WP 7 Communication and networking
D7.3 workshop methodology & participation models for internal collaboration

Design Research Collaboration Workshops: a methodology for research collaboration and activity planning

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Title	**Workshop methodology and participation models for internal collaboration**
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1 INTRODUCTION

This report presents a collaborative and participative venture with a shared vision in finding ways of strengthening the collaboration among the partners of the Participatory Tools for Human Development with the Youth (PARTY) project. Creating a successful collaboration between people with various backgrounds, interests and competencies in an interdisciplinary design research project is likely be to challenging. We firstly analyse selected collaboration theories and models from behavioural science, general management study, collaborative design, and highlight internal factors that influence collaboration within research activities. We then argue for the use of the construct or concept of a mental model for collaboration and design thinking as a combined approach for addressing such issues, and propose a workshop methodology for collaboration within a design research project. We also outline a set of supporting tools that have been applied within three workshops as part of the Work Package (7) of the PARTY project. These Design Research Collaboration (DRC) workshops bring together academic and non-academic project partners and members in productive discussion on issues such as research collaboration and activity planning. An online platform is used to facilitate implementation of the collaboration, as a supplement for face-to-face communication in the case of a geographically dispersed team such as the PARTY project.

1.1 Project Description

"Participatory Tools for Human Development with the Youth (PARTY)" is a EU-funded project under the Horizon 2020 MSCA-RISE-2014 scheme. The objective of this research and innovation staff exchange project is to contribute ideas and approaches with the aim of addressing issues related to youth unemployment in developing countries through the development of participatory tools for human development that enable transformational change. Based on a service design approach, the project provides tools for the marginalized youth which are suitable for daily use, that aim to enhance regional democracy, increase equal opportunities and contribute to human and service development for a particular target group: the San youth and young adults (13–24 years of age), especially living in poor or otherwise marginal conditions in the Northern Cape Province of South Africa and in the Omaheke region in Namibia. This is a four-year project between Feb 2015 and Jan 2019.

1.2 Lead Institution and Project Partners

The project is coordinated by the University of Lapland, Finland (ULAP). Partners include University of Leeds, United Kingdom and PACO Design Collaborative, Italy and other partners in Namibia (NUST) and South Africa (CPUT, SASI). As such, PARTY is an international and inter-sectoral research project. The project focuses on developmental cooperation through staff exchange which facilitates research and innovation, and the exchange of knowledge between researchers, the target group and local actors in Southern Africa.

1.3 Aim of Workshops with Project Partners

The overall aim of these workshops is to develop and enhance implementation processes used to facilitate the effective collaboration between academic and non-academic project partners in Europe and partner Third Countries with a specific focus on research collaboration and activity planning.

2 Black box of collaboration

Within management studies, Amabie et al. (2001) suggest that the determinants for successful collaboration fall into three categories: team characteristics, motivation, and processes. Contending that collaboration management practices and interpersonal relationships are the main factors in effective collaboration in R&D, recent work from Jeong and Choi (2014) has identified how factors inside the "black box" of collaboration influences research impact at the team level. Their empirical results show that research impact is influenced by three factors: the team characteristics (collaboration types, qualitative and quantitative factors), motivation (individual and project); processes (transformational leadership; frequent communication, research allocation) as well as control variables. Figure 1 shows that the match between the Amabie et al.'s factors and the variables that affect research impact.
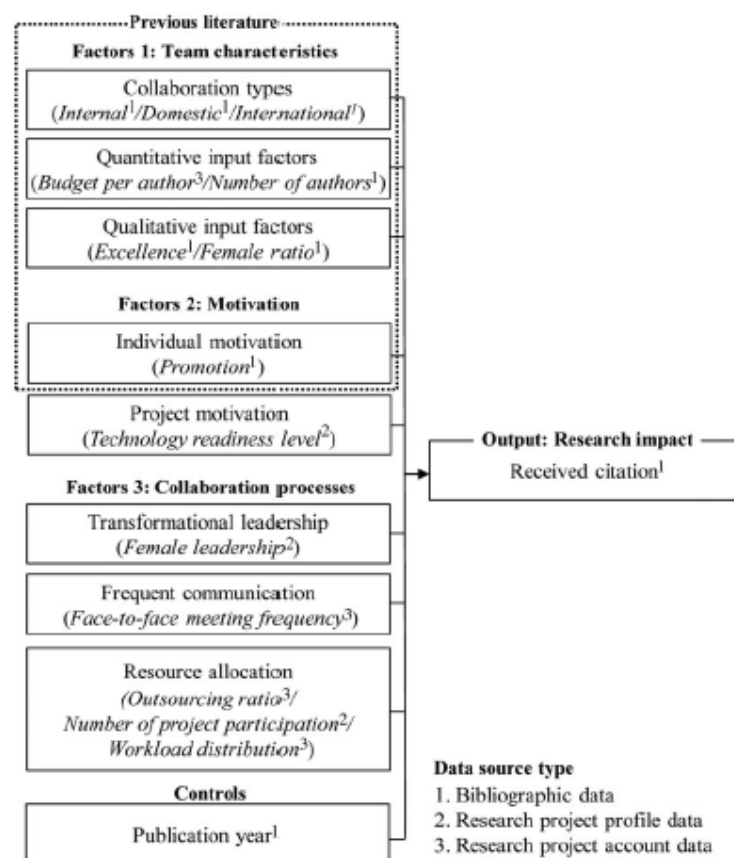

Figure 1 Factors influencing the impact of collaborative research (Jeong and Choi, 2014)

Researchers in several disciplines have applied the construct of mental models to understand how people perform tasks based on their knowledge, experience and expectation. The notion has also been used to study teams and to analyse the relationship between team mental model(s) and team performance. Badke-Schaub et al. (2007) provide an overview of research into mental models employed within teams and discuss the relevance of this theoretical concept for teams involved in design activities. They identify five different types of mental models for studying design teams: task, process, team, competence, and context. Figure 2 demonstrates how mental models in teams develop.

