upon post-event reflection, the topics seemed to include already a solution. The topics were promotion, marketing, a game or a product provoking an engaging exploration of one of the exhibition houses. Problematic issues were for example the distribution of visitors along the route, navigation, multilingual, seasonality and online ticket promotion. While gaining considerable experience and learning about potential partners, the museum did not feel to receive creative ideas for their further app development. They expected a functional concept for a product - a BYOD-guided tour providing an enhanced visitor experience during and after the visit. Expectations for unexpected solutions were high. However, the participants presented ideas that were already known by museum staff and very similar to their own solutions. The event format was though very promising to the museum, as uniting museologists and the IT sector. But communication has to be facilitated, in the chosen format contacts were rather little, so the mutual learning remained minimal. An advice for future hackathons would be to have a representative from the museum as an obligatory member of each team during the whole process.

2.1.4. Malmö Museer / Naturbornholm (Malmö, Sweden and Bornholm, Denmark)

The concept used to derive the task for participants was done through following the Generic Learning Outcomes (GLO) process. From this process the goals for the hackathon were defined. One session had been conducted with the project partners, one with students/school pupils at Malmö Museums and one at NaturBornholm to come to the expected outcomes. The outcomes defined by the project partners were given as a briefing to the participants.

“The chart below tells what we want our visitors to feel, think, and do when they are using our Bring Your Own Device (BOYD)-tool, during and after the guide.” (extract from the briefing for Malmö Hackathon)

Knowledge and understanding	Different kind of learning experience. Add additional content to the visit, that are not available without the tool.
Skills	I will be able to use the tool with ease.
Attitudes and values	I will have a feeling of freedom by the possibility of an individual guide
Enjoyment, inspiration, creativity	I will have fun, be curious and want more.
Activity, behavior, progression	After the guide I will behave in a more environmentally friendly way, specifically regarding the Baltic sea.

Figure 2 Briefing Malmö Hackathon

The team of Malmö hackathon evaluated the results of the hackathon giving basic ideas and inspiration, however, no final solutions were produced. It can only be understood as an input for a longer process. The workload and effort in organizing the event has to be balanced with the results expected. What the team recommended was working the GLO process to better understand users and the own organizations expectations, and use these to define the challenge. To increase both participation rates and efficiency, a collaboration with other (tech) organizers was recommended.

2.2. Lessons learned

Overall, the organizer teams were satisfied with the organizational part of the hackathons, despite being challenging for the museums. Learnings and resulting recommendations will be described in the coming chapters for organizing a hackathon. More difficult to judge was the evaluation of the hackathon results. This can be explained by the differing expectations. In the hackathon conditions it was broad, by naming ideas, code or ready solutions as accepted results. However, not only museum staff had different expectations, but also participants, if coding is in focus or general idea development and presentation skills.

There seems to be a tension between readily implementable though not surprising solutions on the one hand and innovative proposals of high creativity on the other hand. The problem solving oriented briefing in the hackathons with even presenting own solutions by the organizers resulted into no out-of-the-box ideas. Moreover in the setup, there was little interaction with participants who mostly worked for themselves silently. Getting more involved in the creative process could have provided the museums with further insights into ideation.

2.3. Revised concept for final hackathon (Greifswald, Germany)

For the final hackathon, the approach was changed. First, an overarching goal was defined that would suit to accommodate various museums and the project: to find gamification ideas for an app that motivate to visit the museum. This implied we were not expecting nor judging the excellence of coding, but the suitability of ideas. The coding aspect was moved to the background, as it was not what we were looking for.

The participant communication was changed accordingly to focus on creativity instead of programming. Here the word “hackathon” proved to be a bit tricky as it implies programming in a narrow sense to many. The event was described as “a creative weekend for IT in museums”.

Moreover, the focus of the event was shifted to focus on learning instead of competition. With learning in focus, museum representatives joined each team to fully participate in the creative process. Teams worked in a concept of 5+1=6, with 5 participants and 1 museum expert. The museum staff was participating in the brainstorming phase to feed into and learn from the creative process of the team. Moreover, workshops and networking activities were offered. Validation was done according to transparent criteria (motivation, innovativeness, simplicity, completeness) by a diverse jury of five members. The jury members received a dedicated briefing. Also the appreciation of learning for all participants was in focus of the jury feedback.

The topics of the seven participating museums, ranging from beetles in the beech forest, over an old, unrestored vehicle to remarkable drawings and tapestry, were given to the teams in the beginning of the hackathon by a draw. The objective of the Baltathon was the development of innovative and interactive mobile games, which shall motivate prospective visitors prior to their visit to a museum. These games shall increase the attractiveness of a visit to the museum, reach out to new target groups and increase the individual visitor traffic. The subject matter of the competition work were conceptions, prototypes (even paper) or mobile applications which are based upon gamification. The participating museums selected their own topics or objects and provided them, along with information, images, data, sounds, etc., to the participants of the Baltathon. These topics and/or objects constituted the working basis of the Baltathon.

