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# A SECOND STEP BACK FOR MANAGING AMBIGUITY BESIDES REDUCING UNCERTAINTY

Gianni Jacucci

*Laboratory for the Social Study of Information Systems, Department of Sociology and Social Research, University of Trento, Italy, [gianni.jacucci@unitn.it](mailto:gianni.jacucci@unitn.it)*

Mike Martin

*Centre for Knowledge, Innovation, Technology and Enterprise (KITE), Newcastle upon Tyne, UK, [mike-martin@btconnect.com](mailto:mike-martin@btconnect.com)*

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# A SECOND STEP BACK FOR MANAGING AMBIGUITY BESIDES REDUCING UNCERTAINTY

Gianni Jacucci, Laboratory for the Social Study of Information Systems, Department of Sociology and Social Research, University of Trento, Piazza Venezia 41, 38100 Trento, Italy, [gianni.jacucci@unitn.it](mailto:gianni.jacucci@unitn.it)

Mike Martin, Centre for Knowledge, Innovation, Technology and Enterprise (KITE), Newcastle Business School, Newcastle University, 1st Floor Citywall, Citygate, St James Boulevard, Newcastle upon Tyne, NE1 4JH, UK, [mike-martin@btconnect.com](mailto:mike-martin@btconnect.com)

## Abstract

*This paper is an attempt to chronicle and evaluate the struggle to innovate, to understand and to produce a sustainable response to the pressing problems of the care and protection of an aging population. In that struggle, quite distinct world views of the lived experience of the older person and their families and carers, the pressures and challenges of practitioners, on managers and planners and on the politicians who strive to improve the experience of life of their constituents and the desire of technicians to design and build something useful and interesting come together not in a rational orchestration of interests but in the agonistics of real life.*

*The reality of the distinction between what we have called North-South, hierarchical. and East-West, peer and partnership behaviours and attitudes, between Gregory Bateson's distinctions of first order and second order processes and deuterio versus acquisitive learning together with the need to support and nurture sense making and co-production are very apparent in the experience of the project. The challenges of maintaining an appropriate balance have been significant and are ongoing.*

*We have tried to describe, and provide some detailed evidence for, a style of intervention which we have claimed takes a step further than what is usually conceived of as participative design. This is not based on a reallocation of rights and capabilities between architect/designers and client/users in what are still linear or iterative but two sided design processes. Such reallocations still leave the definition of the objectives and the contexts of development as preconditions of design and assume that the architectural language and conceptual framework are available to the participants in which the problem and the solution can be articulated. In circumstances where these assumptions cannot be safely made, there is a need for an intervention which has the purpose of addressing this lack. In our classification of development processes, this necessarily implies the creation of what we have called East-West occasions which are furnished with material, exhibits and provocations around which the participants can engage with each other in sense making and the co-construction of a shared language.*

*Keywords: social care, user participation, co-production, sense-making, second step back.*

# 1 INTRODUCTION

## 1.1 A structural problem

The paradigm which places the design process between “needs” and “solutions” fails to address the issues of innovation and transformation. But these are the very characteristics that are demanded by policymakers in many eGovernment initiatives which are not (or are no longer) about delivering the old services through new channels but about the transformation of roles and relationships among service providers and between them and their clients, the formation of new partnerships and the redistribution of decision making and of control. In these processes the concept of need itself is open for reconstruction and renegotiation. The challenge of addressing the resulting *ambiguities* becomes at least as significant as managing *uncertainties* within established frames and practice.

When transformation of delivery, in multi-agency and multi-disciplinary contexts such as coordinated health and social care, is considered while, at same time, complex technical systems to support delivery and governance are being constructed, traditional linear, first order development models are no longer adequate. The demand for use cases and attempts to map business processes exacerbate the problem rather than provide the first steps to a solution. Engagement and participation of all stakeholders in design processes would seem to be essential, but traditional PD approaches quite often implicitly assume that participants already have a shared language adequate for the situation, together with common values, vision and understanding. These assumptions may be, and often are, ill founded. This paper explores the issues of how interventions can be designed to address these challenges, and to provide a more appropriate balance between managing uncertainty and resolving ambiguity

Watzlawick, in studies of the pragmatics of human communication (Watzlawick *et al.* 1967), identifies content and relation as equally relevant. Bion (1961) in studies of the psychology of groups distinguishes between the *task* to be executed, and the equally important establishing of *relation and trust* in the group. These observations raise a question: Is there too much of a dichotomy in our interventions, between attempts to establish functional rationality in technical systems and organisational processes on the one hand (reducing uncertainty), and attempts to establish culture change through facilitation and learning on the other (managing ambiguity)?

Posing a question of this sort corresponds in the words of Bourdieu (1992) to be taking *a second step back* on our part in looking at our intervention activity, for not only investigating whether we are performing what we were asked to, what we have designed to do, and whether it really works (first step back), but also to question whether we are doing what we can and should, to assist our ‘clients’ in making their journey: whether we are constructing with them a shared sense making of the whole project, of the context and of its main concepts, objectives, choices, and motivations, and whether we have been successful in making trust relationships amongst all possible.

Carl Rogers (1951, 1969, 1980), in his person centred approach studies of therapy, advocates the application of three criteria (non-judgemental unconditional acceptance, empathy, congruence) on the part of the counsellor, for establishing working communication and trust relationship with the client. – Note that Rogers intentionally avoids using the term patient, in his descriptions of his personal therapy activities. We see the relationship between facilitators and clients in ISD deployment, such as the one described here, as even more symmetrical than this conception of the councillor – client. (Cattani and Jacucci 2007).