Within this model, the reality - the current situation of the project - is a result of the interactions of an individual's active perception, memory, prior knowledge, and needs. Each team member (e.g. A, B, C in the model) may perceive the reality substantially differently, as individuals have their own background knowledge, prior experiences, expertise, or motivations. These features influence the development of their individual mental models. Further, team members build up a team mental model when exchanging their own mental models as part of regular communication. The individual mental models (as a supplier of context), together with the task, the process, the team and the competence are the five content aspects of a team mental model. Besides the individual mental models, the expectations of the members also influence the result, which are built upon the individual skills and abilities. As a result, both the team mental model and individual expectations play an important role in determining the team performance.
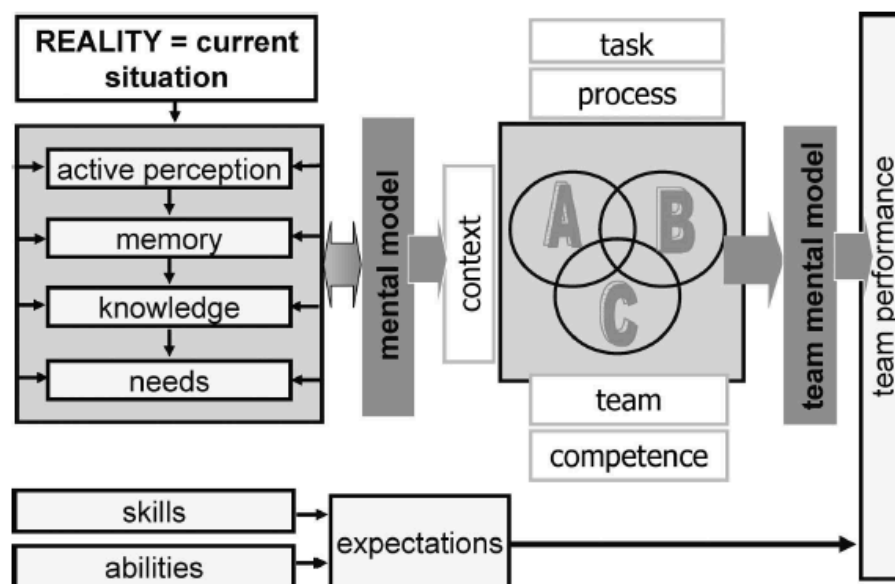

Figure 2 Team mental model (Badke-Schaub et al., 2007)

Badke-Schaub et al. (2007) also argue that the quality of the mental model that is shared within a team effects the outcome besides the content of a mental model. They identify three major factors that influence the quality of team mental models: sharedness, accuracy and importance.

The team mental model proposed by Badke-Schaub et al. (2007) is augmented with Jeong and Choi's (2014) collaboration framework as the model of understanding taken forward within this report. We suggest that it allows workshop facilitators to give weight to an individual's mental model, a team's model and the collaboration process.

4 Design Thinking Process

The notion of Design as a strategy for addressing wicked problems (Rittel and Webber, 1973) is proliferating into an increasing number of areas. Design thinking is an approach to resolving problems more broadly than solely within professional design practice, and has been applied in business and to social issues. It is a form of solution-based thinking that is used to generate a new product or service, and as a result, the design thinking approach is an attempt to produce as believable and realistic a future scenario as possible. Alternative solutions can be explored by taking both present and future situations, and parameters of the problem into consideration.

The Design thinking process consists of three constituent parts: 'Hear, Create, and Deliver' (Figure 3) (IDEO, 1999). The 'Hear' phase is concerned with the collection of qualitative information in order to gain a deep level of empathy and understanding for the people and problems that the design/policy team are concerned with. The 'Create' phase evolves the concrete qualitative data into abstract themes and design/policy opportunities, eventually seeking to consolidate the abstract investigation back into concrete policy solutions and design prototypes. The final 'Deliver' phase develops an implementation strategy concerned with prototyping, cost and capabilities.
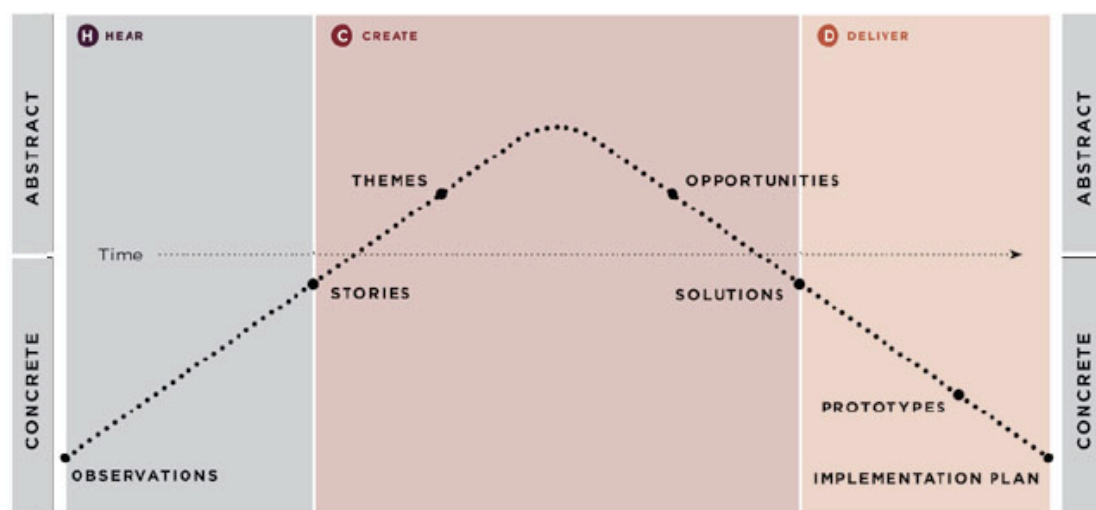

Figure 3 The HCD Process (IDEO, 1999)

We argue that the design thinking process holds a powerful promise for developing and enhancing the collaborative research activities within an interdisciplinary design research consortium that has a high degree of diversity and instability (often a result of the staff exchange scheme) in its membership. The design thinking process is

especially useful when addressing ill-defined problems where both the 'problem' (e.g. research questions, team members, tasks) and the 'solution' (e.g. collaborative research activities) are unknown at the outset of the "problem-solving exercise" (workshops).