Due to the shifted focus of creativity and learning, experts from Lathi University of Applied Sciences in Finland were invited to support both in helping the team with the work process to organize their time efficiently and with a team of Augmented Reality (AR) experts, to provide realization of AR solutions centrally to all teams.

The feedback of both participants and museums was very positive. Participants were motivated to visit the museums afterwards and the museums appreciated both the ideas generated, but especially this form of intense exchange with potential target groups and the impression of what is achievable in short time.

Based on these experiences, we summarize our recommendations in the following chapters.

3. Recommendations - Concept

3.1. Event concept

3.1.1. Hackathon conception

We recommend to ask these questions in your development of a suitable hackathon concept:

- What do you expect to get from the hackathon? (e.g. contacts, creative ideas, problem solutions, prototypes, learn) Define your targets! How will you know, if the hackathon met your expectations?
- How do the selection criteria for the winning teams of the hackathon link back to your targets?
- Who are the "right" participants that help you reach your targets with the hackathon? (e.g. tech enthusiasts, visitors, school kids, professional programmers) What motivates them? How will you communicate with them? Which added value you will you provide them?
- What will you do with the results?
- How should a result look like (code, idea, ...) that you can further use it? What legal aspects do you need to cover to further use the ideas/results?
- Is the hackathon part of a larger process? How will it fit in, will you be in contact with the hackathon participants after the event?

- What is the overall value of the hackathon for your organization?
- How does it fit with your general innovation strategy?

3.1.2. Participants

Depending on your target, participants who you want to attract might differ. In our experience, we focused mainly on students and pupils in vocational training, in some cases also professionals. The motivation of the participants is manifold, however, only limited based on the prizes. Prizes are rather an additional eye-catcher in promotion and a feeling of reward for the time devoted to the hosting organizations. The drivers of motivation should be used in deciding how to communicate the event.

An overarching conclusion is for driving motivation you should provide participants with the maximum freedom to unfold their ideas, however, still reaching your expectations. This relates both to team setup, to the required final product of the team, to the topic and to ways of working.

Why do participants come to the hackathon in our experience:

- Gain new experiences and learn
- Get to know new people
- Fun
- Test of own skills (creativity, programming, team work, under time pressure)

But also (based on more programming oriented first three hackathons):

- Getting to know the people from IT industry (for business contacts/jobs)
- Curiosity
- Interesting topic of hackathon
- Compete, challenge
- Love programming
- Learn from other programmers

The aspect of competition is ambiguous. While some appreciate the competitive atmosphere, others disliked this aspect and preferred to see it as a learning experience only. In order to foster exchange and networking, we experienced that putting the joint experience and learning at the first step and having the competition as an add-on in all communication proved to be valuable.

Having a hackathon with several museums bringing their different topics and stories, seems to have increased the learning aspect, as the solutions are not directly comparable. This seems to have fostered exchange between the teams.

The setup of teams is recommended to be as interdisciplinary as possible, however, being too restrictive might make participant acquisition difficult. Also here it counts, the more freedom given to participants the better for their motivation.

We recommend to integrate a member of the hosting institutions providing the topics into the teams. Thus, the team has full access to the expert knowledge and the museum staff also learns about ideas that might not even be finally presented by the team in the end.

As for international hackathons, our experience is that on the one hand it adds to a great atmosphere, however, some participants have fears in presenting in a different language. If teams are not mixed with different countries, the team tends to speak their native language which might exclude the museum staff

from another country from gaining full insights of the work process. So, either all the team is from one country, or it is fully mixed to have English as the only means of communication.

3.1.3. Mentors

Mentors are a basic concept of a hackathon. They inspire, give knowledge and help the participants. It is recommended to have different kind of mentors. For example, in Klaipeda, six external IT related experts and seven museums staff members acted as mentors and jury. In Malmö, mentors were available for questions since the warm-up. In Greifswald, museum mentors were fully part of the teams to take part in the creative process while a process mentor and several tech mentors were at disposition for all teams to use as a support. We found that this latest set-up was most beneficial.

- Plan a briefing for all mentors to have same knowledge, expectations and understanding of the goal of the event (one voice to the participant).
- If museum staff is integrated into the participating teams, they need a separate briefing, especially on how much to interfere, be careful in judging solutions too early (limits creativity) and how to act in case of conflict or stagnation of the team's work.
- Present all mentors with their competencies at the beginning of the hackathon (and also at the warmup if applicable).
- Standardize, how mentors are to be approached during the hackathon – e.g. in an additional room/or corner to meet alone without disturbance, where also participants are not scared that their idea is "stolen" by others.
- Mentors could go round the groups, however, this should though be limited, as participants might feel "disturbed".
- During the night, participants did not want to be disturbed and wanted to be focused on work. Consider, if a first part of the hackathon is with mentors to talk and discuss, followed by a part of quiet working time without mentors.