## 1.2 An infrastructural solution proposal

Addressing ambiguity and building shared understanding entails working on, as well as in, language and for this to happen, participants must be engaged with a shared problem and with each other. A core issue in the approach presented here is the identification and selection of material which has the potential to engender this engagement of participants in a constructive exchange. Tools in these approaches include exhibits, representations, illustrations and stories, embedded in free and accessible discussion of different perspectives on the joint activity and context. One way of characterising this

use of material is in terms of ‘*mirrors and windows*’ to help participants recognise their own perspective (mirror), and to be able to observe and compare it to that of others (windows). Non-judgemental respect, empathy, congruence, are also needed here, to create the pre-conditions for the exploration of other points of view and perceptions and the development of trust and understanding. In terms of the design of an intervention, story telling, humour and performance all play a part in offering material as a provocation or exhibit to be engaged with rather than as a product to be sold by a salesperson or a lesson to be learned from a teacher.

- We have observed the following characteristics of multi-agency care and of the contexts in which shared technical infrastructure and new working practices are being constructed:
- While there may be someone “in the chair” but there is no one in control of the space in which the parties come together to plan and execute these development programmes.
- The participants not only belong to different agencies but also have the different value sets, priorities and perspectives of practitioners, managers, technicians and clients or patients.
- The policy drivers and legal or management imperatives that bring the parties together often imply or demand second order rather than incremental change. As Bateson observes (1973), this is schizogenic.
- The nature of the health and social care relationships make issues of governance of practice and of information paramount and these are matters of responsibility which cannot be reduced to, and expressed in terms of, mere function.
- All of these characteristics mean that any approach to rationality in design or communication has to be preceded by, and a consequence of, shared sense making just as the products of these processes (technical and organisational systems) must themselves be “made sense of” through use and governance. In the face of the complexity, ambiguity and contention of the caring and developmental services, rationality cannot be a cargo to be brought to the process by certain actors but must be the outcome of the co-productive relationships of all of them. On this basis, a connection may be drawn between the rationalities of function and of communication and this can be related to the complexities and incoherences of the wider context.

While the introduction of a *co-productive* approach involves the fundamental reappraisal of relationships and boundaries in the development process, it does not, and cannot deny the differences that exist between domains of expertise and practice. It is inevitably the case that at some points, concrete technical work has to be undertaken. Such work has, perforce, to have inputs and will produce outputs; some division of labour is inevitable. Because of this division, the processes by which systems are produced must still be understood in terms of spaces and the work that takes place within and between them. The supply model of current methodology literature and systems practice is based on the assumption that such divisions are between the “technical” and the “non-technical” with the latter as a source of requirements and as the recipient of the design and development outputs of the former. Participation is usually conceived as the fostering of overlap and the interpenetration of the spaces but the observations made above indicate that, on occasion, this can be insufficient. Going further to a commitment to co-production, however, cannot be assumed to involve removal of the boundary all together. It is also worth re-enforcing the observation that that “technical” is a relative term here, simply denoting an asymmetry of access to and capability in respect of some area of practice. There are many occurrences of such boundaries in a care community and in the infrastructure and environment in which it operates. The instance of the ICT system is only one subset of this more general web of relationships of service supply and use.

- In our familiar, first order, rational development process, we traverse phases of vision, plan, execution, and evaluation:
- Purposeful behaviour starts with the conception of a *vision* of the desired state of affairs.
- Next we must construct a *plan* based on what we believe is possible and effective, this is *strategy*.
- This leads to the *execution* of the plan which involves deploying and consuming *resources* that are available and appropriate.
- The *evaluation* of our progress in relation to the plan and the continued relevance of the plan to our vision involves comparing observations, *measurements* and the use of appropriate *criteria*.

And this results in *learning* and the conception of new visions where learning involved the deepening and broadening of our knowledge. It is cumulative.

The purpose of this process is to manage uncertainty which represents risk and it is the basis for all of our standard project management approaches. However, every so often something different happens and, when we look back, what we see is that we have started doing things that we previously thought impossible and have stopped doing things that we thought were essential. What we once thought of as our resources have become impediments and what we thought were barriers are now opportunities. We have re-evaluated what we mean by evaluation and our learning has involved forgetting.

We cannot account for these changes within our first order loop; somehow we must have broken out of it. What seems to have happened is that contractions, inconsistencies and paradoxes, as well as discoveries, have built to a point where we have been forced into a different mode of *sense making*. This is equivalent to entering the inter-subjective mode of conversation we mentioned earlier where we open ourselves up to the co-construction of new meanings and values. One of the signs that this is taking place is that we start adopting new terms and usages, this is *linguaging*. For the outsider this often appears strange and threatening and is dismissed as jargon but for the participants it leads to new *commitments* and new shared vision. The purpose of this second order loop is the management of ambiguity rather than uncertainty.

Systems development projects always start with the definition of a first order loop even though the political vision may contain within it contradictions and paradoxes if we try to analyse it within the paradigm of current practice – which, of course, is what we do. The application of these processes in contexts of multiple organisational and professional cultures often leads to further tensions which generate the need for a shift into second order mode. All of the odds are stacked against this event, this identification of the need to address ambiguity, contradiction and paradox, leading to transformation and, when it does happen, this tends to be in spite of management and is interpreted from that quarter as scope creep or unco-operative and disruptive behaviour. So, the challenge of information systems development in the multi-agency, multi-professional contexts of caring services, is to find ways of facilitating and orchestrating events and occasions where the co-production of new meanings and values can be nurtured and enabled. This does not mean that the conventional planning and management structures are suppressed but that they come under a new concept of governance which is open to what Kenny refers to as “live conversations”. [<http://www.oikos.org/vincen.htm>]

As we have explained above, we take this approach to represent an additional step, and commitment, compared with conventional participative design, one that, as we have observed, is open to a accusation of being disruptive because it might question and undermine the very assumptions and stated objectives of a project which has been cast as a technical development. The success of these ventures are conceived in terms of the completion and delivery of an implementation programme rather than the achievement of the outcomes of care and wellbeing that the technical components are assumed to be able to deliver. It requires a radical reflexivity on the part of facilitators who must continuously monitor and control a non imposing attitude, intellectual honesty, empathy and congruence towards all of the clients and the interests they represent and express. The method endorsed is that of reducing ambiguity and suspicion by manifestation and sharing of group-perspectives in open conversations among different stakeholder groups, and of establishing relation and trust by genuine participation, joint-commitment, and co-production.