5 DRC Workshop methodology

Drawing from the Badke-Schaub et al. (2007) outline for a team mental model, together with Jeong and Choi's (2014) collaboration framework and the HCD Process (IDEO, 1999), a workshop methodology for Design Research Collaboration (DRC) is developed. Figure 4 illustrates the core elements of this workshop methodology.
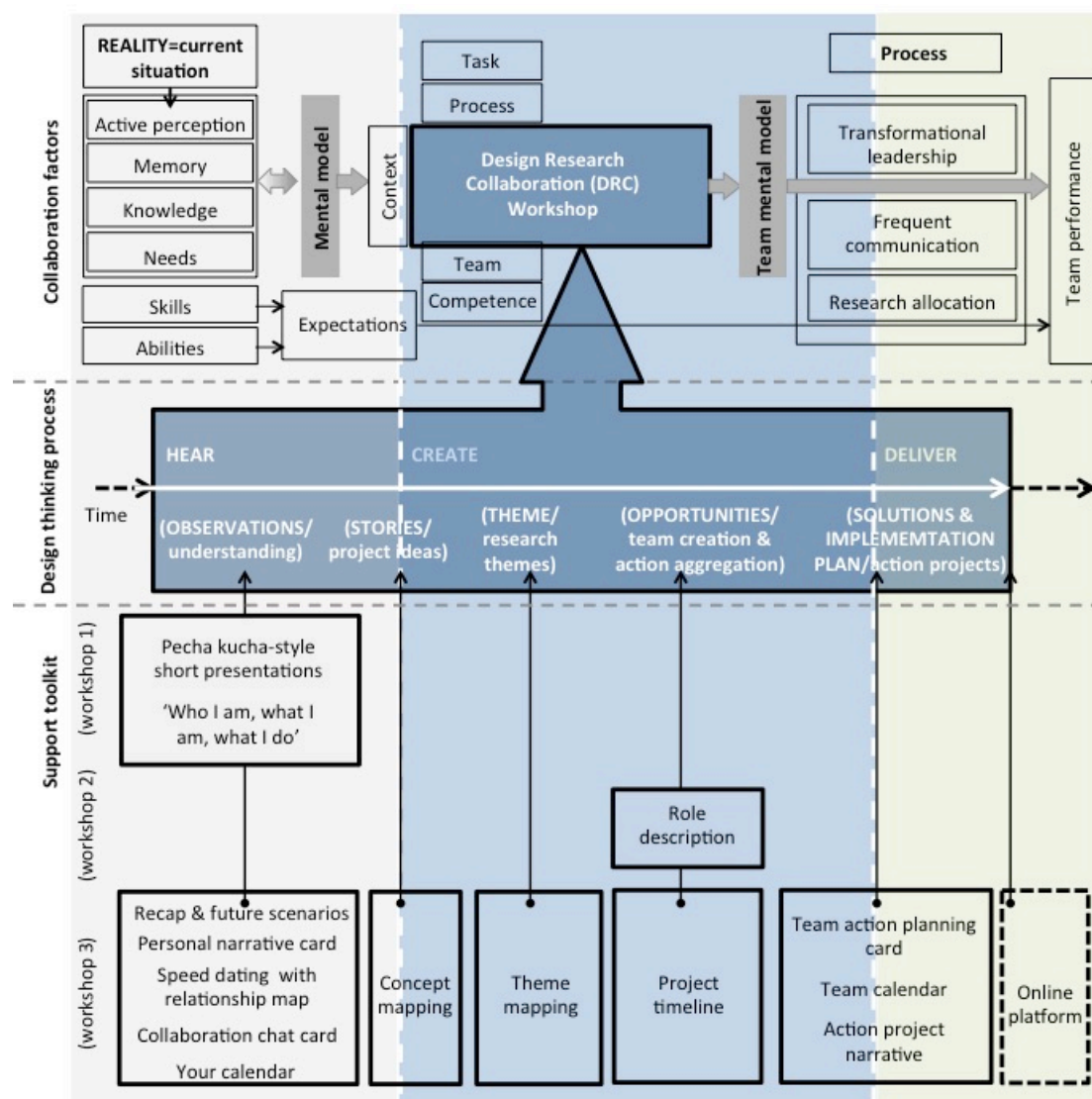

Figure 4 Core elements of DRC Workshop methodology

At the heart of the methodology is the Design Research Collaboration (DRC) Workshop, where the project ideas based on the empathic understanding of the "reality" (e.g. individual mental model, past experiences) are generated into

research themes and future facing opportunities.

The personal mental narratives generated by researchers are captured within the 'Hear' phase of IDEO's HCD process, while the process of building relationships between researchers, generating stories and project ideas through a negotiation of personal mental narratives and calendars between "date partners", moves towards the abstract and subjective, the 'Create' phase.

During the 'Create' phase, a group session is given over to mapping these project ideas into key themes, provoking collaborative reflection on themes by asking peers to suggest similar stories, and establishing a shared understanding of the theme, future scenarios and possible outcomes. Based on the emerging themes, teams are created in the context of the scenarios which form the basis of future work. Once areas of opportunity are determined the created teams and aggregated action are mapped onto a project timeline.

At the end of a group activity, each team works on the development of smaller action projects, formulating project narratives for each, and then, visualising a map of the implementation process which illustrates the key roles undertaken by participants and workload distribution. A project timetable, together with suggested communication methods for face-to-face meeting planning is also developed. This process involves a team working on the five aspects of the team mental model, and generating an implementation plan that addresses factors in the collaboration process, and aims to collaboratively deliver the discrete action projects outside of the DCR workshop.

Alongside these, the methodology includes a "toolkit" (Table 1) to support workshop activities, which addresses critical points in the process or helps map specific recurring needs.

Table 1 Support toolkit

Pecha kucha-style short presentations	Short presentations from individual researchers, defining their research interests as succinctly as possible: 20 slides / 20 seconds each, with no need for great detail about specific projects but an overview of interests and insights
'Who I am, what I am, what I do'	Identifying and classify individual's passions, skills and areas of responsibility in order to develop models of role-taking for PARTY project participants, through a focus on self-image, identity and experience of engagement in similar activities
Role description	Developing generic roles with potential to be applied within the broad range of project activities
Recap & possible scenarios	A summary of 'what have we done this far and what are our next steps'; a group discussion on possible scenarios (to be stuck to a wall) for the project outcomes based on research themes and questions emerging from past research activities and committee meetings

Personal narrative card	Individual researchers write down a description of individual passions, knowledge/skills and experiences, motivations and availability
Relationship map	Getting to know people through a two-minute 'speed dating' activity and visualising relationships: individual researchers sitting at a long table, talk for 30 seconds on "skills", and 30 seconds on "motivations" to the person on the opposite side; they then note down two keywords describing the "skills" and "motivations" of each speeding dating partner on a pre-designed 'relationship map' (together with the personal narrative cards to be pinned up around the room)
Collaboration chat card	Scheduling the 'first date': individual researchers view everyone's narrative card and relationship map, and use the collaboration chat card to schedule chats with potential collaborators for the next session
Your calendar 2015-2018	Your time with your calendar: individual researchers took away the calendar to complete on their own
Project idea/concept map	The 'first date': date partners discussed the shared goals and available individual resources, and worked on the development of a map of possible project ideas
Poster session & theme mapping	At the end of the 'first date', each group produces a concept map presenting its project idea and hangs it on the wall. Each group presents their idea in turn to the rest, provoking collaborative reflection on themes by asking peers to suggest similar stories. Thematic classification of a project ideas key aim (in one statement) enables the identification of themes and trends which would form the basis of future work
Project Timeline	A group discussion is then conducted to build and plan tasks and activities of team action projects onto a visual project timeline, which establishes a shared understanding of the team action projects, future scenarios and possible outcomes
Team mental model creation: Team action project planning card; Team calendar; Team narratives	The 'second date': working in teams to formulate secondary research questions for each action projects and then, creating a map of team action - a map of key partners with roles, resources, tasks, team calendars, and a project narratives in 140 words - a description of research aims and possible outcomes
Basecamp	Collaboration process: an online platform is used to facilitate implementation of the collaboration, as a supplementary of communication in the case of a geographically dispersed team.

6 Case Studies: DRC Workshops

The case studies are derived from three workshops that are conducted as part of the Work Package (7) of the PARTY project. These Design Research Collaboration (DRC) workshops bring together academic and non-academic project partners and members in productive discussion on research collaboration and activity planning.

