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# TMAP

## Design Cards

Design of technology-  
mediated audience  
participation (TMAP) in  
Live Music

## THE TMAP DESIGN CARDS

The full deck contains 49 cards divided in 3 purple *Recommendation* cards, 6 red *Role* cards, 6 yellow *Motivation* cards, 12 blue *Influence* cards, and 22 green *Interaction* cards.

# TMAP Design Cards

Recommendations for Usage

Purpose

Generate ideas and concepts to create technology-mediated audience participation (TMAP) in live music or add participatory elements to a live performance.

Use the TMAP Design Cards either in a group or on your own.

Preparation

**Separate** the deck and make four piles, one of each colour. The coloured side of a card is its main side and always appears

face up. **Shuffle** each pile and have pens and paper prepared.

## THE CARD'S MAIN SIDE

The fully coloured side of a card is its main side. Always use the main side first when you draw a card and do not turn around a card immediately.

## USE A CARD

Read the *Challenge* and the optional *Explanation* on the main side carefully to trigger your imagination. Do not turn around a card immediately after you draw it! Always try to think on the basis of the *Challenge* and the *Explanation* first.

## TURN AROUND A CARD

You may turn around a card if you need further *Suggestions*.

# Multi Person Mode

Recommendations for Usage

Preparation

Every person draws a role card (red) which defines the person's role.

Everybody keeps thinking for a moment about the role and refines it quietly.

Hint

If the **Group Size** extends to six people or more, we recommend to make smaller groups of three or four people each.

## FIRST ROUND

Everybody **draws one card** in addition to the *Role* card (red). The person who starts takes an *Influence* card (blue), the second one an *Interaction* card (green), the third one a *Motivation* card (yellow), the fourth an *Influence* card, and so on.

Now everyone tries to **create an idea** based on the *Challenge* written on the card and the further *Explanation* below.

Do not **turn around a card** immediately but do so if you need further *Suggestions* while you create your idea.

This is followed by a **group discussion** where everyone contributes ideas based on their own cards. Use pen and paper to make notes and sketches.

## FURTHER ROUNDS

After the first round, further rounds may follow. At this point **cards may be discarded** if wanted to draw a new card and even from another colour. Discarded cards may be either fully discarded from the game (of course only for this session) or discarded for later use by dropping it on the related sketches or notes of the finished previous round.

# Single Person Mode

Recommendations for Usage

Preparation

For using the TMAP Design Cards alone, read the Multi Person Mode instructions first and in addition the alterations on the back side of this card.

Hint

In Single Person Mode we recommend to use **Pen and Paper** to sketch your ideas instead of just thinking.

## ALTERATIONS

You may draw a *Role* card (red) but you may also **define a role** on your own.

Act as if you were doing a session in a group but **draw all cards by yourself**. First, draw an *Influence* card (blue), then an *Interaction* card (green), then a *Motivation* card (yellow), then another *Influence* card and so on.

However, **do not draw more than one card at once**. Every time when you draw a card, think thoroughly about the *Challenge*, read the *Explanation* and finally turn the card to make use of the *Suggestions*.

Always **make notes and sketches** to write down your ideas before you draw another card.



Role. Who are you?

Challenge

Consider your direct involvement in the performance as a performer

Explanation

The Role you have is defined by a certain

**Involvement.** Various kinds and degrees of involvement motivate stakeholders to be part of a participatory performance at some point.

## PERFORMER

Imagine your are an artist who plays an instrument or does live coding to create music is involved in the interaction for instance.

# Role. Who are you?

Challenge

Consider your direct involvement in the performance as a spectator

Explanation

The Role you have is defined by a certain

**Involvement.** Various kinds and degrees of involvement motivate stakeholders to be part of a participatory performance at some point.

## AUDIENCE MEMBER

Imagine yourself among the spectators that are involved while they attend the performance, prior to it or afterwards, for instance.

# Role. Who are you?

Challenge

Consider your direct involvement in the performance as an assistant or helper

Explanation

The Role you have is defined by a certain

**Involvement.** Various kinds and degrees of involvement motivate stakeholders to be part of a participatory performance at some point.

