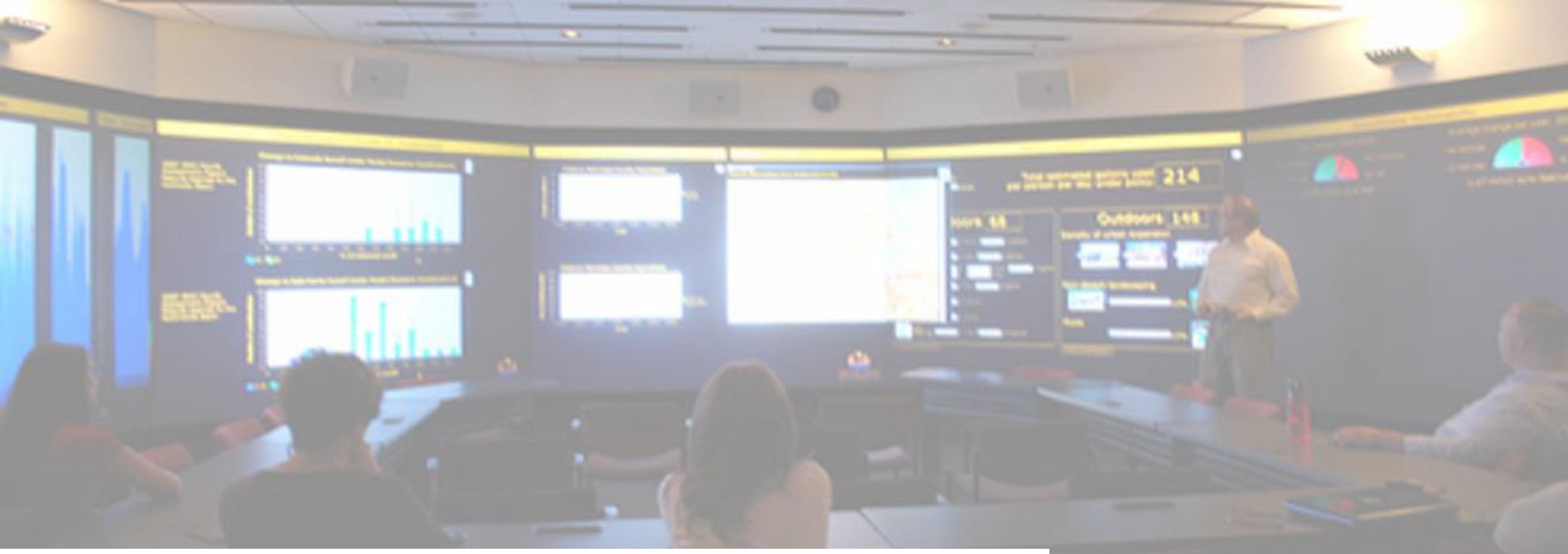


WP 4

AI FORA approach

VolkswagenStiftung

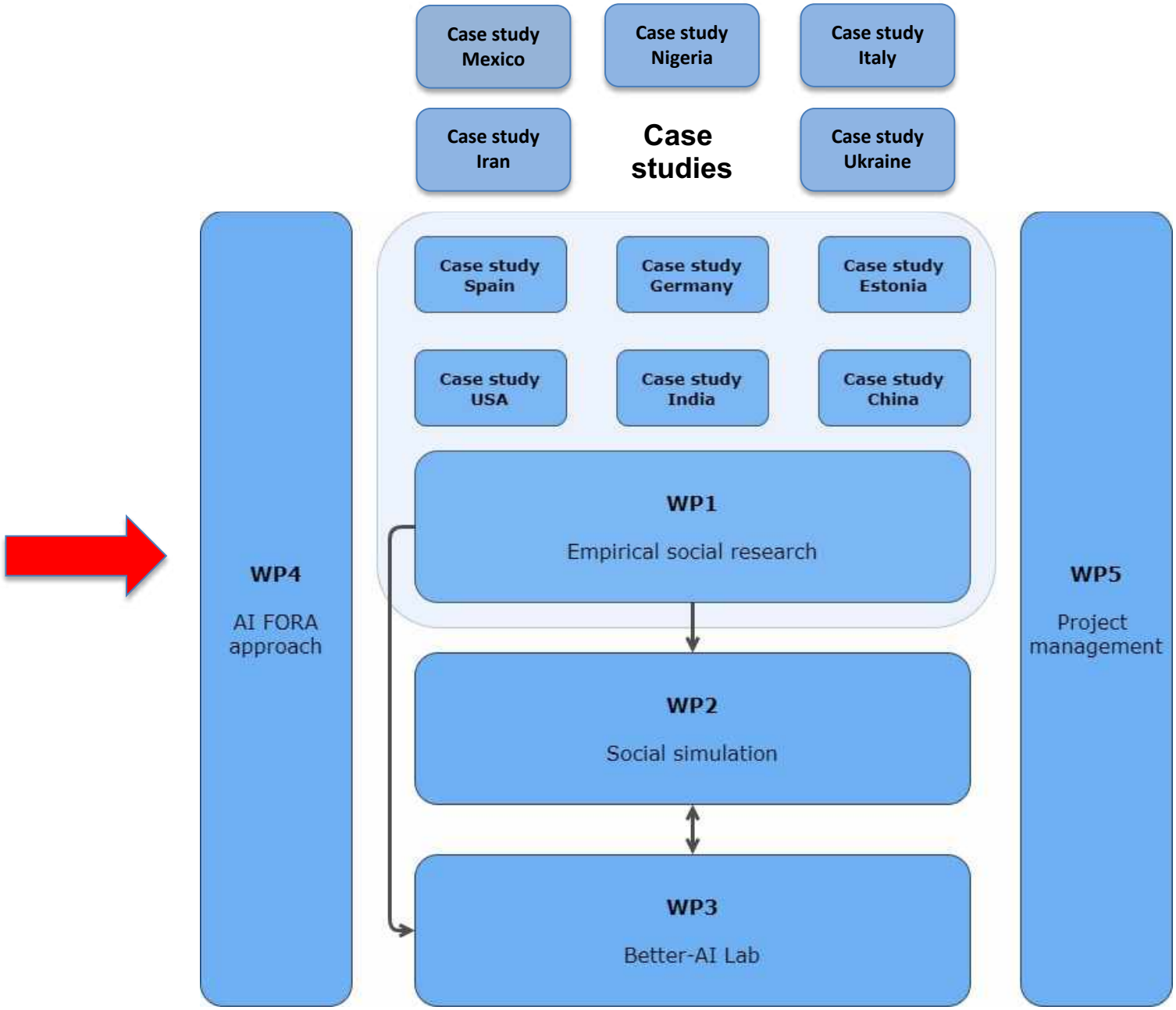
AI FORA

artificial intelligence for assessment

https://www.ai-fora.de

JG|U

WP 4


Case study Mexico
Case study Nigeria
Case study Italy
Case study Iran
Case studies
Case study Ukraine
Case study Spain
Case study Germany
Case study Estonia
Case study USA
Case study India
Case study China
WP1
Empirical social research
WP4
AI FORA approach
WP2
Social simulation
WP3
Better-AI Lab
WP5
Project management

The project in a nutshell