6.1 Workshop WP7 Milan: 16th-20th November 2015

Workshop hypothesis: our existing knowledge and experience(s) is a critical resource for the future success of the PARTY project

The workshop must address two sets of questions:
a. what do we know (what is our research), and
b. how do we work (what methods do we use to undertake our research)?

Workshop one
Research(er) knowledge:
a: mapping what we know

Rationale:
The first DRC workshop looked to map and classify the research activities and interests that participants had either undertaken or were looking to develop. This would allow for insights to be identified based upon the skills and expertise present within the PARTY project that could be developed towards a series of discrete research activities which addressed the overarching project questions and objectives.

Workshop aims:
• to define / clarify key areas of individual researcher interest
• to communicate current research to PARTY participants
• to identify opportunities for possible collaboration, publication & funding (within and outside of PARTY)

Proposed methodology:
• pecha kucha-style short presentations from individual researcher, defining their research interests as succinctly as possible: 20 slides / 20 seconds each; no need for huge detail about specific projects but an overview of interests and insights
• thematic classification of an individual's key research themes in 5 words, identifying themes and trends which will form the basis of future work

b: aligning ourselves

Workshop aims:

• to build upon collaboration opportunities
• to create small research teams based around these themes
• to map team opportunities against PARTY objectives

Activities:

• following the generation of raw data for individual research themes, a session is to be given over to a mapping of these into key themes to be reviewed and undertaken within the project
• a further mapping of these research themes to the formal PARTY objectives & the project's research questions (to be printed-out & pinned-up around the room) - which will assist in the creation of sub-groupings or/ teams to work on through the development of smaller projects and, potentially, formulate secondary research questions for each - then, visualise a map of these possible research questions
• alongside PARTY research potential, we can also look to develop new project ideas (& teams) & identify possible funding opportunities [parallel session later in the workshop week] - with a focused session where we identify possible project funding routes

Reflection and discussion

Individual researchers presented short summaries of their research interests in order to review and identify those themes which would form the basis of a map of PARTY researcher activity. These were distilled (by the group) to an essence of five words which sought to 'tag' the researcher's interests and priorities, and which were determined by the group in response to the presentation that they had just viewed. This sought to include an opportunity for questions and feedback and for a potentially objective reading of the researcher's experiences. The five words were negotiated and agreed upon as a consequence of brief discussion which involved the researcher.

A secondary activity of classification was then undertaken. From the sets of words generated through the presentations, the group then sought to organise and identify overarching themes. The themes and their tags are shown below: the themes mapped a set of activities ranging from the tangible and functional application of specific sets of design skills to areas of practice and approaches for design.

Table 2 Key sets of design skills and professional competencies

Making: tangible and intangible design outcomes	Telling: demonstrating or showing knowledge and experience	Identity & tribe / Information & technology: who I am and the potential of new technologies	Dreaming / hoping: belief, imagination and the idea of utopia	Learning / involving / engaging: empowerment through research
Arts and crafts	Storytelling	Technology design	Social innovation	Education & pedagogy
Jewellery design & sustainable materials	Digital storytelling	Digital wellbeing support services	Participatory design	Critical thinking skills
Textiles		Social media	Co-design	Osmosis of skills
Product / process / marketplace		Digital archive	Social design	Skills development
Income generation		Information needs	Slow design	
Graphic design		Evaluation with design		

Key sets of design skills and professional competencies were apparent from the presentations, where practices of more 'traditional 'design activities were described, alongside others related to the more intangible outcomes of economics together with an awareness of the needs of the market. The potential for new technologies was seen to be critical to the project's successful development and is clearly represented through the skills and experiences of workshop participants - across a range of applications (from the 'harder' design of systems to their evaluation, from the potential of technology to assist in identifying the formal informational needs of communities to their use in supporting users' emotional wellbeing). The skills of making are complemented by those within the workshop which looked to design's potential to work outside of perceived traditions - the clear use of co-design approaches and participatory methods in the service of social innovation. Likewise, the focus upon participant's experiences within and outside of education and the particular importance of skills identification and development in relation to design's power for innovating new service opportunities.

Given the diverse and overlapping sets of skills and attributes among workshop participants, the classification activities developed towards a more focused set of commonly-held skills which were identified as being relative and significant across the group. These came to be considered as shared interests, beliefs and values and, as such, were classified as the PARTY project 'pillars' - a set of agreed foundation themes which would form the basis for the research to be undertaken as PARTY.

Table 3 PARTY project 'pillars'

PARTY 'pillars'	
Creativity	(San) heritage
Developing economies	Human development
Ethics / ethos	Imagination
Empathy and design	Migrants
	Role of designers

The first part of this workshop identified and made visible the key themes and interests of project participants through the data generated for each presentation. From this, it was possible to begin to analyse, classify and categorise these research interests and identify points of mutual interest and the potential for combinations or overlap of activities which might facilitate the development of smaller groups and activities to address the project's overarching research questions. However, this aspect (the formulation of more focused groups) was not achieved within the time available and a decision was made to progress to the second key theme of the workshop.

The methods employed were notable for a number of reasons:
• concision of researcher's introduction to the group (relatively large group, so not much time)
• whole group classification of the researcher's themes and inclusive discussion to arrive at negotiated 'tags' (consensual approach with potential for new insights to be developed from the researcher's impressions on others - not always those held about oneself or defined by yourself)
• bottom-up definition of both the project's core research values and activities, and the range of thematic opportunities apparent from the mapping process (arriving at a clearly-defined and mutually-agreed set of themes which participants felt best represented the skills and interests of the group in relation to the project's aim(s))

Workshop two
ii. Methods transfer:
a: evaluating methods

Rationale:
The second workshop looked to map the range of research methods and methodological approaches and knowledge held by researchers within PARTY. This would allow for a scoping study based around researchers' experiences and develop the potential for identifying specific tools / toolkits which might be of further use to the project. It also sought to develop methods to co-design the internal network of participants, with particular focus on the roles people might occupy within the project and how these might reflect individual's self-image and skills.

Workshop aims:
• to identify key methods used / to be used within individual researcher activities
• to evaluate the potential of specific methodological approaches within researcher's experience
• to identify commonalities in terms of key roles undertaken by participants to help facilitate clearer management of PARTY research activities

Proposed workshop methods:
• pecha kucha presentations around methodological approaches used within past or current research
• visualise the approaches & methodological skills of PARTY participants
• identify and classify individual's passions, skills and areas of responsibility in order to develop models of role-taking for PARTY project participants - through a focus on self-image, identity and experience of engagement in similar activities - making use of a three-part tool ('who I am, what I am, what I do')

Part one:

Table 4 Thematic survey of PARTY research methods

Thematic survey of PARTY research methods			
Designing with	**Stories & their telling**	**Making visual**	**Reflecting on the self**
PAR	Visualisation	Tools for visualisation	Autobiographicy
Participatory design	Narrative structures	Visual storytelling	Embodiment
Action / interaction	Autobiographical narrative	Process diagram	Sensory ethnographies
Cultural probes	Future-orientation		

Reflection and discussion

The sample of methods outlined in the table in appendix two illustrates the broad range of approaches to data collection which the workshop participants identified as either those they had experience in or would like to engage with. There is clear evidence of methods related to the PARTY project objectives. From this, it is possible to organise such approaches and use of methods into a set of discrete themes which map an approach to data collection that is innovative and seeks to place autobiography and stories (of the self) at its centre. There is strong potential for visualisation within a participatory context within the group and the notions of Participatory approaches are, as expected, very clearly evidenced.