## ASSISTANT OR HELPER

Imagine you are involved as an assistant or helper, e.g. someone responsible for sound, light, safety or ticket collection.

# Role. Who are you?

Challenge

## Consider your indirect involvement in the performance as a composer

Explanation

The Role you have is defined by a certain

**Involvement.** Various kinds and degrees of involvement motivate stakeholders to be part of a participatory performance at some point.

## COMPOSER

Imagine you are a composer who writes a song considering audience participation for its later performance even if not involved as a performer.



Role. Who are you?

Challenge

# Consider your indirect involvement in the performance as a manager

Explanation

The Role you have is defined by a certain **Involvement**. Various kinds and degrees of involvement motivate stakeholders to be part of a participatory performance at some point.

## MANAGEMENT

Imagine yourself in the management that utilises audience participation for strategic feedback or promotional aspects for instance.

Role. Who are you?

Challenge

Consider your  
indirect involvement  
in the performance  
as a creator

Explanation

The Role you have is defined by a certain

**Involvement.** Various kinds  
and degrees of involvement motivate  
stakeholders to be part of a participatory  
performance at some point.

## CREATOR

Imagine you do the actual creation or realisation as a designers or programmers to initiate the audience participation.

# Motivation.

Why are participants involved?

Challenge

Include someone for social reasons

Explanation

The Motivation could be led by a certain

**Goal.** Different goals can drive the motivation to establish audience participation in a live performance.

## ENTERTAINMENT

What if playing an entertaining game is necessary to participate?

## FEELING OF TOGETHERNESS

What if participants get in touch with each other by finding random peers or within groups of friends?

## ACTIVITY

What if moving the body such as jumping or stretching is necessary to participate?

## AWARENESS

What if the participation changes the perception of the whole performance and affects issues other than music?

# Motivation.

Why are participants involved?

Challenge

Include someone for artistic reasons

Explanation

The Motivation could be led by a certain

**Goal.** Different goals can drive the motivation to establish audience participation in a live performance.

## CREATIVITY

What if creative aspects drive the motivation of the artist to let people participate whether they are planned or spontaneous?

## INSPIRATION

What if the participation of people is seen as source of inspiration to either enrich or limit artistry for instance?

## ENGAGEMENT

What if the participation affects the people's behaviour and how they are engaged in a motivating or deterrent way for instance?

## CHALLENGE

What if the participation challenges a particular paradigm, such as switched off mobile phones during concerts or sitting quietly on a chair the whole time?



# Motivation.

Why are participants involved?

Challenge

Include someone for academic reasons

Explanation

The Motivation could be led by a certain

**Goal.** Different goals can drive the motivation to establish audience participation in a live performance.

## BEHAVIOUR

What if the analysis of a certain crowd behaviour (e.g. among the audience, the artists or both) is the reason for letting people participate?

## MUSIC

What if the analysis of the music itself or musical processes such as composing a song is the reasons for enabling participation?

## ENGINEERING

What if the creation and deployment of new systems or the use of a certain technology drives the motivation of a participatory performance?

# Motivation. Why are participants involved?

Challenge

Include someone for commercial reasons

Explanation

The Motivation could be led by a certain

**Goal.** Different goals can drive the motivation to establish audience participation in a live performance.

## MARKETING

What if the concept for interaction includes giveaways or digital gadgets for advertising merchandising products?

## DATA

What if audience participation helps to get particular information about customers (i.e. fans) for further use?

# Motivation.

Why are participants involved?

Challenge

Consider issues that constrain the actual realisation

Explanation

The Motivation could be led by a certain **Constraint**. Possible constraints might limit the motivation to establish audience participation in a live performance.

## TECHNICAL FEASIBILITY

What if the require technology is not available or not appropriate for particular settings (e.g. performances in huge venues)?

## COSTS

What if the costs to realise a concept for audience participation are inappropriately high for instance?

# Motivation.

Why are participants involved?

Challenge

Consider issues that constrain the actual execution

Explanation

The Motivation could be led by a certain **Constraint**. Possible constraints might limit the motivation to establish audience participation in a live performance.

## ACCEPTANCE

What if the audience or the musicians deny the participatory elements for certain reasons?

## LEGAL

What if copyright or privacy issues get in the way of the realisation?