3.1.4. Jury and decision criteria

An interdisciplinary jury shall decide for the winners of the hackathon. In our final hackathon, there was a jury of five: Software Developer, Graphic Designer, Software Developer and Project Manager, Professor of Faculty of Business Studies, Culture Expert/City Employee.

It is recommended to have transparent judgement criteria for the jury. The judgement shall be objective, as otherwise the best storytellers seem to win.

- Make the criteria transparent for the participants, e.g. present already before registration and have them visualized throughout the hackathon (e.g. on a screen).

- Make criteria understood by all jury members.
- Develop criteria together with all organizers as they define the target of the hackathon.

Grading scale: 1-5, where 1 is the lowest						
categories						
team name	innovation (modernity of the solution)	attractiveness (whether the solution is attractive to a potential user)	implementation possibilities (is it possible to implement in the museum)	functionality (ease of use, pleasant use and repair of mistakes made)	complexity (whether it covers all aspects of the issue: app, gamification, code)	sum

Figure 1 Jury Evaluation Criteria – initial concept

For our final hackathon, the jury grading was adapted, with each jury member judging each team on a 5 point Likert scale on agreement of following sentences. This proved to be transparent and well-understood.

- Motivation: The game motivates the target group to visit the museum.
- Innovativeness: The concept of the game has surprised me. I consider it innovative.
- Simplicity: The concept of the game could be implemented now with todays current technical tools, just using the visitor’s smartphone.
- Completeness: The concept of the game demonstrates the full gamification mechanisms.
- Additional: Fan factor: (Only 1 team by each jury member): The game motivates to be played several times and has fan potential.

The jury received a briefing document and held a 30-Min. briefing meeting prior to the final presentations.

TEAMNAME							
Museum							
Topic							
Points		5	4	3	2	1	
Scale		I strongly agree	I tend to agree	neither agree nor disagree	I tend to disagree	I strongly disagree	Total
Motivation to come to museum	The game motivates the target group to visit the museum.						0
Innovativeness/Out of the box	The concept of the game has surprised me. I consider it innovative.						0
Simplicity of implementation	The concept of the game could be implemented now with todays current technical tools, just using the visitor’s smartphone.						0
Completeness	The concept of the game demonstrates the full gamification mechanisms.						0
Additional if same points result: Fan factor: (1 point by each jury member)	The game motivates to be played several times and has fan potential.						

Figure 6 Jury Evaluation Criteria – final concept

For the special situation of two institutions running the hackathon together:

- It is recommended to have a joint jury. In Gdynia, it was divided into two parts for Experiment and NMFRI Aquarium which is not recommendable.
- Consider the case, that the jury cannot come to a joint decision. An extra award could be a solution. The criteria in case of the extra award should be transparent and the same across institutions.

3.2. Awards

Looking at why people come to the hackathon (chapter 3.1.2), prizes are not mentioned with top priority. However, this may be specific to these hackathons, as they were done by public museum institutions. Supporting these might have a volunteering and social aspect.

For Gdynia sponsoring was limited and due to the project funding there were constraints for the prizes. Due to these constraints, prizes were not part of the promotion activity. It is considered that more attractive prizes would have been an additional asset.

In Klaipeda, the jury granted an award exclusively for one victorious competition entry: a SPECIAL AWARD which included a package of invitations for 2 persons to the best touristic destinations in Western Lithuania and a 100 Euros monetary prize. Winners of the audience award were presented with iPad smart keypads.

In Greifswald, a 3D printer for each team member, although a simple model, was perceived as a major motivation, yet no reason to come. However, it grasped attention of potential participants in promotion.

In general:

- Technology prizes are good if they are connected to the topic of hackathon and have an innovative character.
- On some hackathons cash prizes are issued from a wide range of amounts – depends on budget and sponsors and the overall scale of the event.
- For individual prizes: the maximum amount of participants in each team should be limited to acquire prizes accordingly.



3.3. Materials for participants

Content material was provided to the teams before the hackathon in Gdynia and just at the start of the hackathon in Greifswald:

- Pictures, Logo
- Videos

- Audio
- Texts

In Malmö, a brief selection of pictures was available online, along with the contact to the mentors who could provide texts and other input.

For the situation of several museums participating with different topics, we recommend to publish the available topics beforehand, however, have a draw only at the beginning of the event. This increases positive excitement, while allowing to getting familiar with the topics, though not working with them yet. Materials are then only provided to the team has won the lot for the specific topic.