Part two:

Objectives:
• present individual's skills, values and desires and thematically map the range of identities performed as part of an individual's engagement with PARTY
• develop generic roles with potential to be applied within the broad range of project activities

The use of the 'Who am I, what I am and what I do' tool emerged from discussion around research activities and particular ideas of identity and self-image within the group. Its aim was to document this discrete set of reflections which complemented the activities which sought to discuss what we do and how we do it. Such concepts were seen to be fundamental in terms of reaching a consensus on the range of potential activities which had emerged from the PARTY workshops to date and, significantly, the nature of the roles that individuals were needing to occupy within them.

Table 5 Generic role description for PARTY participants

Generic role description for PARTY participants	
Roles	Responsibilities
Designer	• of methods / tools • of experiences • of dissemination strategy • of interventions / disruptions • of outcomes • change agent

Researcher	• data collection • data analysis • writing-up • summarise / synthesise • unpacking ethical requirements • clarify / define research approach and impact
Educator	• feedback to curriculum • engage current students • train - crossing disciplines • community skills development • community engagement • dissemination to San
Connector	• external • institutional • with stakeholders • project extensions and funding • project partners with clear lines / links to San and marginalised communities • CPUT, NUST, SASI
Mediator	• ensure adherence to 'policy' - code of conduct, ethics and gaining informed consent
Co-facilitator	• from the community • intermediary • translator • ensuring internal and external continuity
Implementer	• co-organiser • gaining informed consent etc.
Manager	• sub-group leadership • quality assurance • management / scientific committee member
Facilitator	• activist • running workshops • conversations - networker • conflict / consensus
Storyteller	• project story moderation and mobilisation of social media • documenter • broadcaster
Editor	• comments / feedback • critical friend

Reflection and discussion
The process of thematic mapping allowed for a mutual agreement that education, research and design were central to the project's activities. Some participants would classify themselves across these three broad categories, with specific requirements of each being noted as adding to the potential complexity of PARTY's remit.

The role of workshop facilitator was regarded as being a significant one - and that having a nominated individual who could control the activities was essential (rather than a group or number of people with the potential for confusion). To partner, an individual who is nominated to represent the community and act as a bridge (helping with pragmatic matters such as translation and mediation) would be seen as critical for the fieldwork.

The significance of communication and being able to create a permanent record of the number and variety of workshops led to the development of the role of storyteller - an individual who could both document the activity and transform it into a meaningful narrative, with some responsibility for disseminating evidence via social media.

Without functioning connections to communities, a project such as PARTY would struggle and so the role of Connector was developed in order to be the conduit to liaise with potential participants, communicating the project's aims in a way that other would not be able to. It was agreed that these roles would be tested within the upcoming fieldwork activities in 2016. (we have a map of how these were to be applied, should I include it?)

Workshop insights
- the nature of the PARTY project demands a flexible and multifaceted group of researchers and practitioners: often individuals might need to occupy a range of roles within one workshop scenario
- it would be a risk to attempt to build a workshop without addressing some of the project's fundamental needs: ensuring a clear and sensitive link to communities with whom we aim to work (and, therefore, the roles of the 'connector' and 'co-facilitator'), the guarantee of data that is useful for the proposed research (which requires a researcher whose interaction with the participants within the workshop might be minimal), together with an individual or small groups (of 'storytellers') whose role would be to transform the workshop's narrative into a coherent and valuable story for a range of media
the overview of research methods (and approaches) within the project group highlights specific opportunities around four key themes which could form the basis of future workshop activities

6.2 Workshop WP7 Milan: 16th-17th January 2017
Workshop three WP7 Milan
Title: Defining PARTY milestones in your life for 2017&2018 through (co-) design

Aim:
The focus of this workshop is to support effective collaboration on the planning for research activities (e.g. tasks, WPs, deliverables, publications, funding applications, knowledge sharing/transfer activities) within the PARTY project for 2017 and 2018.

Objectives:
- To define/map skills and motivations shared among the participants and PARTY activities in 2015 and 2016;
- To identify a series of discrete team projects and develop action plans based on the shared skills and motivations and the past PARTY activities;
- To define PARTY milestones in the individual researcher's PARTY life in 2017 and 2018;
- To create and visualise planned team action projects on a PARTY project timeline which will form the basis of future collaborative work

Proposed methodology:
- Design thinking and Badke-Schaub et al.'s (2007) collaboration mental model as a combined approach, structuring and organising the workshop activities;
- A set of design (visualisation) tools and a range of activities designed, engaging the participants who work collaboratively towards a visualisation - 2017-2018 PARTY Project Timeline;
- A survey and an open discussion at the end of the session, gaining participant feedback and comment on the effectiveness of the workshop for supporting internal collaboration and planning.

Evaluation methods and participants
A survey (Appendix 3) which investigated the effectiveness of the combined approach, tools, activities, workshop methodology for supporting internal collaboration and planning was developed. 22 participants attended in the workshop, and 13 of who participated in the survey and an open discussion at the end of the workshop (table below).

Table 6 workshop three respondents

Number of participants	Institution	Academic (Y/N)	Country
3	University of Lapland	Y	Finland
5	PACO Design Collaborative	N	Italy
2	Namibia University of Science and Technology	Y	Namibia
2	Cape Peninsula University of Technology	Y	South Africa
2	South African San Institute	N	South Africa

Table 7 Activity description, tools and selected comments

Description	Methods/Tools	Objectives	Selected comments from the participants
Recap and introduction: The project manager made a summary of "What have we done this far and what are our next steps?"	**Recap presentation**	Clarifying the aim of the one- week session:	
Defining research themes and possible scenarios: A group discussion on possible scenarios (to be stuck to the wall) for the project outcomes based on research themes and questions emerged from past research activities and committee meetings	**Scenarios pool**	Defining research themes and planning possible project outcomes in the context of scenarios	"Useful for future projects"(WS3P9); "I was not clear in the beginning how these relate to already planned outcomes" (WS3P10)
Understanding yourself: Individual researchers wrote down a description of individual passions, knowledge/skills and experiences, motivations and availability	**Personal narrative card**	Understanding the researcher's personal skills and goals through creating a mental narrative about themselves	"It helps you know yourself better and others to relate to you" (WS3P6); "It was useful to think about the different aspects but need to know the focus more clearly at the beginning" (WS3P10)
Getting to know people through a "two-minute speed dating" activity and visualising relationship: Individual researchers sat at a long table, talked 30 seconds on "skills", and 30s on "motivations" to the person on the opposite; noted down two keywords of the "skills" and "motivations" of each speeding dating partner on a relationship map (together with the personal narrative cards to be pinned up around the room)	**Relationship map**	Creating a network of shared skills and motivations; Visualising new relationships and possible collaboration between individual researchers	"This was an excellent way to see how could work together" (WS3P4); "Speed dating was good as you learned more about the others" (WS3P6); "Good! Maybe it would be nice to have two minutes more time?" (WS3P13)
Scheduling the "first date": Individual researchers viewed everyone's narrative card and relationship map, and used the collaboration chat card to schedule chats with potential collaborators for the morning session next day	**Collaboration chat card**	The first round: Creating teams	"A good guideline to structure new chats (WS3P12)"; "This was great although the time was limited for more discussing (WS3P4)