### **1.3 The conditions of the intervention**

The pressures on the project are to implement and deliver technology in order to achieve explicit milestones in the project plan. The danger is that what is produced expediently turns out not to be appropriate and acceptable to various elements in what has emerged as a complex set of relationships among different agencies and interests who participate in the service commissioning, delivery, use and management networks. The dilemma here is that engagement can only be achieved around something real and concrete but, if the real and concrete is rejected and it represents an investment of a significant part of an always insufficient budget, then the project fails. We have asserted that, because success depends on co-operation and trust, we can only address this situation by fostering genuine participation and involvement, by facilitating creative sense making and awareness. Further the stimulus for this process must be on the basis of exhibits and materials that are realistic and conducive

of discussion but at the same time can be discarded on the basis that they have been a stepping stone to better shared understanding. These methodological requirements are embedded in a complex of relations between the various institutional actors in the project together with their bureaucratic and ideological approaches and institutional settings. The assets in this situation are the commitment to a strategy of federation for functionality and to a therapeutic approach for communication and trust relationship building and enrolment towards co-production. Above all, there is the evidence of the energy and creativity of the care community which has been exhibited in accompanying projects in the region. It is the process of realising and directing this potential for innovation and care that is central to the intervention. The paper describes in detail what, why, and how, of the intervention, as well as the outcomes.

## **2 USER WORKSHOP AT SERVICE COMPANY AID**

### **2.1 Background**

The organisation and execution of the intervention reported in this paper was based on engagement and participation rather than on managerial planning in Emilia Romagna, Italy. The context of these activities is a European research and intervention project for the introduction of simple-to-use support technologies in aged people care, where different views, interests, and commitments of a range of institutional organisations are brought together. The need for the event is discussed in the light of the different perspectives of various institutional organisation representatives, a record of the interventions and live exchanges, and the outcome of event is discussed and compared with theory. Attention to relationship and trust building, and to social sensitivities in communication, are seen to be rewarded, whenever applied. Instances of failure in these respects with some stakeholders are connected to insufficient attention and care dedicated to these very aspects.

The user workshop in question gathered some ten representatives of various aged peoples associations, here representing users, inviting them to express and exchange their views freely on feasibility and relative usefulness of various proposals for the introduction of tele-medicine, information and entertainment services to the home. They were not to limit themselves in the discussion to items in the existing work-programme of the ongoing project, while sample presentations of features of a couple of similar projects ongoing in the UK were presented as seeds for brainstorming. Because these were explicitly not the offerings of the project, they were open to criticism and even rejection without threatening the relationships within the project. The event was moderated by individuals with experience in facilitating focus groups in general, and technology user groups in particular. The group of managers leading the project, or project group, was nor generally invited to participate in the event, to avoid intimidation and censorship. Just two of them did participate. The first was the usual and familiar contact with participant user associations - who had invited the participants individually and personally -, and the second from the technical and design side, for technical assistance if needed. This is in contrast to earlier "official" consultations where the participants were an audience to a panel of project representatives presenting from a podium.

The event was judged by the participants to have been successful in reaching its goals. They reported their happiness to have been called upon and to act as a project resource; they expressed and exchanged their different perspectives and views, and learned new things about one another, co-producing new prospects in the process; they saw themselves generating interesting proposals and compelling suggestions, and their input considered as important project assets; greater trust and commitment to the project ensued in all participants, together with greater confidence in its positive outcome potential.

On the other hand, the project group, who had immediately grasped the potential power of this encounter with users, but at the same time had perceived its potential threat as possibly greater than its positive potential: it could generate demands which were considered outside or beyond the means of the project to deliver. The process that the event would trigger by listening and sharing was perceived as irreversible. By making thing so explicit, it could threaten their ability to navigate carefully between the vested and somewhat conflicting interests of the various stakeholders including the regional

government interests, project managers, researchers and designers. The necessity emerges therefore to help the project group grow and mature not only in its understanding and appreciation of the problem/task domain, but also on the area of open peer engagement.

In the following discussion we use the term “North-South” for organisational structures and processes which are based on the normal concepts of hierarchical control, rational planning and management contrasting it with what we call “East-West” processes which are peer to peer, are not controlled but depend on mutual sense making and shared learning. We assert that *both* of these are necessary for the creation of infrastructure particularly when that infrastructure has the purpose of mediating relationships of care and that N-S structures have to allow E-W processes and occasions to occur and must be able to respond constructively to their outcomes.

The names of people and companies have been changed in this account which summarises the stages of development and discussion leading up to and during the workshop.

## 2.2 Preliminaries

Early in May, a project-group meeting was held at the premises of the project co-ordinating service company AID, also including an external participatory design expert.

Mike (aged people aid technology and organisation intervention expert) observed that the project was at a point that it required some real input from, and engagement with, users and with people working for the voluntary associations who have direct access to experience with assisting older people. He feels that they should be given a chance to react freely to intellectual provocations on candidate aid technologies, and discuss equally freely with their peers on what makes sense to them and what does not. “What is now needed in the project,” he says, “is to abandon, for a moment the North-South view of the whole process, to allow for the emergence of something original, genuine and well rooted in everyday life of people, above the background noise of the work-program, and cutting across the usual roles and procedures.” He argues that building this network of understanding is just as important as building the system which cannot flourish without this engagement and understanding.

To achieve this, there is a need to:

- Identify a person in the formal institutional structure capable of understanding this need, and of supporting and legitimating the attempt to organise a successful event of this sort.
- Identify a person capable of facilitating the emergence of the desired results within such an event.
- Silvia is called upon by Mike to perform in 1, Gianni in 2. Mike believes that both people are suited to the task.

Gianni (participatory design expert): “I am available. The person usually performing as group facilitator in our lab is Claudia, Rogersian counsellor, expert in group dynamics, and experienced in facilitating focus groups. She is also available to participate in an event later in May and to perform in it as a facilitator.”