## ABILITY

What if the concept requires special skills that, for instance, prevent too many people from participating?



**Influence.** What is the target of participation?

Challenge

## Influence temporal characteristics of the music

Explanation

The Influence could be on something

**Musical.** Certain musical characteristics and their creation can be the target of influence of a participating audience.

## TEMPO

What if the tempo is changed and the music is getting slower or faster according to the participation?

## METER

What if the meter of a song is influenced, such as fourth-fourth time or waltz time?

## BEAT

What if the beat is influenced by changing accentuation for instance?

## RHYTHM

What if the rhythm (e.g. note lengths) is subject to the participation?

**Influence.** What is the target of participation?

Challenge

**Influence the sound considering basic aspects**

Explanation

The Influence could be on something

**Musical.** Certain musical characteristics and their creation can be the target of influence of a participating audience.

## PITCH

What if the participation affects the pitch which might be definite (e.g. piano), variable (e.g. violin) or indefinite (e.g. cymbal) for instance?

## DYNAMICS

What if the dynamics of a performed piece of music are influenced, e.g. the loudness or softness?

## TIMBRE & TONE COLOUR

What if the timbre or tone colour (e.g. bright, dark) of the sound itself is changed by the participation?

**Influence.** What is the target of participation?

Challenge

**Influence the sound considering compositional aspects**

Explanation

The Influence could be on something

**Musical.** Certain musical characteristics and their creation can be the target of influence of a participating audience.

## MODE

What if the participation affects the mode, for instance, changing the scale from major to minor?

## HARMONY

What if harmonic structures, such as triads or chords are influenced?

## MELODY

What if the melody is changed in terms of an improvised variation or a solo by the participants?

## TEXTURE

What if the texture varies due to the participation which affects the way melodic, rhythmic and harmonic elements are intertwined?

**Influence.** What is the target of participation?

Challenge

## Influence the creation of sound

Explanation

The Influence could be on something

**Musical.** Certain musical characteristics and their creation can be the target of influence of a participating audience.

## INSTRUMENT OR VOICE

What if an instrument or the voice becomes the target of participation, for instance, a guitar, a choir, or the sampling or looping with a computer?

## PLAYING OR SINGING

What if the playing or singing becomes the target of participation, for instance, the instruction to a performer to play louder, faster or another solo?

## EFFECT

What if sound effects (e.g. delay, distortion) or any combination are affected by the participation?

## SPATIALISATION

What if spatialisation plays a role, such as the number of different sound sources that exist (e.g. stereo, surround) and their distribution in the room (e.g. acousmonium)?



**Influence.** What is the target of participation?

Challenge

## Influence structural characteristics of music

Explanation

The Influence could be on something

**Musical.** Certain musical characteristics and their creation can be the target of influence of a participating audience.

## FIGURE

What if a figure (e.g. riff, phrase) is influenced?

## FORM

What if the form of a song, such as the overall layout of the composition or the number of chorus repeats are influenced?

## NOTATION

What if the notation is affected by the participants whether it is as modern staff notation or as written descriptive notation, for instance?

**Influence.** What is the target of participation?

Challenge

## Influence conceptual characteristics of music

Explanation

The Influence could be on something

**Musical.** Certain musical characteristics and their creation can be the target of influence of a participating audience.

## GENRE

What if the musical genre becomes the target of participation such as classical music, electroacoustic music or noise?

## STYLE

What if the style of music is influenced, for instance, by describing it (e.g. “music for a particular mood”, “christmas music”)?

**Influence.** What is the target of participation?

Challenge

Consider the location of appearance where the influence happens

Explanation

The Influence could be on something

**Visual.** Visual aspects might be the target of influence in a participatory performance.

## ON STAGE

What if elements on stage such as spotlights or video projections are affected?

## OFF STAGE

What if elements off stage are affected, for instance, directly among the audience members or their surrounding area?

## OFF VENUE

What if the influence happens off venue, e.g. in a live stream or on social media?

**Influence.** What is the target of participation?

Challenge

Consider different types of visual elements that might be influenced

Explanation

The Influence could be on something

**Visual.** Visual aspects might be the target of influence in a participatory performance.

## AMBIENCE

What if ambient elements such as light or fog are affected?