Your time with your calendar: Individual researchers took away the calendar to complete on their own	**Your calendar 2015-2018**	Clarifying individual researchers' PARTY experiences in 2015 and 2016; Planning ahead by creating a schedule that includes all their commitments relating to work, personal and social life for 2017 and 2018; visualising their availability for PARTY	"Very useful for planning and reflecting on past activities" (WS3P11); "Very useful to directly plan for yourself and with others for the year" (WS3P12)
The first date: date partners discussed the shared goals and available individual resources, and worked on the development of smaller team projects and visualised a map of possible research questions	**Project idea map**	Developing smaller team projects	
Poster session: each group produces a concept map presenting its project idea and hangs it on the wall. Each group in turn stands before its map and presents its project idea to the rest, provoking collaborative reflection on themes by asking peers to suggest similar stories; nine team action projects have been created.	**Theme mapping**	Defining key research themes; developing action project ideas, creating teams and a synergies between teams and team projects;	
Project Timeline: a group discussion was conducted to build and plan tasks and activities of nine team action projects onto a visual 2017-2018 timeline.	**Project Timeline**	Plotting action projects on the PARTY Project Timeline; defining PARTY milestones in the individual calendar	"Visual timeline is critical in understanding the collaborative action" (WS3P7); "Very help as this gives a view on the next period and priorities" (WS3P8)
The second date: Working in teams, formulated secondary research questions for each action projects- then, created a map of team action- a map of key partners with roles, resources, tasks, team calendars, and a project narratives in 140 words - a description of research aims and possible outcomes during 18th - 20th January	**Team action project planning card**	Developing team action project narratives and action plans	"This was really good to help in discussing joint project themes and goals" (WS3P7)
	Team calendar		"Helps to concretise the actions" (WS3P7)
	Action project narratives		It is perfect, as it gives us a feeling of the bigger picture (WS3P6)

7 Discussions

7.1 Benefits
Feedback was collected at the end of the two-day workshop via surveys and an open discussion. Discussion and evaluation surrounding the use of the combined approach and supporting tools in the DRC workshops by project researchers clearly indicated the value of their use in supporting collaboration and goal-based action planning at the interim stage of the project. The combined approach provided a collaborative way of aligning ideas and individuals (WS3P10) and action planning with the benefits of elicitation and synthesis (WS3P8), as well as clarifying the different perspectives of the project, the team and the future work (WS3P7).

The pecha kucha presentations were, themselves useful tools for creating a relatively concise model though which individuals might engage with a larger group in terms of both introducing and contextualising their research interests and methods. The development of bottom-up and responsive modes of feedback from the group back to the individual allowed for a more reflective and communal means of extending the presentation towards a more meaningful project focus. The development of the 'who I am, what I am, what I do' tool (which, itself, emerged from these bottom-up mapping sessions) proved significant in terms of crystallising the groups' own constituent values and potential approaches. From this, the mapping of specific roles which were regarded as critical for the PARTY emerged more organically and was informed by the skills and experiences of the group, situated within the context of the project's particular needs.

The Personal Mental Narratives, 'speed-dating' activity and Relationship Map were particularly effective as an elicitation and synthesis device for the individual researchers to understand themselves, and engage immediately with the others based on their shared motivations and values, as well as complementary skills. The 'Your calendar' validated existing knowledge and past involvement in the project of the individual researcher, and also provided more specific information about their availability for the project in 2017 and 2018, which enabled the project team to make decisions as to how workloads might be distributed and face-to-face meetings could be scheduled. The Project idea map enabled the "date partners" to discuss joint project themes and goals. The Project Timeline helped to build a common understanding of the research themes and possible outcomes and form a basis for the future work – planning team action projects in the context of the real scenarios. The action project planning card with the Team Calendar tool enabled the team to visualise key partners with roles, resources/competence, tasks, context, and process which are essentials for the development of a team mental model. By using a visual shorthand, these tools are helpful to concretise the actions in a succinct and memorable manner to the team members. It was one of the most direct applications of design methods in supporting the creation of a team, and an implementation strategy that aims to direct the work outside the workshop.

The DRC workshop provided a valuable and effective vehicle for the communication and exchange of individual mental models, the elaboration on past experiences, and

the building of a common understanding of the project, and the aim, objectives and a implementation plan of a series of discrete research activities which addressed the overarching project questions and objectives.

7.2 Challenges

Although a number of supporting methods have been used in these workshops, it was clear that not all methods had the desired impact on the development of collaboration and activity planning. It would be useful to know the focus more clearly at the beginning of each activity. The purpose of a pool of scenarios, for example, can be made clearer in the beginning how these relate to already planned outcomes (WS3P10).

The two-day workshop has provided the possibility to discussing joint project themes and concretise actions in a short but focused way, taking on both the core and new team members. The feedback shows that more time is required to complete the tasks (WS3P4, WS3P5, WS3P13).

It is important to ensure that group sharing and reflecting moments with the rest are scheduled and planned during the workshop. "It is good to do "little" meetups, but it could be better if everyone explained what they did (WS2P1) and have a proper discussion with the tools (WS2P13). A template may be provided in order to provoke collaborative reflection and guide theme mapping and the construction of a shared vision of the joint projects.

We identified the importance of creating a more flexible way of running the workshop. The workshops typically are the first in a series, of two to five full day workshops. Workshop 3, for example, 15 project members spent two full day on the DRC workshops and three full day on completing the implementation strategy of the action projects with the aid of the project planning card, team calendar and project narratives. If run as a one-off event of several hours, it would be modified to include core elements of the workshops.

8 Conclusion

The workshop methodology was designed to engage a broad community in the collaborative development of joint research projects and activity planning. This methodology, and a set of supporting tools, were developed iteratively through three workshops which brought together academic and non-academic project partners and members in productive future-oriented discussions. While our workshops focused on the collaboration planning and implementation of a design research project, we believe this methodology could be adapted and applied in a broad range of communities concerned with the development of collaborative work and research projects.