3.4. Design of schedule

The hackathon events in Gdynia and Klaipeda lasted roughly 24 hours. Various participants said the hackathon was too short, compared to other hackathons, however, longer events would increase the infrastructure requirements (e.g. showers). The hackathon Greifswald lasted 30 hours, with some participants wishing it would have event started Friday evening with a welcome event, instead of Saturday.

Recommendations:

- At least 30 hours of hackathon are recommended for the working atmosphere to develop and to allow for creative ideas and networking to evolve.
- Plan elements for networking and getting to know each other across the teams, e.g. a party an evening before, workshops like yoga/drumming, introductory games
- A moderator should guide throughout all plenary sessions. A separate time keeper is recommended.
- Evaluate how much time to give for the final presentations: if short, there is limited time to fully understand the participants' ideas and the focus seems to shift towards judging presentation skills. If presentation skills are judged (not recommended), teams seem to spend considerable time for preparing their final presentation, which is not dedicated to content anymore. We recommend 8 min. presentation and 4 min. Q&A of the jury/audience. Someone should take care of timing and moderate the discussion.
- Teams should have their presentations randomly, for the first team it is most difficult for the final presentation.
- Plan enough time during the final presentation for technical issues, changing laptops, microphones etc.
- Allow enough time for the jury discussion.
- Consider an energizer at night or after dinner: like an activity like stretching/Zumba/game/music
- Offer workshops to enhance learning experience beyond hackathon event e.g. creativity

In Gdynia, a warm-up event was hosted on an evening one week before the actual hackathon, in both institutions. In Klaipeda, an introduction to the museum was given at the beginning of the hackathon. In Malmö, the hackathon was split in a warm-up, coding time at home and a six-hour final day. In Greifswald, no warm-up was held. Instead museums held a short presentation at the beginning of the event. A warm-up proved to be good to get to know participants, create an atmosphere and give an impression of the

exhibition. However, it is more suited for hackathons with only one host and it could be problematic for teams coming from other areas.

— AGENDA —

DAY 1

- 12:00-12:40 Registration & welcome
- 12:45 Opening Greetings /Cinema Hall, Level 0
- 12:50 Partners presentation
- 12:55 Presentation of agenda and goals
- 13:03 Hacking! /Main Hall, Level 1
- 15:00 Lunch /Dobra Koza, Level 0
- 16:00 More hacking... /Main Hall, Level 1
- 20:00 Dinner /Dobra Koza, Level 0
- 21:00 Hacking all night! /Main Hall, Level 1

DAY 2

- 08:00 Breakfast /Dobra Koza, Level 0
- 08:30 Trial presentations /Temporary Exhibitions Hall, Level 0
- 11:30 Finishing of prototypes /Main Hall, Level 1
- 12:30 Lunch /Dobra Koza, Level 0
- 13:30 Final presentations /Cinema Hall, Level 0
- 16:30 Judges deliberate
- 16:50 Winners announcement /Cinema Hall, Level 0
- 17:10 Closure



Figure 3 Schedule Gdynia

<p>DAY 1. 18.05.2019</p> <p>09:00 Warm-Up (Registration)</p> <p>09:30 Opening Ceremony (Getting to know the BalticMuseums project, museums, participants)</p> <p>11:15 Start in the Teams</p> <p>13:00-14:30 Lunch</p> <p>18:00-18:45 Different Workshops</p> <p>18:30-20:00Uhr Dinner</p> <p>23:00-24:00 Chill Out & Networking DJ @ Lounge</p> <p>00:00 Pizza & Networking</p>	<p>DAY 2. 19.05.2019</p> <p>08:00-09:30 Breakfast</p> <p>11:30-13:30 Final Presentation (max. 10 min. per Team)</p> <p>13:30-14:15 Lunch</p> <p>13:30-14:00 Lunch Jury (parallel Jury-Discussion)</p> <p>14:15 Final Ceremony incl. Prize-Giving</p> <p>15:00 End of event</p>
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Figure 4 Schedule Greifswald

The weekend is a good time for the hackathon, although it might limit participation of professionals who might participate during work hours. Choose the date of your event carefully. Avoid the summer, holidays, examination period for students, and other major events in your region, especially other hackathons. The date also depends on the target group you would like to address. For museums, off season is recommended.

4. Recommendations - Communication

4.1. Promotion of the event

The participants of the hackathon are not only programmers, but usually interdisciplinary teams. This impacts communication to attract participants. The organizers should discuss who they want to attract. When

programmers hear hackathon they think of coding, but also others should be attracted for fueling the creative process.