## INFORMATION

What if the participation is visualized as text, voting charts or pictures, for instance?



**Influence.** What is the target of participation?

Challenge

Consider the influence on perceptible physical elements

Explanation

The Influence could be on something

**Physical.** Several physical elements can be considered to be the target of an influencing audience.

## HAPTIC

What if the influence becomes haptic, for instance through a vibrating phone, temperature, wind or powerful subwoofers?

## SMELL

What if the influence affects the smell such as scented fog or smoke?

**Influence.** What is the target of participation?

Challenge

Consider the influence on concrete physical elements

Explanation

The Influence could be on something

**Physical.** Several physical elements can be considered to be the target of an influencing audience.

## TEMPORARY

What if the influence affects concrete physical elements temporarily such as moving the stage, rise platforms, moving a drumkit, moving spotlights or the movement of a dancer?

## PERMANENT

What if the influence affects permanent physical elements such as a unique live record of the show or other special products which are given away right after a performance?

**Influence.** What is the target of participation?

Challenge

**Influence the content considering the lyrics**

Explanation

The Influence could be on something

**Contentual.** Textual content might be the target of participation when an audience is included in a performance.

## REPRODUCTION

What if the influence addresses the reproduction of lyrics such as letting spectators sing along existing lyrics?

## CREATION

What if the influence affects the creation of lyrics, for instance, by defining the content of a song or by creating actual words or phrases?

**Influence.** What is the target of participation?

Challenge

**Influence the content considering information**

Explanation

The Influence could be on something

**Contentual.** Textual content might be the target of participation when an audience is included in a performance.

## NUMBERS & STATISTICS

What if numbers and statistics are subject to the influence, such as letting spectators vote or rate something or count the number of people according to a certain behaviour?

## TEXT

What if textual information is part of the influence, for instance, real-time chat conversations or social media messages?

## MEDIA

What if the influence contains any kind of media, such as photos or videos taken by the audience?



**Interaction.** How does participation happen?

Challenge

Consider spatial movement for interaction

Explanation

The Interaction could be dependent on **Space.** Spatial aspects might shape the nature and ways of interaction.

## SITTING

What if sitting spectators interact by clapping or doing a mexican wave, for instance?

## STANDING

What if standing spectators interact by tapping with the foot or by jumping, for instance?

## MOBILE

What if spectators are mobile which allows them to walk around or dance, for instance?

**Interaction.** How does participation happen?

Challenge

Consider the spatial setting for interaction

Explanation

The Interaction could be dependent on **Space.** Spatial aspects might shape the nature and ways of interaction.

## LOCATION

What if the actual location plays a role (e.g. indoor, outdoor)?

## SIZE

What if the size of the location makes a difference (e.g. club, concert hall, stadium, living room)?

## TIME OF DAY

What if interaction is dependent on the time of day (e.g. sunlight, night)?

**Interaction.** How does participation happen?

Challenge

Consider the spatial distribution of interacting participants

Explanation

The Interaction could be dependent on **Space.** Spatial aspects might shape the nature and ways of interaction.

## ON-SITE

What if interaction depends on the on-site distribution of the spectators at the venue (e.g. front of stage, in the back)?

## REMOTE

What if interacting participants are distributed remotely (e.g. through a live stream over the internet)?

**Interaction.** How does participation happen?

Challenge

Consider the quantity of interacting participants

Explanation

The Interaction could be dependent on

**Space.** Spatial aspects might shape the nature and ways of interaction.

## LARGE-SCALE

What if a huge audience is present, for instance more than 1000?

## SMALL-SCALE

What if a small audience is present (e.g. a couple of 100 or less)?



**Interaction.** How does participation happen?

Challenge

Consider the chronological order as an aspect of interaction

Explanation

The Interaction could be dependent on **Time.** Temporal considerations can characterise the actual interaction.

## SYNCHRONOUS

What if the interaction happens in real-time, for instance, during the performance?

## ASYNCHRONOUS

What if the interaction happens before or after to the performance (e.g. vote for setlists, provide personal data to be used in the performance, rate songs afterwards)

# Interaction.

How does participation happen?