Acknowledgement

Reference:

Amabile, T. M., Patterson, C., Mueller, J., Wojcik, T. et al. (2001) 'Academic–practitioner collaboration in management research: A case of cross-profession collaboration', *Academy of Management Journal*, 44: 418–31.

Badke-Schaub P, Neumann A, Lauche K and Mohammed S (2007) Mental models in design teams: a valid approach to performance in design collaboration*?, CoDesign*, 3:1, 5-20, DOI: 10.1080/15710880601170768

IDEO (1999) Human Centered Design Toolkit. 2nd ed.

Jeong, S. and Choi, J.Y., 2014. Collaborative research for academic knowledge creation: How team characteristics, motivation, and processes influence research impact. *Science and Public Policy*, p.scu067.

Rittel, H. and Webber, M. (1972) Dilemmas in a General Theory of Planning. *Policy Sciences* 4.2 (1973): 155-69

Appendix one:

List of all skills identified through the presentation of research activity in workshop one

	Research themes
P1	Indigenous digital storytelling, empathy in design, context appropriate solutions, co-design (community development), collaboration
P2	Methodology, technology design, participatory design, co-design
P3	Information needs, wellbeing, evaluation of the design
P4	Youth and students as mobile subjects, collaboration, migrants, imagination, future-oriented
P5	The role of designer, ethics, communication, engaging, community, design as a tool understanding and analyzing, sustainability, culturally sensitive design, design by people
P6	Unemployed youth in Namibia
P7	Long lasting results, problem with the SAN is drop-out from education, no college degree, and department of the education to money to establish program based on program e.g. SAN youth that have dropped out from education. Social development..
P8	Design for social policy, behavior change
P9	Social innovation, participatory design, ethics
P10	Textile, process, product
P11	San heritage restitution, museum story, ethics, practice, SAN heritage, Arts and crafts, digital archive, communities, access to information/data (khwattu.org)
P12	Social design, engagement, social innovations
P13	Collaborative Design, collaboration, slow design, environmental uniqueness, sustainability (in arts and crafts)
P14	What can design do? Place, community, storytelling

Appendix two:
List of methodological approaches outlined within workshop two

	Research methods, approaches				
P1	visual storytelling	context appropriate	situated experience		
P2	qualitative and quantitative	Storytelling, observations	always related to creating some sort of technology Various methods developed/ do we get the same results?	Service design methods, focus groups, also interested to learn new service design methods going to youth environments (such as Havana, Epukiro..)	Data from both SA and Nam Cultural sensitivity, cultural aspects Culturally embedded, comparative analysis
P3					
P4	material cultures, cultural knowledge transfer	narratives	future-oriented	focus groups	survey -> culture purpose adapting
P5	mix of qualitative and quantitative data	tech. solution to involve youth to think about the impacts of drugs in their lives - > animation	Data: mapping. building stories in 3D dimension	elderly isolation/ mapping - allowing people to communicate -> graphic related tool?	Visual, experiences
P6					
P7					
P8					

P9	Ernesto Sirolli (2012) Data recording! the way to gather information is important being natural in font of many cameras - > case Emotional framing, openness, building relationships	survey methods	action research - conquest to communion (Ezey 2010)	body interaction, body language! embodied listening Action (e.g. walking)	
P10	qualitative	case studies, semi-structured interviews, visual record of process	case study reports	protocol analysis, themes, variables, process diagram modeling, mapping	
P11					
P12	Embodied methods	future-oriented	visual methods		
P13	Participatory action research, co-design	observations, interviews	plan and act	material cultures, cultural knowledge transfer	
P14	innovation and development of new tools and methods participatory tools and qualitative methods	cultural probes: autobiography, notes to your past or future self experiential writing as a method	narrative data, ethnography, experimental methods	sound walking, and place making, audio drifts/ sonic maps, as a way to document subjective experience? mobile methods/ Moving stories Ross. N. J. et al (2009)	sensory ethnographies combining aesthetics & ethnographic approach (Sarah Pink) experience mapping -> basis of storytelling

PARTY workshop 2 Survey comments and results
Work package 7 Task 7.1

Participant Code = WS3Pn

1.What was the most valuable part of today's workshop?

	Code	Comments
Sharing deciding	WS3P1	When sharing and deciding where we are in the project from the academic and design sides of it
Understanding project+others	WS3P2	Finding out project groups; getting to know values/goals/interests of the others
Define directions	WS3P3	Defining directions throughout a visual map that helped organize the project
Define future joint project/themes	WS3P4	The most valuable part was being able to identify different themes that we will work on more specifically in groups in the future
Effective in Understanding project+others	WS3P5	We have had the possibility to know each other (Monday afternoon) in a short but focused way. this has be very valuable specially for those like me who just stared to know the project. I would have preferred to have a little more time though.
Sharing; defining personal goals and contribution	WS3P6	The most valuable part is to meet the group and share some background info on the project as some of us are new. The other outstanding activity was the Mental narrative as it highlighted where your passion is and what you can give or how you can contribute to the PARTY project.
Define future joint project/themes	WS3P7	Discussing joint project themes and getting tools to concrete them
Timeline Define future joint project/themes	WS3P8	Making the timeline and the working groups on different tasks lots of futurism to digest well done all!
Define future joint project/themes	WS3P9	Interacting with co-members and finding out their interests based on skills and motivation
Learning method/tools	WS3P10	The opportunities to use the tools
Understanding project	WS3P11	Better understanding of what the project is about
Understanding others; Learning method/tools	WS3P12	I learnt a new interesting approach and I think the common motivation of effectively work together and come up with new, innovative methods is priceless
Define future joint project/themes Learning method/tools	WS3P13	Sharing interests and creating small teams, discussion is so much more effective on smaller "dream teams". I think that all of the methods or tools were really good.

2.Of the following, how useful was each in allowing for productive collaboration and why in the right column? Please use the column in the middle to rank their use value (1=least useful, 5= Most useful)

A combined approach with design thinking and collaboration mental model

Code	Score	Comments
WS3P4	4	This was a great way to collaborate as a group
WS3P5	5	I think design thinking at its core is collaborative and it's one of the key points
WS3P7		The process was a great way to help on practical project planning
WS3P8	4	Makes you think
WS3P9	5	Useful for comprehending each others' interests and values
WS3P10	4	Useful to align ideas and people
WS3P11	4	
WS3P12		Don't remember
WS3P13	4	Really good process! Maybe shot refection between tools and collecting/running common outcomes
	4.3/7	

A pool of scenarios

Code	Score	Comments
WS3P4	3	Not sure
WS3P7	X	
WS3P8	3	?
WS3P9	1	Useful for future projects
WS3P10	3	I was not clear in the beginning how these relate to already planned outcomes
WS3P11	4	
WS3P12		Don't remember
WS3P13		Can't remember what this was
	2.8/5	