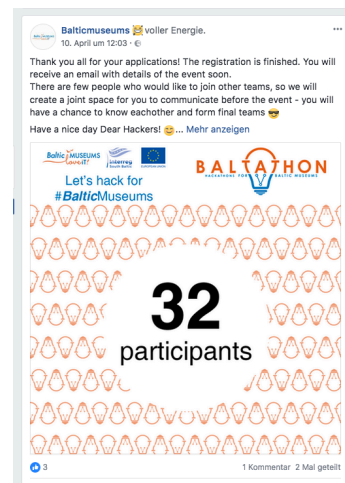
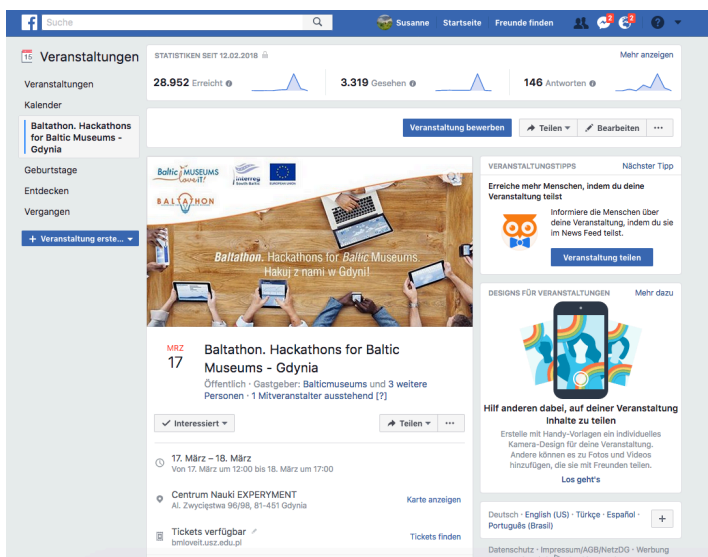
Further, the target of the hackathon should be clear: You should identify what is the result of the hackathon: to write a code or if you “just” want the ideas at the end of the hackathon. For the Baltathon in Gdynia, Klaipeda and Malmö as well as Greifswald, it was written both code, ideas and prototypes of any kind (even paper-prototypes) were accepted.

For communication tools, the success differed in different countries. In a questionnaire after the event in Gdynia it was found that participants were attracted by the Facebook event or the organizers’ Facebook fan page or by word of mouth. In Malmö, the experience was that social media activities did not result as expected, likely due to using the project account and not the museum’s account. In Germany, communication to attract participants was mostly personal and using organizers’ own media e.g. university newsletter. It required considerable effort to convince pupils and students for participation, also partly, not knowing what to expect or fearing not being good enough to participate.

4.1.1. Online promotion

Register the event at hackathon and event websites (challengerocket.com and others e.g. crossweb.pl for Poland), meetup.com (paid), digestlithuania.lt (for Lithuania), or hub (for Sweden).

Create a Facebook event. Point out a representative to report on Facebook during the event.



Recommendations:

- posts every day, even two or three times a day
- at the beginning provide general info and tips how to hack, what is hackathon, in each post add link to registration form (on separate website)
- later on publish more specific information, present mentors and agenda
- give some external content, posts from blogs, posts from other fan pages, everything what is connected to the event
- share information about previous hackathons, and invite same participants, ask them also to spread information about hackathon
- use key visuals and re-use them
- use small animations/videos – more engaging
- hashtags important – event hashtags to be used before, during and after event
- place Facebook ads

4.1.2. Offline promotion

For offline promotion we have made good experiences with:

- Personal meetings to present event concept e.g. with students or pupils
- Communication via multipliers
- Press Releases
- Presentation at lectures
- Posters in public and in participating institutions and at educational institutions
- Newsletters of educational institutions and museums
- Digital screens in public and in participating institutions and at educational institutions
- A patronage of regional and national authorities can support communication outreach and credibility.

4.1.3. Sponsoring

Winning sponsors is recommended. On the one hand they could provide prizes or technological items needed during the hackathon, on the other hand participants also attend the hackathon for getting job contacts.

4.1.4. Communication timeline

Registration started about 4-6 weeks before the event. It is good to let to know people about the event before the registration starts, for example presentations to e.g. student groups started 3-4 months before the event. However, if target groups are different, this strongly affects the communication timeline. For example in Sweden, if the event was known 6-8 months ahead, it could have been made part of the obligatory student curriculum.

4.2. Website and registration form

Registration for the event was done via the project website in a special registration form:

- Name, Email, Interests, Phone number, Size etc. for Gadgets (e.g. Tshirt), Dietary requests
- With registration: confirm terms and conditions
- Decide on team or individual registration: We recommend, participants register separately, indicating the team they belong to.
- A reserve list for participation should be created, if people cancel their participation.

For Malmö, the use of Crowdforge, a platform to build teams, was offered but hardly used.