How can better AI technology be created
that engages with societal norms
and values of stakeholders,
and that is responsive to
socio-cultural settings and societal needs?

AI FORA
artificial intelligence for assessment

AI FORA analyses value and context dependency in AI-based social assessment for social service provision (fairness concepts)

comparing eleven countries as case studies,

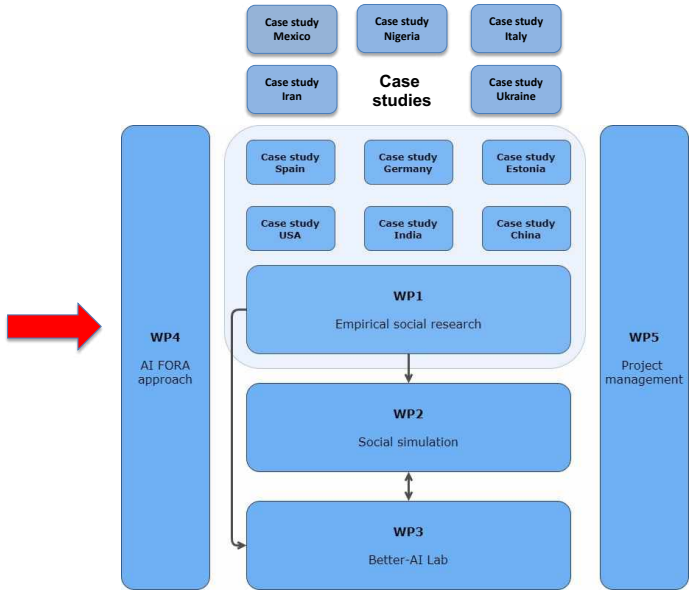
identifying welfare gaps in current systems,

and informing policy on contextualised AI systems that are responsive to value dynamics in societies