Carlo (AID service company’s manager) expressed worries about the impact on formal relations between the Municipality and the volunteer’s association; having to explain that the participation of the “big shots” is not needed at the event; the likelihood of unavailability of invited volunteer people and the difficulty of overcoming the usual relative formality of interactions with them.

Silvia (municipality manager): Surprised and interested by the proposal; understanding the need and opportunity to overcome the one way interaction and communication between the project and the volunteer-users; sure to be able to explain to more senior people the need for the organisation of the uncustomary event; curious about the practicalities of managing the event by facilitators; struck by the required performance and necessary self-controlling approach to facilitation rather than direction or instruction; interested in the video material from the UK which came from a similar development but appeared to be in a more advanced state of implementation; nodding and convincingly agreeing, upon Gianni’s request of a reaction to Mike’s proposal.

Maria (contact to user associations): Approves of the proposed, participative approach; believes that it is possible to identify appropriate participants to the user workshop; finds interesting the video of

Hull; nodding and convincingly agreeing, upon Gianni's request of a reaction to Mike's proposal; she is particularly busy these weeks, but she will happily abide; pleased with Gianni's availability, hoping that it will be a continuing one.

A panel of 8 to 10 people was selected on the basis that each had been active in previous meetings which had not involved senior people from the project and other agencies involved. Appropriate examples of the sorts of services and technological settings were constructed by translating video material from Hull, UK, on user satisfaction with newly implemented, web based, communication and community service for the elderly. This was to provide concrete materials for participants to react to. This approach was selected rather than showing the preliminary developments of the project itself to avoid the idea that this was the project trying to sell itself to potential users.

It was suggested that the event was to be placed under the aegis of Silvia - the municipality manager - as well as Maria who is the main contact the associations. Their sponsorship and involvement as external observers was considered important to ensure that both understood the process, its motivations, and its outcome, and also to be able to mediate results to other members of the project. Results on users' appreciation of different options was expected to provide useful input to orient technology development efforts in the project, the results of which will be offered back to users for critical comments, in an iteration based, evolutionary, consensus building and participative design approach to implementation.

### **2.3 The event**

The workshop was organised to take place on one afternoon at the end of May 2008, with the following structure:

It consisted of three parts, besides introductions: presentation, discussion and analysis of video materials, group work and feedback.

Those present were:

- Facilitators: Claudia, supported by Gianni.
- From AIS: Maria, and Sergio (for part of the meeting).
- Participants: eight persons (three men and five women): Andrea (retired people association 1), Marco (pensioners' union, aged people association 1), Graziella (pensioners' union, aged people association 2), Marcello (pensioners' league, aged people association 3), Carla (voluntary association 1), Barbara (voluntary association 2), Gabriella (voluntary association 3), Elena (old peoples' home, voluntary association 4).

Setting: a room with a large oval table. All participants and facilitators are seated at the table. There is a flip chart on which the facilitator writes key words and concepts as the discussion develops. The video is projected in a way that is comfortable and visible for everybody. The group work during the last part of the meeting takes place in the same room. Each group can talk seated comfortably in a circle. The results of the discussion are briefly presented in a concluding plenary session. The discussion is recorded.

After the projection, workshop participants made numerous spontaneous contributions, which the facilitator initially allows to flow freely, only establishing their order. Then she proposes some stimulus questions to focus the discussion. The questions proposed are the following (written on the flipchart so that they can be seen throughout the discussion):

- Needs of the elderly: what are the needs that you think are the most urgent/most felt?
- What services do you think are most useful or urgent in relation to these needs?

In the last part of the meeting, participants take part in a role play in which, divided into two groups of four people, they perform the following task:

Choose one or more services proposed in the discussion and try to develop them by drawing up a preliminary plan. The roles that must be acted in the group are:

- designer (who describes the activities of the service),
- technologist (who decides the tools needed to activate the service),



- organiser (who considers the organizations that must be involved),
- co-ordinator (who helps the group to work in the time allotted to complete the task).

Time available: half an hour, followed by a report to the plenary meeting.

On conclusion of the task, the two groups report their results with the support of OHPs:

*group 1:* the group has chosen *collective services:* public transport, URP, social centres, voluntary associations, trade unions, church, cultural, political and sports activities, local district website, motor activity; *tools:* television, remote control, keyboard, audio connection; *organisations involved:* local civic centre, civil society associations and organizations, social centres, cultural associations

*group 2:* the group has chosen the *health service:* doctor, pharmacist, nurse, AID, health workers (with relational approach); *tools:* to enable immediacy and timeliness in using high technology; *organisations involved:* elderly, district, AID, doctors and various (online) civil society organisations.

In the last fifteen minutes, participants reported on the work of their groups:

At the conclusion of the meeting, the facilitator reminded those present what had been discussed during the meeting and explained that the material collected would be shared with the designers/technicians, as well as with the other project stakeholders. The designers would be able to see what has been said, compare it with what has been done so far, and then report back. Participants warmly thanked the organizers, underlining the effectiveness of methods selected and the desire to be involved further.

Comments by the facilitator: During the discussion, the interventions, communicative modes, non-verbal communication, etc. of all those present have shown that there was real interest in the themes proposed and in the discussion methodology used. There was clear satisfaction at being able to talk about issues on which they regarded themselves as knowledgeable and expert and at being closely involved in an interactive, participative meeting, which treated them as protagonists whose expertise was recognised. It was further evident that there was a strong desire to share, be involved and to be useful for the project to put their own point of view both as individuals and as a representative of bodies and associations. The concern for users and the desire that the project and its concrete outcomes (services/ computer system, etc.) would be truly useful for the elderly was also in evidence.

During the group work, the participants showed that they liked being able to discuss with their peers and be closely involved. In fact, they have immediately and enthusiastically accepted the proposal to work in a group.