4.3. Design

Having a brand for the hackathon is very important, to recognize it easily and create identification during the event. Important are colors, that also stand out on photos during the hackathon. Additionally, a catchy key visual is recommended.

The design should be used consistently across channels.

- Brand
- Strong colors
- Key visual

- Basic visual for Facebook
- Include hashtags and website
- Animation(s) for Facebook, for event kick off etc.

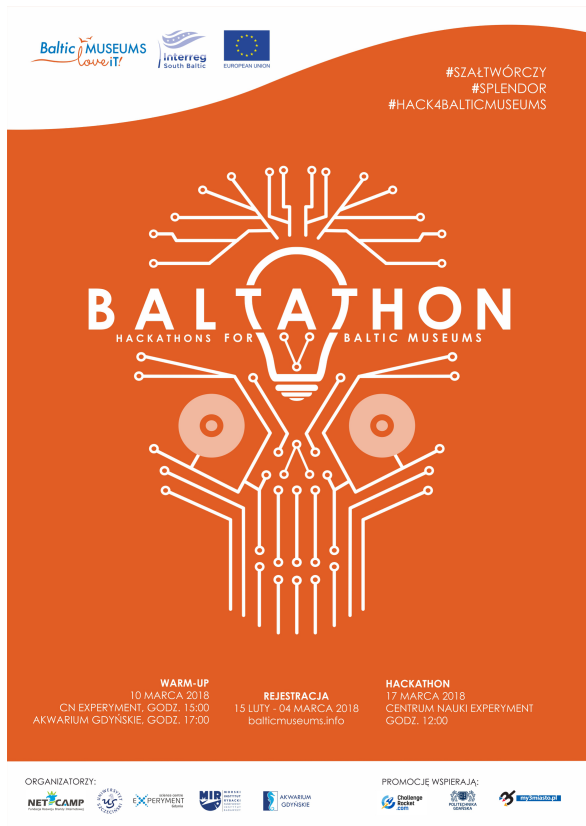


Figure 5 Key visual of Baltathon

4.4. Terms and conditions

The terms and conditions were most difficult to create, as they are venue and country specific. It is recommended to plan considerable time and use a small team along with a legal advisor for their development. From the first version, little adaptation was needed to transfer them to other countries to comply with local law and a different event situation.

For the winning teams, there was an extra contract, that they give the rights of their developments to the organizers.

Recommendation:

- Explain a short outline of terms and conditions in simple language on the registration website. Participants seem not to read the terms and conditions document.
- Terms and conditions should ask for handing over the ideas and materials developed to the hackathon hosts for all teams, not only from the winning team.
- You should identify what is the result of the hackathon: to write a code or if you "just" want the ideas at the end of the hackathon.
- If in an international setting: clarify language requirements during the hackathon

4.5. Contact to participants

It is recommended to have one person responsible for all communication with the participants.

The organizers should clearly divide the responsibilities among the team members as it is difficult for one person to be in charge of everything. A separate person should deal just with the content of the hackathon: participants, topics, presentation, mentoring, etc. Another person/persons should be responsible for infrastructure: catering, facilities, etc. Following information was given to participants at our final hackathon:

For the time of Baltathon, the organizer shall provide:

- catering and beverages
- power supply
- access to the Internet (WiFi)
- working space
- bathroom facilities (WC, showers)
- recreational space

The participants bring:

- Hardware: The Participants in Baltathon shall bring for themselves computer hardware, software or other tools required for participation in Baltathon (e.g. laptop, smartphone, adapters, etc.).
- Software: Both commercial software and freeware may be used. If commercial software is used, participants are obligated to possess the necessary licenses. The organizer does not provide any software.
- Recreation: During the event the organizer shall provide participants with sufficient recreational rooms, which can also be used as bedrooms. Participants are urged to bring sleeping bags and roll mats with them, as those are not provided by the organizer.
- Do not bring: The participants in Baltathon are hereby forbidden to consume alcoholic beverages, intoxicants or drugs during the event.

5. Recommendations - Infrastructure

5.1. Venue

If hosted by one museum only, most recommendable is to host the hackathon in the organizing institution, so the teams can experience the exhibition, watch real visitors and get thus inspiration. If hosted by several museums, a facility complying with the basic requirements is recommended.