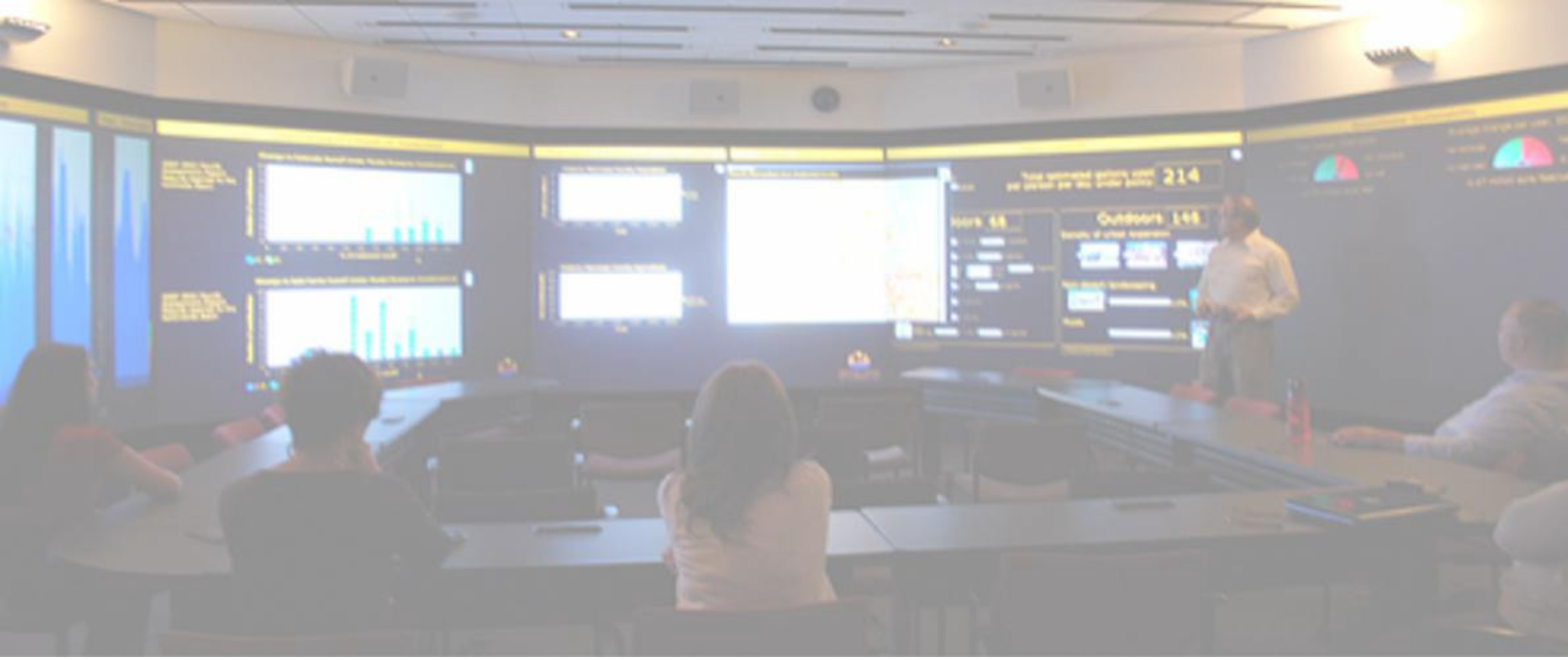
JG|U

Main project challenges

- Heterogeneity of case studies / comparability of models
- Working with vulnerable groups on sensitive topics
- Specifying/measuring the impact of values/culture
- Methods for stakeholder-driven technology production
- Theoretical framework behind
- Empirical access to data
- Future scenarios
- From theory to practice
- Legacy of project



WP 4



Cultural comparison framework(s)

AI FORA cultural comparison approach

AI FORA makes use of cultural comparison frameworks

- Use of AI is highly influenced by the environment it is embedded in
- Cultural values affect the use of AI
  - Domains of implementation and implementation strategies depend on social priorities, cultural values, etc.
  - The assessment of AI use depends on cultural values that determine social justice

This requires an analysis of cultural values.

Cultural comparison happens in-between worlds

AI FORA cultural comparison approach

- A globalised lifestyle that streamlines living conditions on the planet (the IKEA-world)
- Traditional values and stereotypes that influence the perception of people belonging to a specific culture
- Universal properties that are the same everywhere

And mostly:

- The expression of universal properties transported by a globalised lifestyle, but affected by specific traits of a group

Cultural comparison frameworks: Inglehart-Welzel and Hofstede

Ingleghart/Welzel

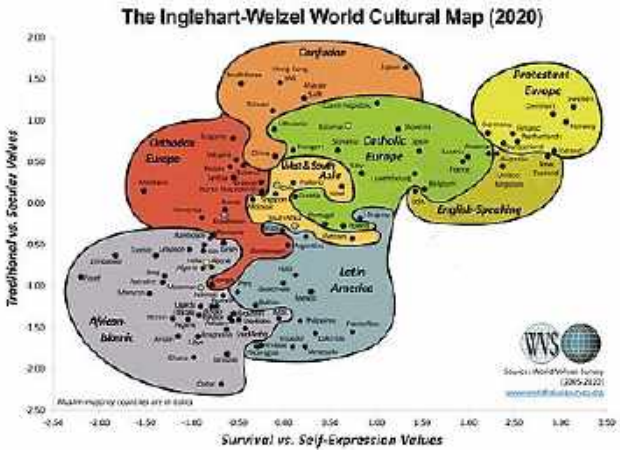
Universal properties: Dimensions

(self expression vs. survival X traditional vs. secular)

Streamlining effect: The post-material value shift

(countries tend to move from bottom-left to top-right)

Particularities: Clustering of countries according to their position



Hofstede

Universal properties: Dimensions

(indulgence, masculinity, long-term orientation, power distance,

individualism, uncertainty avoidance)

Streamlining effect: ?