Thoughts expressed (key words/concepts written by facilitator on the flipover board)

*Needs of the elderly: what are those most urgently felt?*

- Need for simplification: personalised addresses (doctor, expenses, social assistant, taxi service, etc..)
- Need for information (information of various types with updating)
- Need to escape isolation
- Need for independence
- Need to communicate
- Need for contact among the elderly (presence, email, telephone)
- Need for aggregation
- Need for training and familiarisation with the system
- Need for continuity, accompaniment, training
- Need to involves associations which can serve as links with the computer system
- Need to network and feel oneself part of a network (health service, social services, etc. e.g.: connection with the CO-OP for shopping delivery)
- Non-static stance by the authority or of individuals
- It is difficult for many users (especially the most elderly) to seek help and support in the places established

*Suggestions on how to address needs*

- Networking
- Work not on the individual but on the group, otherwise the initiative is restricted to the better educated
- Therefore involve centres for the elderly, associations, etc.
- Act before the elderly are no longer able to obtain information important for them.
- Create a system that can be used to different levels (simpler level with fewer functions, other levels of greater complexity) in relation to the needs of the user and his/her abilities.
- Problem of keeping the system updated so that it is functional and useful.

*Doubts raised:*

- is the project becoming too complex? I understood that it was above all about support/help on health issues.
- to what extent can an elderly person realistically use this system?
- How can the program be updated, and by whom? Could associations do it? ..
- But when will it be ready?

## 2.4 How did it go

User workshop participants shifted during the three hours of the event from a critical attitude and of apprehension towards technologies and project, to one of participation, un-alarmed and positive towards the new services, happy to have been active, creative, collaborative, useful and efficacious, in an activity of communication, coordination and group work on the project, spontaneously providing in addition crucial general concepts to follow, besides concrete hypothesis.

*Suggestions for managing the project*

Here we underline the main project realisation concepts expressed, suggestions to be passed to designers of the project, disaggregated by project lifecycle phase, produced in addition to the detailed candidate aged persons user needs (listed above):

A - Design

- Design and implementation need active user participation
- Need to design for user configurability of services, to allow personalisation to the individual aged person own needs and interests
- Allow for progressive levels of complexity

B - Implementation

- Disseminate through associations, rather than individuals
- Need for working on users in anticipation - with respect to their age –, to familiarise them to service technology use, when these are more accessible to them because less aged
- Need for training and familiarization with the system

C – Maintenance

- Provide content update and organise for provision of evolutionary maintenance
- Need for continuity and accompaniment

In order to harvest the success obtained with association members intervened, who have now gained a positive image of the project and a sense of membership, there is the equally needed objective to involve designers and institutional representatives in this process of increased participation, of process appropriation, and of reciprocal sensemaking between the perspectives of the different stakeholder groups.

## 2.5 Excerpts from the workshop minutes, exhibiting the above suggestions

### A - Design

- Design and implementation need active user participation (implicit)

Marcello: *If this makes an improvement to life, bring it on! That said, however, I would add that, living in contact with the elderly, you know that innovations can create problems for them. At this point it would be important to stimulate their interest, to make them lose their fear of the new. They are always in a state of agitation. The question they ask themselves is: will I be able to do it? That is why simplification is important.*

*There is a need for simplification, this is important. And the information that we give is just as important for the elderly people to feel more secure. This could also get them out of isolation, because they would have someone to talk to. At times, there is too much information, and this creates problems. A letter arrives, they do not even look to see what it's about and run to the association. This should help the elderly to have a different relationship with problems. For example, the ICI tax has created a lot of anxiety among the elderly, and large numbers have come to the Lega for information and help.*

*Marcello believes that IT is essential for the lives of the elderly, both those who are alone and those who are not. Because they don't want to bother their children, so they prefer to go to the association's centres, rather than ask their own children. It helps them overcome isolation. Lots of elderly persons have homes on the third floor without a lift, and because they cannot go out, they cannot even communicate. A programme of this kind (referring to the computer) is therefore very interesting for the elderly.*

Elena: *I work with the elderly, the very elderly (fourth age, aged over 90 years), who find it difficult to use any support apart from the Beghelli lifesaver. I have numerous doubts about these things. However, I think that for another type of elderly person they might perhaps be useful, not the elderly, but younger people. I understand that people now 60/65 years old are sprightly enough, and could therefore use information technology. The video showed tools and displays which would be complex for the elderly (those that she is thinking about).*

- Need to design for user configurability of services, to allow personalisation to the individual aged person own needs and interests

Andrea: *In reality there is another need, in relation to what Gabriella said: making individualised responses possible. I want to include only the health service, and I put only that button there. I also want the service to persons for other activities, as a centre I can give you a series of services, those that you want.*

*But how much does it cost?*

Andrea: *They say that it doesn't cost anything for the user. If the user doesn't want to access all the services, I can give them access to only those that they want. As regards use, I've never had a compressor, for example, now that I've got one, I couldn't do without it. The same goes for a car; I was born in 1936, I did without a car, then use made it indispensable. If you are afraid of too many accesses, I'll give you only one, but then you'll see that three months later you'll come to me and ask for others.*

Claudia: *This is also a way to familiarise the user with the system.*

Graziella: *Curiosity breeds necessity. I would be against limiting access to services.*

- Allow for progressive levels of complexity

Paolo: *Many needs have been made explicit: but can this project be updated, with adjustment to the goals and needs that arise? Because it may happen in the future that new needs arise that haven't been considered, or others that have become obsolete.*

Andrea: *Not a static stance from the outside (the authority that furnishes the service) and the possibility to update (example: add a new email address).*

Claudia: *So the problem of different access to the system comes up in relation to the differing abilities of people. Those who are more expert can do this updating, for others access will be simpler.*

Elena: *So there could be several accesses, one simpler and one more complex.*

## B - Implementation

- Disseminate through associations, rather than individuals

Elena: *I think it would be important to install the equipment in places where the elderly meet. Perhaps it would be useful for the elderly to begin familiarising themselves with these tools under the guidance of the people*

*running the centres for the elderly. This is yet another thing different from the initial project, but it's perhaps a way in which we could get the elderly people used to these tools.*