5.1.1. Basic requirements

- All participants should work in one room. It is beneficial for the atmosphere and for networking. It would be good have extra rooms for teams to work in more quiet atmosphere, however, only bookable for a certain amount of time.
- All meetings, catering, work etc. should be done in one building. Rooms with daylight are preferable.
- Some food should be allowed in the main working room (snacks, coffee etc.).
- Bathrooms: adequate number of toilets, even shower if possible



- Rooms:
 - Hacking: large tables with seats for about 5-6 people, have comfortable seats or gymnastic balls
 - Opening/closing ceremony: classroom-style seating or cinema-style
 - Sleeping room (warm), mattresses would be good, but is not standard, participants bring sleeping gear
 - Preferably a separate chill room
 - Eat room/space
 - Room for meetings with mentors



- Access: check for wheelchair friendliness and accessibility even outside working hours
- Security: Check for security, so that participants can leave their belongings in the room including laptops

5.1.2. Equipment

WiFi needs to fulfill high demands and depends on the number of participants. In order to provide the participants with redundant multiple simultaneous internet connection, the organizers should have the equipment supporting more computers and other devices than the participating ones, as the demand for the bandwidth was tremendous in our experience.

- Electricity for many computers in one room, Power strip for each table with multiple plugs
- Projector
- Microphone for large rooms
- Flipcharts at all tables with pens
- Provide something to play/experience/move
- Provide a big table in the middle of the room with sticky notes, pens, etc., as a communication hub.

5.2. Working atmosphere

The working atmosphere differed. Participants expect a relaxed and open minded atmosphere, they also want to have fun during the time they devote to you as hackathon organizers.

In the first hackathons, programmers showed to work in a silent working atmosphere. They preferred to communicate online while working or go outside to discuss in order not to disturb others or to spread their ideas. All other visitors (e.g. project partners) who are not part of teams should have a separate area to not disturb the teams. Participants requested a communication channel during the event for the participants, so that e.g. questions could be shared easily, e.g. SLACK. However, this could be country specific. It was requested in Gdynia, but when provided in Klaipeda, the participants did not use it. Recommendable is to ask participants before the event.

In Greifswald hackathon, the atmosphere was lively with cross-team exchange. The focus here was on creativity, on networking and learning with all teams working on different topics that diminished the competitive angle of the event and could be a reason for this atmosphere. It created a sense of being part in something of value that is created by all teams. The moderation can add a large part to the working atmosphere.



5.3. Food

Participants need energy, good food is required. Do not provide fast-food, but a real breakfast, lunch and dinner. At night, some extra food is recommended e.g. pizza at around 1 a.m. At the working room, fruits, crackers, crisps, coffee, water, tea should be always available. Some teams requested energy drinks, but it is not a necessity to be provided by the organizers. Ask for specialties in the diet (vegan, vegetarian, other requests/allergies). It proved that there is a large need for a variety of vegetarian dishes.

5.4. Welcome packs

Welcome your participants and mentors with some gadgets, like t-shirts, mugs, bags or stickers. Fully branded, they also brand all the photos taken during the hackathon.

- Shirts (different sizes, male/female)
- Pens, Cups, USB Sticks, Bags
- Sticky notes, notebooks (could be branded, but not necessarily)
- Something from inviting organizations
- Entrance tickets to the inviting organizations for the participants to have a chance to come back after hackathon (so use event for promotion)



5.5. Sleeping arrangements

Most hackathons last over 24 hours and participants sleep little or not at all. For resting and sleeping arrangements, you should provide a room, participants bring sleeping bags/matresses. Having some chairs or resting sofas is very welcomed. Also consider that comfortable chairs are needed in the working room to allow for sitting such a long time.

5.6. Photo/Film

Documentation was done during the hackathons with professional photos and video. Key aspects:

- Make sure that the agreement regarding taking photos/ recording movie with participants is included in terms and conditions
- Recommendable: No photos during the night, only in the beginning and in the end
- Have a briefing of the film crew to not be intimidating to participants, go about with care and do not disturb
- Group photo after winners' announcement
- Professional video: opening ceremony, show branding, work of participants, interviews with organizers, mentors, participants, final ceremony