Particularities: Scores of countries

AI FORA cultural comparison approach

Cultural comparison, stereotypes and reality

The case studies of AI FORA are distributed according to both frameworks

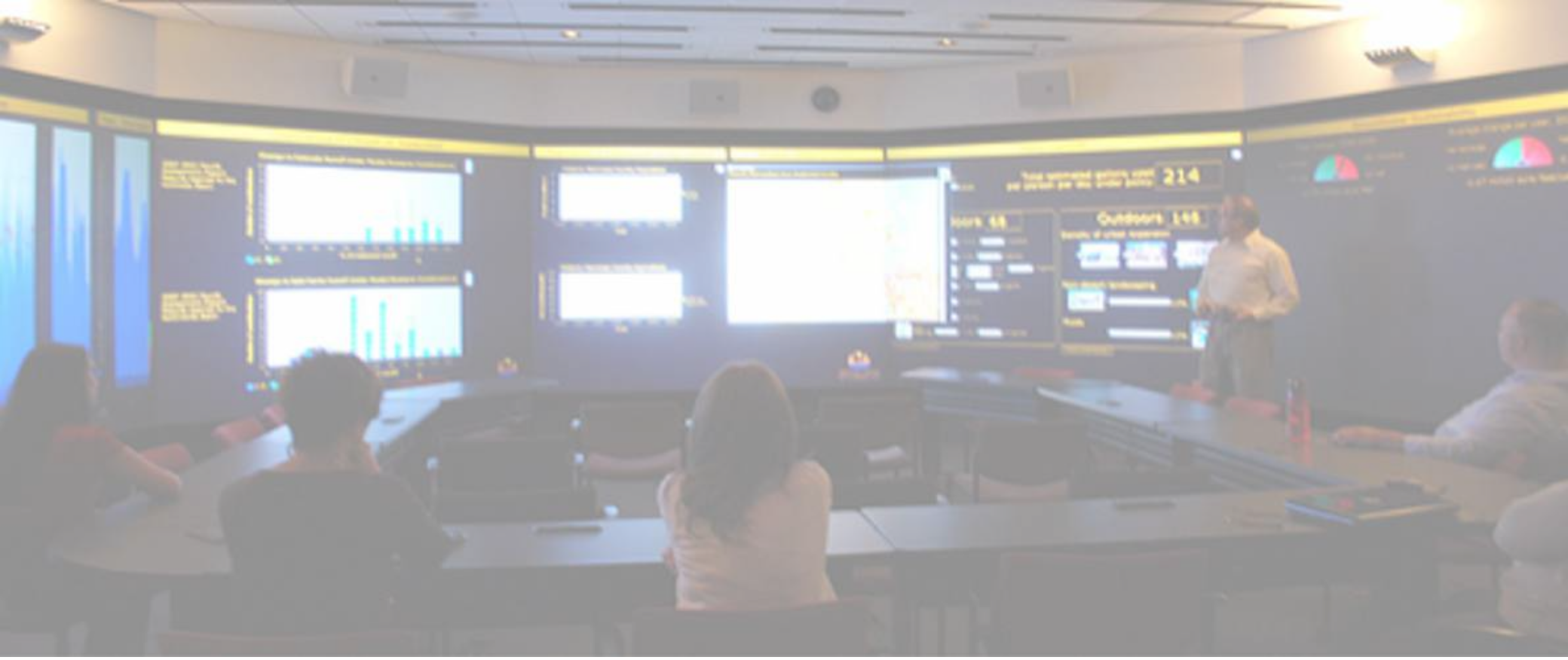
- Every cluster of Inglehart-Welzel is represented
- The mean difference between the scores of the AI FORA case study countries in Hofstede's dimensions is very close to the mean difference between all countries

Shortcomings

- Granularity and differences within countries (different regions, diversity, differences between milieus, etc.)
- Inner tendencies of the frameworks: Inglehart-Welzel's focus on the post-materialist revolution or Hofstede's outdated notions like masculinity vs. femininity

AI FORA cultural comparison approach

Cultural comparison, stereotypes and reality



Common research design

11 case studies to investigate how cultural values affect AI-based social assessment for public service provision

- Huge heterogeneity / issue of comparability
- Small budgets

Nation state as unit of analysis: Comparing service provision in national welfare systems

- "State" as the common legal and administrative framework
- Be aware of: different cultures within a state
- "State" just as container for negotiating culturally specific administrative practices in social welfare provisions (Hofstede 2003).

Common research questions addressed by all case studies

Before/after AI

1. How were social assessment routines for distributing social services organised and institutionalised in different international societies prior to any AI use, which societal norms and values were used as reference for these social assessment routines, and which policies or institutional infrastructures supported these context-specific social assessment practices?

2. How and to what degree have conventional social assessment processes in different international societies been replaced or changed by AI, where do non-AI and AI processes differ, especially with regard to implemented social assessment values, and how do societal stakeholders, policy, public discourse and institutional infrastructures respond?

AI and the desired societal scenario of the future

How can better, i.e. more responsible, AI technology that engages with societal norms and values of stakeholders, and that is responsive to sociocultural settings and societal needs be created?

Common methods

- Quantitative social research (e.g. survey questionnaires, social network analysis etc.)
- Qualitative social research (e.g. document and discourse analysis, semi-structured interviews, participatory observation etc.)
- Participatory research (e.g. focus groups, multi-stakeholder workshops, gamification, participatory systems mapping etc.)

Common outputs produced by all case studies

- Initial working paper
  - Literature review of the domain
  - Socio-technical map of the domain: actors, networks, processes
- Toy model prototype (demonstrator) of the existing technological system
- Toy model prototype of the desired technological system (participatory modelling)
- Input for AI FORA work packages 2 and 3
- Research publications

Common mixed-methods research design for computer science applied in all case studies

- Desk research to explore the current technological state of the art in the chosen domain and its development with reference to international benchmarking
- Desk research to explore databases and systems in place
- Prototyping a toy system imitating the national system in place using the demonstrator of AI FORA
- Prototyping an AI social assessment system in cooperation with the social sciences
- Experimentations with both prototypes followed by interdisciplinary assessment

Common mixed-methods research design for social sciences applied in all case studies

- Desk research to explore the current social state of the art in the chosen domain and its development in a comparative perspective
- Desk research to explore and analyse literature and data available
- Empirical social research (*in italics* mixture of quantitative and qualitative methods)
- *Quantitative research* to get an overview on the structural components of the social system in the chosen domain (actors, resources, inputs, outputs, processes, performance, stakeholder networks etc.)
- *Qualitative research* to get some insights into the processes and mechanisms of the social system by researching the behavior and attitudes of relevant actors (incentives, orientations, norms, values, strategies, intentions, barriers, limitations, visions, options etc.)
- Interacting with technical science for prototyping an AI social assessment system according to study results
- Experimentations with prototype followed by interdisciplinary assessment