Speed dating activity

Code	Score	Comments

WS3P2	5	
WS3P4	4	This was an excellent way to see how could work together
WS3P5	4	
WS3P6	4	Speed dating was good as you laid learn more about the other person
WS3P7	X	
WS3P8	5	Learning quite a lot about skulls and motivations of others
WS3P9	5	Finding out your own interests
WS3P10	4	Interesting to learn about others' skills and motivations. I pity that you could not "meet" everyone.
WS3P11	3	The activity was fun but time was limited
WS3P12	5	Very good to learn about yourself and others. Also for once break it down to the most necessary
WS3P13	4	Good! Maybe it would be nice to have 2 minutes more time?
	4.3/10	

Mental narrative card

Code	Score	Comments
WS3P1	5	
WS3P4	4	Also very good way to help fill in the calendar for the year
WS3P6	5	It helps you know yourself better and others to relate to you
WS3P7	X	
WS3P8	3	How to incorporate all in my own diary
WS3P9	5	Understanding yourself
WS3P10	3	It was useful to think about the different aspects but need to know the focus more clearly at the beginning
WS3P11	3	
WS3P12	3	More for myself than for the team. It would have seen enough to do the speed dating
WS3P13	4	
	3.8/9	

Relationship map

Code	Score	Comments

WS3P2	3	
WS3P4	4	This was great to allow for collaboration work
WS3P5	4	You find core themes which I think is quite important
WS3P6	5	Good activity to see who you can relate to
WS3P7	5	Great to understand people's possible collaborations
WS3P8	4	Interesting to see which participants share the same interests
WS3P9	5	Having same skills as others
WS3P10	3	One could see relationship with all and it was not easy to identify the more important ones without….the possible collaboration
WS3P11	4	The map was based on the skills and motivations given which does not five a holistic view of the person
WS3P12	5	Very good to focus on efficient (new) collaboration
WS3P13	4	
	4.1/11	

Collaboration chat card

Code	Score	Comments
WS3P4	3	This was great although the time was limited for more discussing
WS3P6	4	Good activity to see who you are going to work with
WS3P7	x	
WS3P8	4	Interesting to see which participants share the same interests
WS3P9	5	
WS3P10	3	It was difficult to organise the chat times
WS3P12	4	A good guideline to structure new chats
WS3P13	3	Good, maybe little bit of guidance/help next time?
	3.6/7	

Your calendar

Code	Score	Comments
WS3P2	1	
WS3P4	4	Very good way to plan for the year

Code	Score	Comments
WS3P6	4	Keep me to keep and stay on track
WS3P7	x	
WS3P8	5	This did help to organise activities
WS3P9	5	Useful for predicting your programme/project and where you could improve
WS3P11	5	Very useful for planning and reflecting on past activities
WS3P12	5	Very useful to directly plan for yourself and with others
WS3P13	4	Good tool! Help to see what has been already done
	4.1/8	

Team action project planning card/ Project idea map

Code	Score	Comments
WS3P2	5	
WS3P3	5	Good to point out and discuss based on objective
WS3P4	4	Also great for the project planning activities
WS3P6	4	Hope it can shared with all
WS3P7	5	This was really good to help in discussing joint project themes and goals
WS3P8	5	This did help to organise activities
WS3P9	5	Useful for previous review interactive review
WS3P11	4	
WS3P12		I don't remember, sorry
WS3P13	3	Really good but I didn't have time to fill it…
	4.4/9	

Team calendar

Code	Score	Comments
WS3P2	4	
WS3P3	5	Necessary, inexistent
WS3P4	4	Also great for the project planning activities
WS3P6	4	Calendar is really good and informative
WS3P7	5	Helps in concretising the actions
WS3P8	5	Getting a "global" view and very helpful

WS3P9	5	Useful for completing projects before deadline
WS3P11	4	
WS3P12	5	Very useful to directly plan for yourself and with others. However, I think they could have been continued
WS3P13	3	Good but I didn't have time to fill it…
	4.2/10	

Team project abstract/ Team action project narrative

Code	Score	Comments
WS3P1	4	Good to fix in teams the projects but I would spend a bit of time explaining it each group
WS3P2	4	
WS3P4	4	Great way to streamline work for the year
WS3P6	4	It is perfect, as it gives us a feeling of the bigger picture
WS3P9	5	
WS3P11	4	
	4.2/6	

2017-2018 and future PARTY Project Timeline

Code	Score	Comments
WS3P1	2	We didn't really fix it, apart from the theoretical one
WS3P2	5	
WS3P3	5	
WS3P4	4	Essential for us to plan together as a team
WS3P5	5	Give the group a clear view of what is ahead and how each of us can contribute
WS3P6	4	I think it is realistic
WS3P7	5	Visual timeline is critical in understanding the collaborative action
WS3P8	5	Very help as this gives a view on the next period and priorities
WS3P9	5	Accomplish projects
WS3P11	5	
WS3P12	5	Very good to plan ahead efficiently and make sure that everybody is on the same page
	4.5/11	

3.What could be improved upon in the future?

Code	Comments
WS3P1	Teamwork sharing time with the rest. It is good to do "little" meetups but it could be better if everyone explained what they did
WS3P2	Communication with the team; mobility should be based on the teams; each team responsible for certain decisions
WS3P3	Shared vision and project understanding; develop a holistic understanding of the project and strategy; communication and work efficiency
WS3P4	Some parts required more time and it was a pity there was not enough time to finish the timeline
WS3P6	More team building needed to know each other better
WS3P8	Sometimes, I did not understand the exercise, I had to work it out
WS3P12	I think there were very useful tools, but I think there were too many. One or two of them could be considered
WS3P13	Maybe between the tools there could be some kind of reflection, also for last thing to do proper discussion with the papers (now were collected away too early?)

4.Would you like to know more about Design approach and methods for enhancing collaboration?

Code	Comments
WS3P1	Sure it is really interesting and you did a great job
WS3P2	Why not☺
WS3P3	Yes
WS3P4	Yes, I am interested in learning more design approaches and methods since I am not a designer and I am learning new approaches
WS3P5	Yes, sure
WS3P6	Yes, if we could have a website where all that's happening could be shared
WS3P8	Yes
WS3P9	Yes, to gain insights. on what it is all about
WS3P11	Yes, please
WS3P12	Yes, in order to fully understand the potential
WS3P13	Yes, I can see how these would be utilised to many actions inside my organisation

5.Which groups/organisations you think might be interested in joining this session?

Code	Comments
WS3P1	All, every university, company and group of people need organization and collaboration tools

WS3P4	Most of the sessions
WS3P8	More NGOs
WS3P13	European Commission; Universities; Consortiums; Communities

6.Any other comments, or ideas for future sessions?

Code	Comments
WS3P1	Less talking, more visual and whiteboard ☺
WS3P2	We need to create "template for reporting motilities after getting back Calendar where we are can see when/where others are going"
WS3P3	Time is running out. The project needs urgently to improve communication, goal based commitment task planning.
WS3P4	This has been a very productive few days
WS3P13	Thank you for your great work!