6. Recommendations - Project Plan Template

Project	Hackathon	Budget	Responsible	Details	Deadline	Done
H 1	Event Setup					
H 1.1	Event Concept - Preliminary					
H 1.1.1	Define targets for organizers					
H 1.1.2	Define expected results					
H 1.1.3	Define task for participants					
H 1.1.4	Define target group participants					
H 1.1.5	Define date					
H 1.1.6	Define venue					
H 1.1.7	Define set-up (Elements and Schedule)					
M 02	Preliminary Event Concept agreed					
H 1.2	Event Concept - Final					
H 1.2.1	Agree Co-Organizers, Mentors, Partners					
H 1.2.2	Develop Terms and conditions					
H 1.2.3	Agree Jury setup					
H 1.2.4	Develop decision criteria for Jury and briefing for jury					
M 03	Final Event Concept agreed					
H 2	Communication					
H 2.1	Participant Communication					
H 2.1.1	Develop Event Design					
H 2.1.2	Promote event on Facebook					
H 2.1.3	Promote event in other Online channels					
H 2.1.4	Promote event Offline					
H 2.1.5	Promote event via Networks					
H 2.1.6	Setup Website and RegistrationForm (incl. Terms and Conditions)					
M 04	Registration Form opened					
H 2.1.7	Send participation information to participants					
H 2.1.8	Conduct Participant interviews during event					
H 2.1.9	Fill Facebook during event					
H 2.1.10	Final Email to participants (thank you/survey)					
H 2.1.11	Conduct After Event Survey					
M 05	Participant Communication finalized					
H 2.2	Public Communication					
H 2.2.1	PR address list development					
H 2.2.2	Pre-event press releases					
H 2.2.3	After event press release					
H 2.2.4	Publish audio-visual materials on event website					
M 06	Press release with event date sent					
H 2.3	Partner Communication					
H 2.3.1	Manage Museum Partners					
H 2.3.2	Manage Co-organizers					
H 2.3.3	Manage Technical/Process Mentors					
H 2.3.3	Organize Patronage					
H 2.3.4	Organize Sponsorship					
H 2.3.5	Organize Jury					
M 07	Museum partners and co-organizers agreed					

H 3	Material and infrastrcuture					
H 3.1	Materials for participants					
H 3.1.1	Publish Pre-event materials by museums					
H 3.1.2	Aquire Prizes					
H 3.1.3	Aquire Welcomepacks					
M 08	Materials prepared					
H 3.2	Infrastructure					
H 3.2.1	Book Venue and clarify conditions					
H 3.2.2	Clarify sleeping arrangements					
H 3.2.3	Clarify security conditions					
M 09	Venue booked					
H 3.2.4	Organize Equipment (Flipcharts, Tables, Games, Wifi etc.)					
H 3.2.5	Organize Event Material (Wand, Rollup)					
H 3.2.5	Organize Catering					
M 10	Catering booked					
H 3.2.6	Organize Photo/Film for event					
H 3.2.7	Organize Helpers (incl. Nightshift schedule)					
H 3.2.8	Organize Logistics					
H 3.2.9	Organize Programme (DJ, Workshops)					
H 3.2.10	Produce signage for venue					
H 3.2.11	Produce name badges with agenda					
H 3.2.12	Develop presentation slides					
H 3.2.13	Prepare drawing envelopes for the draw of topics					
H 3.2.14	Prepare registration list for signature incl. Data protection					
H 3.2.15	Organize online voting for audience award					
M 11	Infrastructure available					
H 4	Project Management					
H 4.1	Management of the project					
H 4.2	Meeting organisation					
H 4.3	Lessons Learned Session					
H 4.4	Documentation					
M 12	Documentation finalized					
				-	€	

Figure 6 Project Plan Template

7. Recommendations - Feedback

Make a survey for feedback from the attendees and mentors and meet with the organizer team to reflect and to note down the lessons learned ☺

For the Baltathon events, we used both surveys, interviews and group discussions to gather feedback after the event.

7.1. Survey example 1 - participant

"We kindly ask you to complete this survey to let us know your opinion on the implementation of Baltathon. This will help us organize future hackathons.

**Required*

*Did the hackathon meet your expectations? **

*Did the mentors meet your expectations? **

Was the arrangement of the hackathon rooms adequate?

To what extent was WARMUP useful in working during the hackathon?

*How do you rate the event program? **

*How would you rate the implementation of the event? **

What was the biggest disadvantage of the event?

What was the biggest advantage of the event?

Why did you take part in the event?

Your comments."

7.2. Survey example 2 - participant

1. What motivated you to participate in the Baltathon event?
2. What expectations did you have of the Baltathon event?
3. Did the hackathon meet your expectations?
4. If question three is answered in the negative - what was missing?
5. What do you take home from the event?
6. What did you particularly like?
7. What did you not like at all?
8. Which suggestions for improvement do you have?
9. Did you know the participating museums before the event?
10. How did you feel about working with your museum mentor?
11. Would you like to visit the participating museums after the event?
12. How did you like the hackathon in Greifswald in total? /

13. Further comments
14. Age
15. Nationality

7.3. Survey example 3 – museum mentors

1. What motivated you to participate in "Baltathon: BalticMuseums Hackathon"?
2. Which expectations did you have for the event?
3. Where your expectations met?
4. If you answered „no“ to the foregoing question, which expectations were left open?
5. What do you take with your from the event?
6. Which insights derived from your work with the participants?
7. Did the Baltathon-Event create ideas, that you can use for your museum?
8. What did you especially like about the event?
9. What did you not like at all?
10. Which suggestions for improvement do you have?
11. Would you participate again with your museum in an event like Baltathon?
12. If you answered „no“ to the foregoing question, what are the major reasons?
13. Could you imagine to host such event in your museum?

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