Example for according milestones in case study contracts

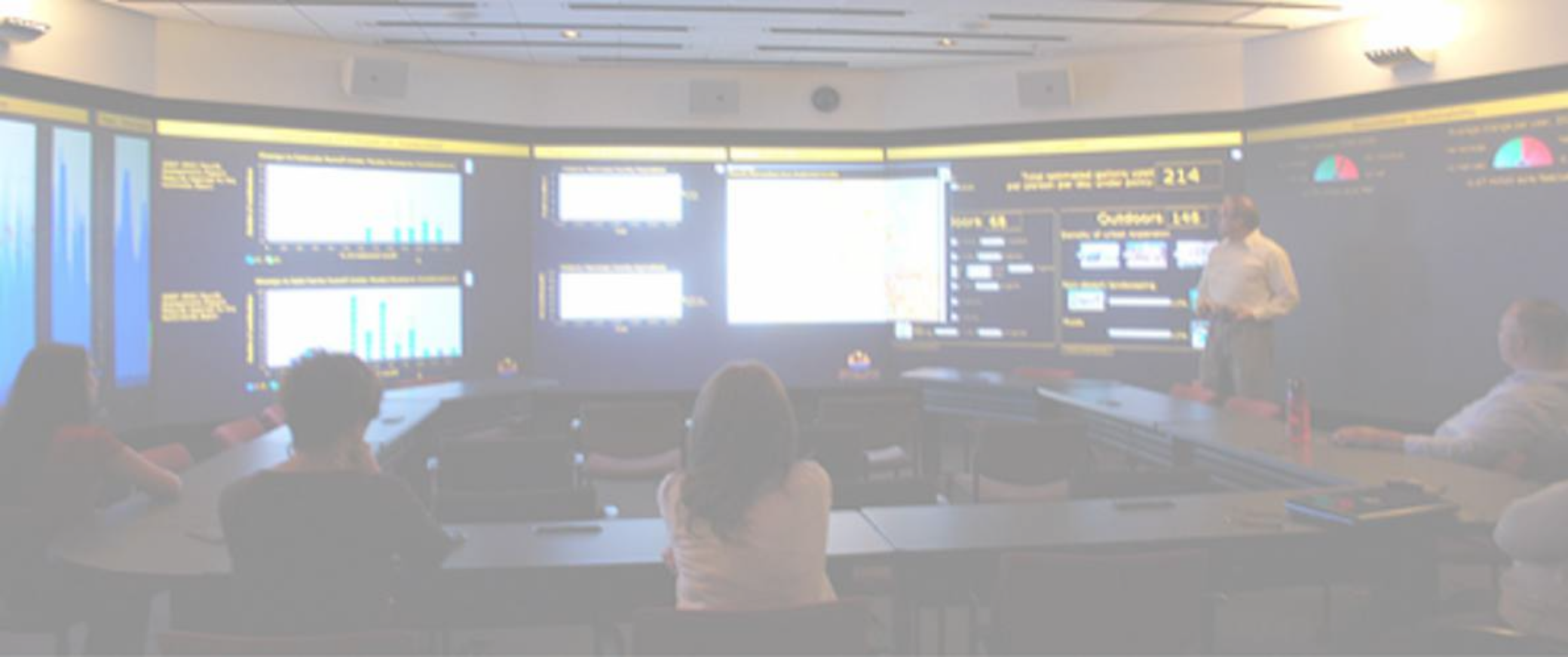
AI FORA Country Case Study India

List of Milestones

Nr.	Milestone Name	Project month due	By		Date Comments
1	Contractual agreements settled	1	JGU, UoM, IIITK, SAS		31/05/2021 Legal documentation
2	Literature review on PDS done	3	UoM		31/07/2021 Written report
3	National actor network PDS mapped	6	UoM		31/10/2021 National actors and stakeholders on the organisational level identified
4	PDS data analytics / AI understood	6	IIITK		31/10/2021 Technology-in-use identified
5	Expert workshop Chennai hosted	10	UoM, JGU		28/02/2022 Inter- and transdisciplinary experts in PDS
6	District actor networks PDS mapped	12	UoM		30/04/2022 District actors and stakeholders on the organisational and individual level identified
7	Prototype / toy model of existing system built	12	IIITK, DFKI		30/04/2022 PDS data analytics system as currently implemented
8	Cultural dynamics of national actor network PDS analysed	18	UoM		31/10/2022 Societal discourse, policies, processes
9	Interim project workshop hosted	19	IIITK		30/11/2022 3-days meeting in the period: 15/11/2022 - 30/11/2022
10	Interreligious/intercultural workshop hosted for experts	19	SAS, JGU, UoM		30/11/2022 Belief systems and social welfare in cultural comparison
11	Local Trichirapalli workshop hosted for heterogeneous stakeholders	20	SAS, IoM, JGU		20/12/2022 Multi-stakeholder Safe Spaces workshop
12	Interviews and fieldwork on desirable PDS conducted	20	UoM		31/12/2022 Data collection on PDS networks closed
13	Interaction between social science and technical science conducted	25	UoM, IIITK, JGU		31/05/2023 Input on desirable system, discussions
14	Prototype / toy model of desirable system built	25	IIITK, DFKI		31/05/2023 PDS data analytics system as desired
15	Policy workshop in Chennai hosted	33	UoM, JGU		31/1/2024 Presenting results to policy makers
16	Final project workshop hosted	34	SAS, JGU, UoM		29/02/2024 3-days meeting in the period: 15/02/2024 - 29/02/2024
17	Data repository Indian case study completed	34	UoM, IIITK, DD		29/02/2024 Database India