*Andrea: I think what you've said is very interesting, but I'd be worried that this tool might be a cause of isolation. For me, there's a missing link: how is what's behind this going to work, how would it be introduced, made usable, at what level, with what coverage? You've introduced three possibilities. I'll start with the first one: information about services. It's essential to give not only information about social services, but also information about the calendar of activities. I use this service to know where to go, to get to know the district, what activities are on offer day after day. Then there's individual information about doctors, health, transport. As regards e-mail, will these be fixed connections, the same for everybody, or will it be possible to individualise them? For instance, I can have a series of connections with public offices, associations, the same list for everybody, but I can attach to that list a list of family members, friends, relatives. A service of this type is a service that should be introduced gradually. There will be people that take part while their neighbours don't. It would be ideal if a whole block of flats joined in. How will it be possible to connect a substantial number of people? To bring people closer to this type of service from the technological point of view? Can a service of this type be introduced piecemeal?*

*Andrea: According to me, they are two interconnected problems, because as soon as the system is introduced, its capabilities become clearer, and therefore also the responses that the system can give to needs.*

*Claudia: Not therefore a turnkey system but a recursive situation....*

*Andrea: On the basis of what the lady said, I would target the initiative on organizations working in the community, associations, civic centres, the parishes; places where citizens can come into contact with the system to understand it and evaluate its potential. But I would also aim it at a certain number of individual situations, because these also serve as beacons, points of reference. But this is not a system suited to everybody. A system that interests young people is not the same as one useful for the elderly. What is the purpose of the technology, to get people to go out more or to confine them to the home? We've also talked about independence (going to an association rather than bothering the children). Then we have seen the need for connection among people, communication among the elderly (by e-mail, telephone, etc.). We've also talked about the type of information, which must be constantly updated. Have I forgotten something? You've stressed another important thing, that if people already know each other, they more easily interact virtually as well (while they communicate, they imagine the face of the interlocutor). We have also addressed the problem of how to approach people: through training, familiarisation with the computer; people exchanging information among themselves, with a tutorship system, learning among peers (very useful because things taught by people with the same training and language, learn more rapidly and with less difficulty). We have talked so far about the needs of the elderly, but also about how to meet those needs, about how, with what priorities, to introduce the computer support/service. Do you see other needs besides these, beyond the strictly computer domain?*

*Elena: A big difficulty that we see is when an elderly person starts to need support, they are hardly able to go and look for it at the prearranged points, because their relational abilities are so limited, it takes too much energy. So it's necessary to get there before the elderly person is in this situation. In fact, if at the moment of need, relationships are already in place, these are maintained. This therefore requires training work, an approach to the elderly so that they have relationships with the outside, the creation of a network. If we have created this need in the elderly person, then we want to know what's happening on the ground, to know what is being done, the things arranged by the authorities. Have I explained myself? At our meeting point, it's difficult to find elderly people with a reference network, so that when illness happens, the elderly person is alone. The elderly must be made to understand that this relational network is useful.*

- Need for working on users in anticipation - with respect to their age –, to familiarise them to service technology use, when these are more accessible to them because they are younger.

*Elena: It's a matter of age, a matter of education in the years to come, because this thing is within everybody's reach. Someone who retires now already knows how to use a computer (they've used one at the office), and this person already has a PC at home. So this initiative wouldn't be any use to them.*

*Barbara: I want to clarify what was said before. For me it is important to go for associations. Otherwise, this happens, when there is an innovation, those who access it first are people with medium-to-high educations. I cite an experiment at Casalecchio on environmental education, where they involved well-off people with medium-high educations. To avoid this, and to expand the information, it's better to deal with mixed associations at the civic centre. At this point collective information is provided, but someone is needed to give it continuity. The project must therefore be set up well, so that it's not a flash in the pan. The associations, for instance, to provide*

information, but also training, to give continuity and to give accompaniment which lasts until the people themselves can use these tools.

- Need for training and familiarisation with the system

Barbara: *My impression is that technology gets elderly people out of isolation and gives them a chance to communicate with a certain facility, but there's the obstacle of a high technology. So a facilitator will be needed to accompany them through the first stages. But it's not internet, which is everything and more. The information is selected and this facilitates access. This for me is a novelty. It is very important to be independent; it's fundamental, when one grows old...*

Elena: *In our district the people are especially elderly, so it will be very difficult to introduce this project. Will these elderly people therefore be left out of the project?!*

Laura: *That's why it's important that you are here, because you have the awareness, you know the situation on the ground. We have just heard the proposal of working with day centres, with associations, rather than with individuals. These are the sorts of things that we want to hear from you. There are very concrete things that can come out today, because the things that you are bringing out are very important.*

Claudia: *proposes that the discussion should be centred on a crucial question: what are the most urgent needs of the elderly? We have also addressed the problem of how to approach people: through training, familiarization with the computer; people exchanging information among themselves, with a tutorship system, learning among peers (very useful because things taught by people with the same training, the same language, are learned more rapidly, with less difficulty). We have talked so far about the needs of the elderly, but also about how to meet those needs, about how, with what priorities, to introduce the computer support/service. Do you see other needs besides these, beyond the strictly computer domain?*

Fulvio makes a brief reference to the project, saying that one constraint on the project is that it should involve one hundred elderly people. We thought of creating some micro-communities. Grouping together ten or fifteen people who belong to the same association, who know each other, so that they can communicate. Reciprocal knowledge as a stimulus to use the tool. The district selected is the Savena neighbourhood.

## C – Maintenance

- Provide content update and organise provision of evolutionary maintenance

Paolo: *Many needs have been made explicit: but can this project be updated, with adjustment to the goals and needs that arise? Because it may happen in the future that new needs arise that haven't been considered, or others that have become obsolete.*

Andrea: *Not a static stance from the outside (the authority that furnishes the service) and the possibility to update (example: add a new email address).*

Graziella: *Will there be a centre that does the updating?*

Barbara: *At the Banca del Tempo at the regional building we have an updating programme, and a manager who handles requests for changes. So that a person can log on via internet. So that it can be modified over time.*

- Need for continuity and accompaniment

Barbara: *... , it's better to deal with mixed associations at the civic centre. At this point collective information is provided, but someone is needed to give it continuity. The project must therefore be set up well, so that it's not a flash in the pan. The associations, for instance, need to provide information, but also training, to give continuity and to give accompaniment which lasts until the people themselves can use these tools.*

### 2.6 The management meeting, in anticipation of the event

Different perspectives emerged in the management of the meeting just before the event: involving Carlo, Sergio, Maria, Silvia, Mike, Gianni and Claudia, and indirectly by EU Commission, voluntary associations, old people. We anticipate here the sense of some of the perspectives that emerged, to contrast them directly to the actual outcome of the workshop which we have just described. We

immediately follow these remarks with excerpts from the minutes of the same management meeting which preceded the workshop itself.