Challenge

## Consider accuracy for the interaction

Explanation

The Interaction could be dependent on

**Time.** Temporal considerations can characterise the actual interaction.

## TIME CRITICAL

What if the interaction is time critical (e.g. sound synthesis which should have none or very low latency)?

## LATENCY TOLERANT

What if the interaction is latency tolerant, for instance, data collection of audience opinion or behaviour?

**Interaction.** How does participation happen?

Challenge

Consider interaction in terms of acoustics that is humanly generated

Explanation

The Interaction could be dependent on

**Acoustics.** Acoustical elements and considerations might be relevant for interaction.

## VOICE

What if interaction is based on audible sound produced by the human voice (e.g. singing along, shout, cheer)?

## GESTURES

What if interaction is based on audible sound produced by human gestures (e.g. clap, snip, clomp)

**Interaction.** How does participation happen?

Challenge

Consider interaction in terms of acoustics that is artificially generated

Explanation

The Interaction could be dependent on

**Acoustics.** Acoustical elements and considerations might be relevant for interaction.

## CENTRALIZED

What if audible interaction happens centralized (e.g. through PA speakers)

## DECENTRALIZED

What if audible interaction happens decentralized (e.g. through the spectators' mobile phones)



**Interaction.** How does participation happen?

Challenge

Consider interaction based on expressive emotion

Explanation

The Interaction could be dependent on

**Emotion.** An interaction can be driven by emotional aspects.

## VERBAL

What if emotional interaction happens verbal (e.g. laughing, shouting)?

## NON-VERBAL

What if interaction is based on non-verbal emotion, such as facial expressions or gestures?

**Interaction.** How does participation happen?

Challenge

Consider interaction based on physiological emotion

Explanation

The Interaction could be dependent on **Emotion.** An interaction can be driven by emotional aspects.

## OBVIOUS

What if emotional interaction happens obvious, for instance, jumping or screaming spectators?

## SUBTLE

What if interaction is based on subtle emotion (e.g. the heart rate, the skin conductance)?

# Interaction.

How does participation happen?

Challenge

Consider the relationship of the interacting participants

Explanation

The Interaction could be dependent on

**Individuals.** An interaction might be dependent on the role the participants have for participation.

## COLLABORATIVE

What if all spectators have to act or achieve something collaboratively (e.g. singing the same phrase, bouncing a balloon)?

## COMPETITIVE

What if spectators are competing, such as who cheers louder?

## INDEPENDENT

What if spectator act independently, for instance, everybody makes a secret choice/ vote at the same time?

# Interaction.

How does participation happen?

Challenge

Consider the unit setting of the interacting participants

Explanation

The Interaction could be dependent on

**Individuals.** An interaction might be dependent on the role the participants have for participation.

## INDIVIDUAL

What if all spectators interact individually, for instance, by operating their own mobile phones?

## IN GROUPS

What if spectators can or have to form groups to interact, for instance, all people in the front, middle and back of the venue?

## ALL TOGETHER

What if all spectators interact together as a whole (e.g. tracked visually, sound level measurement)



**Interaction.** How does participation happen?

Challenge

Consider the identification of the interacting participants

Explanation

The Interaction could be dependent on

**Individuals.** An interaction might be dependent on the role the participants have for participation.

## PUBLIC

What if the interaction is public and every spectator's participation is somehow visible or traceable (e.g. cheering, waving hands)?

## ANONYMOUS

What if the interaction happens anonymous, for instance, by measuring a certain behaviour or using smartphones?

## SEMI-PUBLIC

What if the interaction is semi-public, for instance, everybody has to register at the entrance while the actual interaction is not traceable by the audience?

**Interaction.** How does participation happen?

Challenge

Consider a playful approach for interaction

Explanation

The Interaction could be dependent on **Knowledge or Skill.** A certain knowledge or skill can be taken into account for participation.

## ABILITY-ORIENTED

What if a playful interaction is ability-oriented, similar to GuitarHero or SingStar?

## ENTERTAINMENT-ORIENTED

What if a playful interaction is entertainment-oriented where the audience plays a game with artefacts, for instance?