Strategies for working with small budgets

- Use existing projects in a country and building on them
- Use synergies of AI FORA, e.g. coordinated game development of WP 4 and coordinator-supported organisation of gamification workshops for data collection
- Use synergies between country budgets (Science Partners, Safe Space Partner)
- Acquiring additional matching funding (e.g. financing workshops and networking etc.) from country resources attracted by AI FORA‘s core funding



Identifying welfare gaps:
The issue of values

Values are a feature of society

Values are context-bound: What is perceived as „social justice“ largely depends on cultural context

- What is considered as „fair“ in one cultural context, might be considered as severe discrimination practice in another.

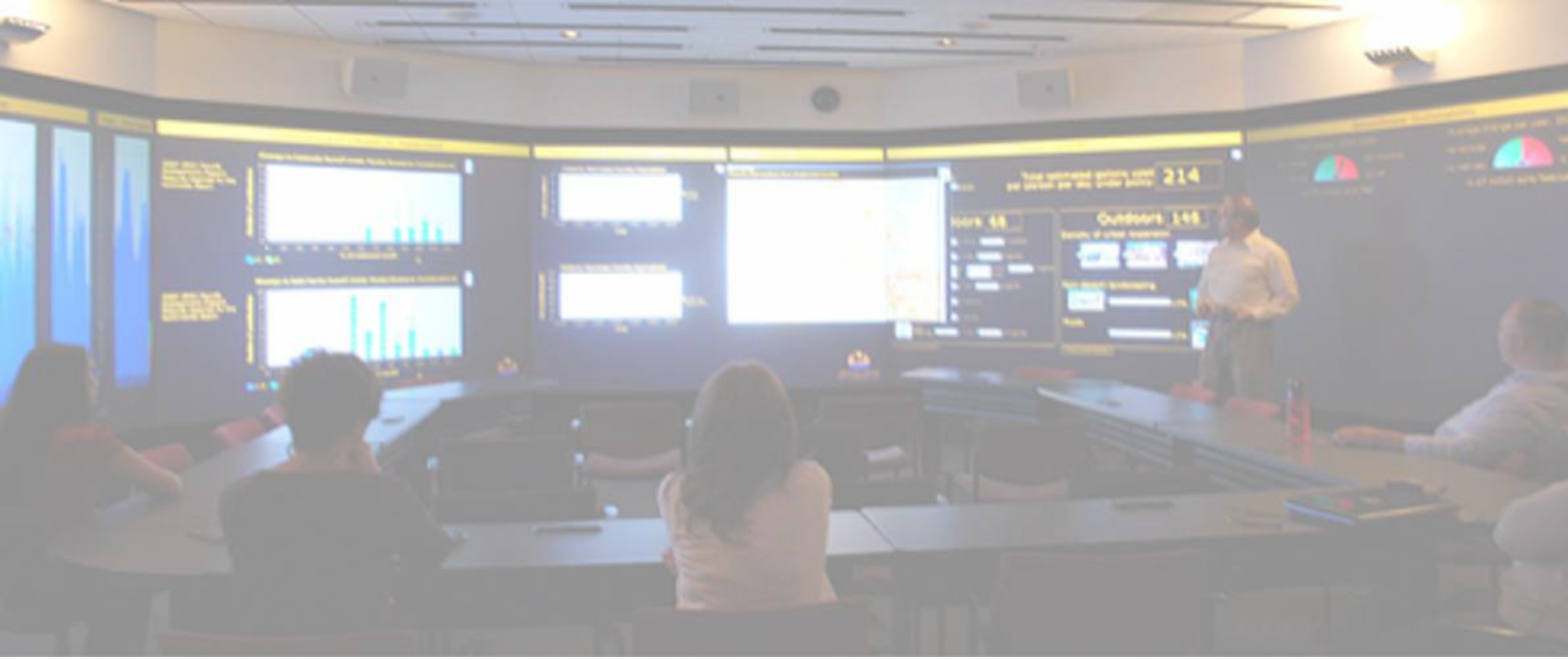
Also, perceptions, attitudes, discussions and acceptance of AI use for public policy vary between countries, as do the types and degrees of AI implementation, with reference to norms and values in-use, but also related to technology status, economic models, civil society sentiments, and legislative, executive and judicial characteristics.

Attitudes not only vary between countries but also within countries between societal groups where winners and victims can be discerned supporting or rejecting social practices and technological developments.

Context is key

Cultural values in AI-based social assessment for public service provision

- **Fairness concept of public welfare policy in a case study country** based on a current categorisation system for social assessment
- **Current implementation** of fairness concept in administrative practices
- **Welfare gaps and scenarios of desired system** as identified by social context (assessment of welfare indices, dealing with vulnerable groups, addressing bias and discrimination, addressing corruption and fraud, what back-up systems in place, what says public discourse/acceptance, are there policy reforms, what is the space of leeway etc.)
- (Policy advise on) **Future implementation of fairness concept** based on a desired categorisation system for assessment
- **Value-sensitive AI - Contextualised AI - Participatory AI – Dynamic AI**



Participatory approach

TISS LAB
Technology & Innovation Sociology / Social Simulation Laboratory

Usually, technology production is expert-driven and disconnected from society in many ways

Explainable?
Transparent?
Ownership?