Carlo: concerned for what the minister thinks and wants, for his interactions with the minister and for the minister's mood, less so for the EU project being at risk at the coming review. He appears little concerned for users and their needs, users seen more as challenge than as project resource. He appears somewhat unhappy for Mike's initiative to involve Gianni and Claudia, although he is very kind to them: he sees this initiative as a dangerous and difficult to manage addition, rather than as potential a help to the project. He expressed a desire to control and contain their intervention, wish for their immediate reporting.

Maria: preoccupied for the project, for Carlo's mood, for user perspectives. Concerned with helping Gianni and Claudia to effectively connect to Carlo, in helping them better understand Carlo's need/fear for their intervention in the event.

Sergio: concerned for system development aspects, more than for user system-use problems. Excerpts from the minutes of the meeting:

Carlo: *We want eventually to be able to use the system locally; European project (Mike) and project partners, are not interested in this. We want to implement a tele-company application, for aged people to chat with their friends or to talk to health care or municipality operators, the regional minister wants this. We need develop and implement some services that are of use to the minister. For this, users cannot have much say. Also in the meetings that we had with them so far, not easy to get, there has been a veto that I have tried to bypass. Today we shall show users some videos, presentation of users response to aid applications from Hull, some say that that project is similar to our own, others say no, on the contrary, they say not to show it. The other element that must surface: the chat application for the aged people, wanted by our minister. In the workshop, we shall show the videos on experiences from UK, then in the same meeting or in a follow up, let emerge - with Mike's methods - the chat for the minister. I tell you that even if they say no, we shall put the chat in. It is an experimental project, they shall have to take what comes.*

Sergio: *Our chat application is equivalent to radio transmission: with the chat a health care or municipality operator, alerted as through radio transmission, has possibility to intervene.*

Gianni: *Decision taking and brainstorming should be kept as separate streams of activity. With users, the workshop is more of a brainstorming.*

Sergio: *Brainstorming has been already abused, in this meeting, after 14 months, users ask what do you have to share. The workshop is inserted into an ongoing process. Other activities have abused user patience.*

Maria: *A lady from a local Parish expressed doubts. She was saying that old people are out of the reach of these technologies. Then there are syndicates, always attentive to what they themselves might need.*

Claudia: *Responses are needed to three types of needs, three levels to be presided, how can we provide answers at the same time to these three queries:*

- *The European project, needed answers in a short delay, with the coming review*
- *The minister, who wants something good in a short time, e. g., the chat*
- *Non Profit associations, syndicates, parishes, old people: what they expect from the project, how they have been involved up to now*

Downstream from a reflection on these three aspects, let's clarify today the objective of the user workshop event with the associations concerned. What do we want to attain? And then, how to organise the focus group, with which stimulus questions, etc.

Maria: *There have been occasions, both formal and informal, in which old people and voluntary association people have had the opportunity to ask for services and technology supported solutions, a prototype user interface has been presented to some old people, and a questionnaire has been passed to them on what could be of interest to them, with a menu style choice, same to the associations. All present, the setting was not appropriate for discussion, however, it was more of a presentation. This could be the outcome it has been said, someone has answered something, has attempted proposals; good account has been taken. One thing is clear, the project has a small local territorial community dimension, not that of a TV channel. Yet, it is not clear how much has been decided and it is firm of this object.* Carlo: *One thing must be there: the chat.* Maria: *During that meeting, we talked about videos on gymnastics, retired people and artisan work, the ARCI association and the town.* Sergio: *In the EU project, partners involved in technology design and development include in Italy us*

*of AID, along with The Dept of Physics of our University, for medical analysis, and partners in Belgium and in the Czech Republic, Germany.*

### **3 DISCUSSION**

#### **3.1 Contextualising the discourse**

Two types of underlying concern are being expressed in this user-oriented discourse. The first is an essentially conservative one about how the proposed innovation can be accommodated within existing structures and the second is about issues of protecting and developing social capital. These are interrelated because current structures of networks and institutions are seen by some of the participants as the conduits of existing social capital and the underlying concern is that the innovation will reinforce rather than undermine this. There is an interesting relationship between the concern with social capital we see here in an East-West discourse and the concept of political capital and service costs which is evident in the North-South discourses of planning and delivery. This expresses concerns about dangers of “proliferation of requirements” and the potential “loss of focus on concrete delivery”. This heterogeneity and divergence of interests, values and concerns is common in public sector developments and particularly in the deployment of ICT in the contexts of public care and development services. In the context of this particular work about the care of the elderly, there is also a third domain of discourse which has appeared only from a patient oriented perspective, in this account. This is the clinical perspective associated with the telemedicine development of the project. Again we see both threat and opportunity for existing structures and practice but in a context of clear asymmetries of control and agency between practitioners and patients and between the clinical and the social care domains. This discourse is concerned with human capital in the sense of fitness and health of the individual and of the population. This complexity is not something that conventional systems design methodologies has evolved to address. They are grounded in the concept of the enterprise solution which draws a clear boundary between the inside and the outside of a problem, assumes rationality, a single locus of control and ownership of resources on the inside and aims to cope with and exploit the external environment. In these circumstances the systems architect takes a simple (i.e. unreflexive) stance either in the service of management, as client, or as emancipator of the users. The intervention reported here cannot be analysed in these simple terms. The outcomes that are sought for the aging population, their families and communities and for the network of providers and commissioners of service can only be developed and delivered through trust and inclusive partnership across a wide care community. The “architecture” used in a development project to support and innovate in this situation needs to operate at the infrastructural rather than the structural level. Its designs and products do not deliver the envisaged care and the outcomes directly, they enable their users to co-construct these outcomes in a living system and network of care.