**Interaction.** How does participation happen?

Challenge

Consider a methodical approach for interaction

Explanation

The Interaction could be dependent on

**Knowledge or Skill.** A certain knowledge or skill can be taken into account for participation.

## APPLY/USE CERTAIN KNOWLEDGE

What if a special knowledge is required for interaction, e.g. that the participants are musicians/can play music?

## LEARNING APPROACHES

What if the interaction includes a learning approach, for instance, learning by doing where the participants learn something step by step during the performance?

## INTUITIVE

What if the interaction expects an intuitive behaviour? (e.g. if you give someone something that looks like a pipe in a musical context, people will most probably blow in it to try it out)

# Interaction.

How does participation happen?

Challenge

Consider a random approach for interaction

Explanation

The Interaction could be dependent on

**Knowledge or Skill.** A certain knowledge or skill can be taken into account for participation.

## TOTALLY UNPREDICTABLE

What if the interaction includes random elements that are totally unpredictable, such as rolling a dice?

## SOMEHOW PREDICTABLE

What if the interaction includes somehow predictable elements, for instance, assumed human behaviour patterns?



**Interaction.** How does participation happen?

Challenge

Consider the transparency of the feedback given to the interacting participants

Explanation

The Interaction could be dependent on

**Feedback.** Feedback as a central element of interaction can be considered differently.

## OBVIOUS

What if the feedback of the interaction is obvious? (e.g. visual feedback as figures or charts of every individual on a big screen)

## SUBTLE

What if the feedback of the interaction is subtle? (e.g. the measurement of a particular behaviour, such as the movement of the spectators throughout a performance, is not perceived by anyone in the same way or even any way)

# Interaction.

How does participation happen?

Challenge

## Consider the target of the feedback

Explanation

The Interaction could be dependent on

**Feedback.** Feedback as a central element of interaction can be considered differently.

## INDIVIDUALS

What if everyone gets individual feedback, for instance, on a smartphone or a wristband?

## GROUPS

What if groups of spectators get different feedback? (e.g. only people in the front of the stage get feedback of their interaction or different feedback for sitting and standing spectators)

## NONE

What if no one gets any feedback? (e.g. if something is measured/observed during a performance and only used later for analysis)

## ALL

What if everybody gets the same feedback? (e.g. the whole audience hears an influenced sound or votes of the spectators are screened publicly on stage)

**Interaction.** How does participation happen?

Challenge

Consider the perspective of the interacting participants

Explanation

The Interaction could be dependent on **Action**. The way interacting participants might act or react may be varied for participation.

## ACTIVE

What if the interaction requires an active behaviour, such as controlling certain parameters of a device or doing particular gestures?

## PASSIVE

What if the interaction happens passively? (e.g. visual recognition is used to observe the audience's behaviour)

**Interaction.** How does participation happen?

Challenge

Consider the method that characterizes an interaction

Explanation

The Interaction could be dependent on **Action.** The way interacting participants might act or react may be varied for participation.

## MODIFYING

What if the interaction modifies something existing, such as changing sound effect parameters of an instrument?

## CREATING NEW

What if the interaction creates something new from scratch? (e.g. all spectators perform together to create music collaboratively)

## ADD SOMETHING

What if the interaction adds something new to something existing? (e.g. the audience is considered as an additional “musician”)



# Interaction.

How does participation happen?

Challenge

Consider the artefact that characterize an interaction

Explanation

The Interaction could be dependent on **Action**. The way interacting participants might act or react may be varied for participation.

## USING OBJECTS

What if the interaction requires special objects, such as a traceable marker, a phone or throwing things around?

## HUMAN BODY

What if the interaction requires the human body? (e.g. moving arms, clapping, singing)

# Interaction.

How does participation happen?

Challenge

## Consider the depth of interaction

Explanation

The Interaction could be dependent on **Action**. The way interacting participants might act or react may be varied for participation.

## HOLISTIC

What if the interaction affects certain aspects holistically, for instance, audience members join the band on stage to play a whole song, the setlist for a concert is created collaboratively, or the ambience of the light during the whole show is influence

## PARTLY

What if the interaction affects a performance party, for instance, the audience decides about the encore at the end of the concert, the audience participates only during the chorus, or a single spectator sings some lines of verses?