Gap between technology production and public opinion/discourse!
Technology production is challenged to improve “bad AI”

JG|U

The need for a participatory approach in AI FORA

- Complex problems with high ethical and societal implications for the future of our societies
  - Problems cannot be solved by an individual or one subsystem of society
  - Solutions require the expertise, participation and co-design of all societal groups, especially those who know all about the gaps and problems of current systems
- Societies need to activate their problem-solving networks that contain those that have shaped current systems and their critics
  - Only through them, sustainable solutions can be developed and negotiated
  - Empowerment of stakeholders to evaluate technological development and potential alternatives
  - Early-stage involvement in ideation, development, governance and regulation
- Multi-stakeholder participation and participatory tools
  - New participation formats (e.g. focus groups, dedicated workshop formats, co-design approaches, or companion modelling)

The challenge of participation

- Societies deal differently and differently successful with welfare issues.
- Conflict-prone discussions often put people without “voice”, minorities, and vulnerable populations at a disadvantage.
- Inclusion of minorities, vulnerable populations, people “at the edge of society”, people with no voice in standard representational committees is important
  - They will probably be the people needing support and shelter most
  - They will probably be the people for whom ethical and moral issues in current distribution practices are the most virulent
- but barriers might be high to participate in decision making due to
  - Low education level
  - Low financial resources
  - Low discourse experience
  - Low trust in institutions
  - Low confidence
  - Low motivation
- So how to get the stakeholder network from the local context negotiating and co-producing solutions?

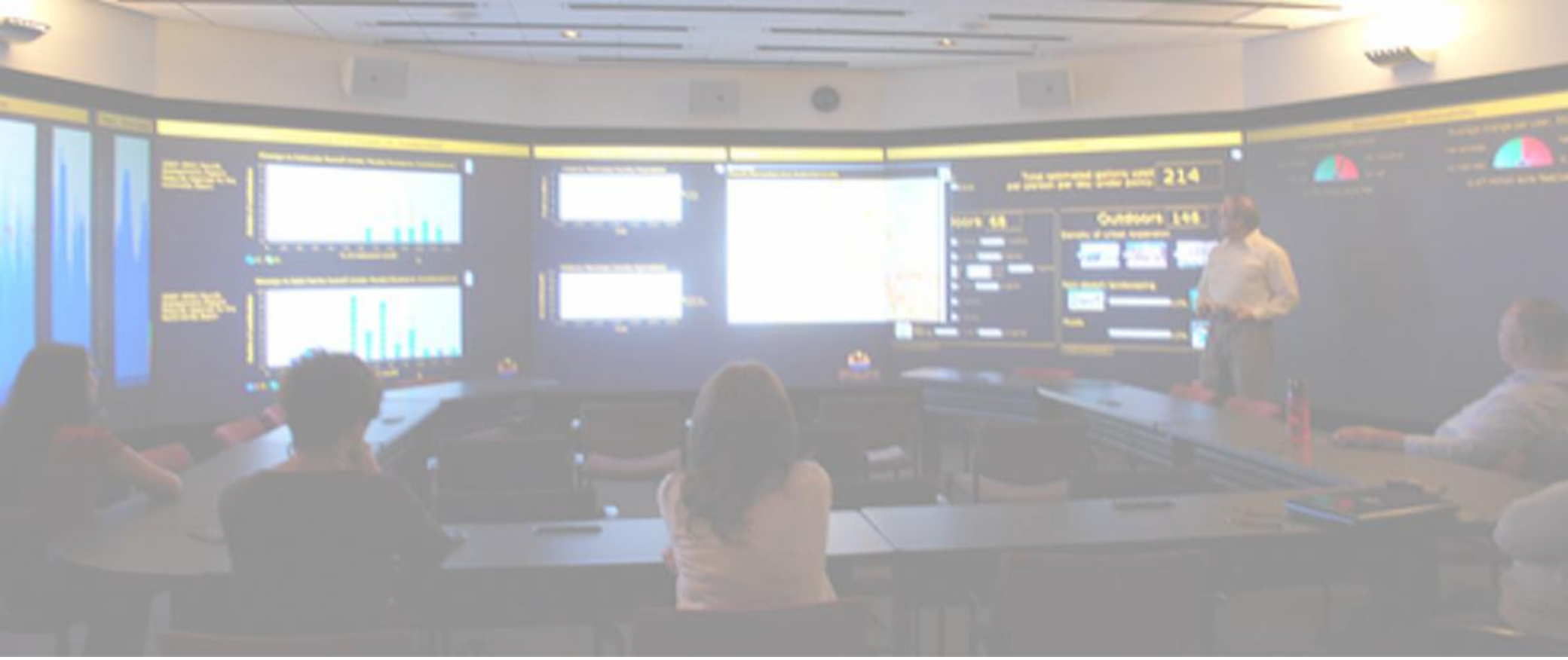
Common participatory research approach applied in all case studies and all WPs

- Working with the expertise and perspectives of all societal stakeholders including vulnerable populations, to develop a joint „product“ in co-design
  - Inter- and transdisciplinary expert workshops
  - Workshops for dedicated target groups (e.g. policy workshops)
  - Multi-Stakeholder Workshops
  - Safe Spaces and Ethical Observatory (in the next session)
- Developing a toolbox of low-barrier participatory methods mostly implemented in multi-stakeholder workshops
  - Participatory Systems Mapping (PSM)
  - Gamification
  - Companion Modelling

How do values impact on social goods provision and technology adoption?

- Social assessment for public services provision is an example for a complex everyday value decision context.
- How do value decisions towards good provision and (technology adoption) impact behaviours of human beings?
- Is this really so different from society to society, i.e. is it really context-bound?

- These are the main research questions that need to be answered first when following the AI FORA approach.



Gamification (more on Thursday)

Applying games in a non-game context

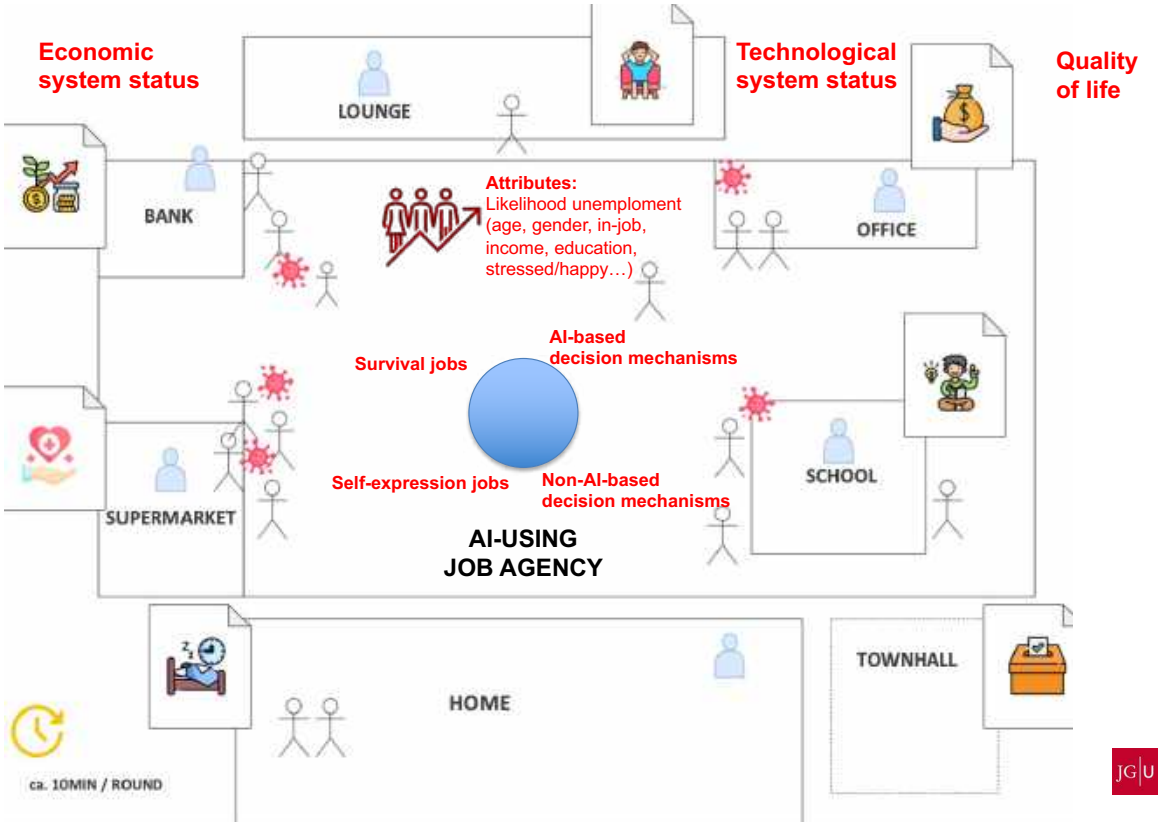
What is the difference between value dispositions in diverse cultural contexts and, accordingly, the difference in behaviours concerning welfare gaps in social service provision?

Advantage of gamification in a participatory approach

- A game can be played in all cultural contexts, and it will make a difference where it is played
- It can be played by everybody, regardless group membership, background, or personal attributes (a medium group size of 20 is advisable, less would not display interesting commonalities, more would rather serve statistical purposes)
- Though each player will have individual decision choice, the game will display the context-bound societal value sets through the corridor choices checked by the qualitative interpretations of coding
- Games create a controlled setting with observability, measurability and comparability
- Opportunity for quantitative data collection

Gamification workshops in AI FORA

- Upcoming gamification workshops at Safe Spaces in Spain and Ireland
- AI FORA-dedicated game: „The Unemployment Game“
  - Simulating a job market with job agency issues and players working out their professional life
  - Ambition to play this in all case study countries for cultural comparison
  - Ambition to adapt the game country-wise to sector/issue of case study
  - Low-barrier Safe Spaces method for working with vulnerable groups



Intermediaries providing “Safe Spaces”
Network Laboratories for innovating Societies dealing with Complexity

- The AI FORA project uses locations of “Intermediaries“ in each case study country as „Safe Spaces“
- These are network organizations specialised in intercultural and inter-societal communication
- Playing the role of bridges, brokers, networks.They are used to deal with plurality of perspectives and intercultural context diversity

- Safe Spaces bundle methodological resources that enable joint problem definition and problem solution while respecting high degrees of differentiation

  - Non-violent communication methods (Marshall Rosenberg)
  - Low-tech consultation methods
  - Participatory multi-stakeholder workshop methods
  - Participatory Systems Mapping
  - Scenario and forecast methods
  - Cooperation formats. World Café, Fish Bowl etc.
  - Gamification and expressive group activities

- Participatory modelling of desired futures and societal scenarios