We have identified a number of discourses in this paper,

- the user / community,
- the political / managerial and
- the clinical / social care service perspectives

All of these together, are regarded as a client/user discourse in the conventional approach to the systems discourse which is ill equipped to deal with the agonistics if not conflicts that exist amongst them. The motivation of the intervention described here was not the simple one of giving a voice to the user (or a particular class of user) and initiating an element of conventional participative design although this certainly was an envisaged and positive benefit. The deeper objective was to provide contexts and mechanisms to work on the wider problems of enabling and facilitating the co-construction of infrastructure across the whole care community. It attempted this by undermining a stereotypical view that service is what we (providers) define and deliver to you (users who meet our qualification criteria) on the basis that we understand your needs and what is possible through negotiation with your collective representatives or as a result of our science and practice. Creating the possibility for innovation and transformative change involves revealing the contradictions and paradoxes inherent in these attitudes and creating and populating the contexts and occasions when mutual sensemaking can take place around alternatives. In this case, the participation process reveals

and evidences the wisdom of the users, challenging the assumption that it is only on the basis of a complete implementation that they are able to react, presumably in grateful acceptance.

### 3.2 Symbolic capitals, symbols and success

Despite the last remark, people need something explicit to react to which can become the talisman or token of the work they are doing and the understandings they are co-producing. Early in this project, the participants were asked to produce numerical criteria for success. This can be interpreted, on the one hand, as a typical North-South device which reduces evaluation to measurement and removes any responsibility for real engagement and understanding of outcomes and on the other as ensuring that work proceeds and is justified on a scientific and rational basis. Both are essentially first order presentations. The experience of significant parts of the project on the ground has been that the situation is complex and evolving, we are engaged in live (East-West) conversations. The possible outcomes cannot be enumerated even less, an outcome predicted. This is the antithesis to North-South planning. The core theses of this paper is that, faced with this inevitable combination of both ambiguity and uncertainty, the response has to be about balance, that is to say, about facilitating and nurturing appropriate transitions between sensemaking on the one hand and rationalist planning and delivery on the other. As part of our response to the demand for numerical criteria for success, and in the light of this principle of balance, we produced the following diagram. Its mathematical turn is, of course deliberate. The vertical axis is “wellbeing”. The purpose of the diagram is to provide a context for the discussion of what we mean by wellbeing and how we could measure it. All we say at this point is that high is good and low is not good. The horizontal axis represents human capital with full physical fitness on the right moving through frailty to incapacity at the origin.

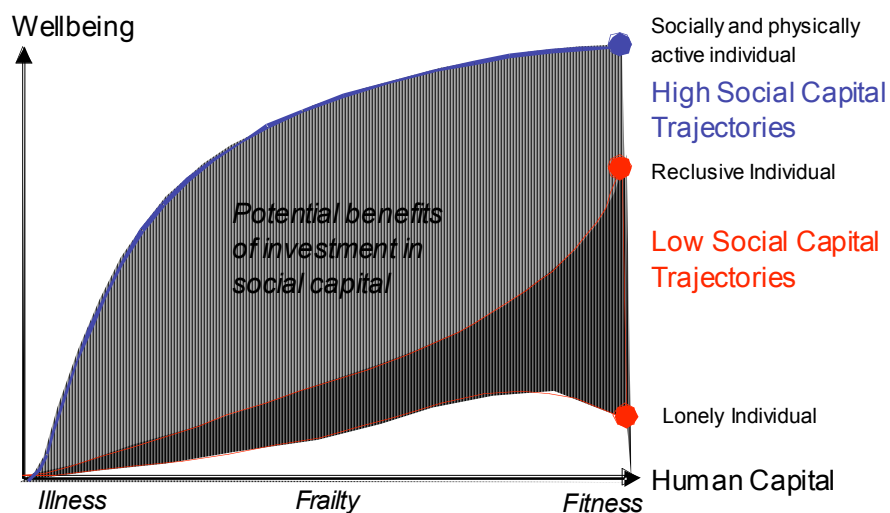


Figure 1. The ‘wellbeing’ diagram.

There are three trajectories: A (lower trajectory, in red) is a physically fit but very lonely and isolated individual. Perversely, a reduction in their human capital results in greater contact with health services – their social capital is temporarily improved. B (higher, in red) is a fiercely independent and reclusive



individual. Who are we to say that this is low wellbeing? However we can say that there is high vulnerability: any reduction in human capital has a marked negative impact on wellbeing.

These trajectories are contrasted with the convex trajectory of C (highest, in blue), an individual who has strong social networks and contacts. These step in to compensate for reductions of human capital (aging) and generate an area in the graph which is associated with the return on investment in this social capital.

Now this picture predates the workshop. Its purpose was to help ensure that the discussion about metrics did not fall into the trap of focussing on the delivery of technical processes and simple one dimensional “measurements of what is measurable”. Instead it needed to take account of the multifaceted nature of wellbeing and face the complexity and ambiguity of evaluating outcomes. Our exercise in participation has generated supporting evidence. The participants introduced notions which correspond to social capital into their conversations and underlined its importance. This material, together with the diagram create a more powerful “exhibit” for a next phase of engagement with both the clinical and the political worlds. For the latter, it raises the issue of the evaluation of telemedicine not simply as a clinical intervention which can be judged on the basis of double blind trials but also in consideration of its embeddedness in social contact. From the political perspective, the issue of service economy is raised and the need to support the active elderly in caring for the frail elderly rather than considering only issues of the qualification of need and capacities for access and delivery.

These represent the ambiguities, contradictions and paradoxes that inevitably emerge when these different world views come together. In this paper we have illustrated an aspect of the sorts of interventions that are needed to make progress in such multi-agency, interdisciplinary contexts. Such interventions must be sensitive to the need to support users moving from work within their existing conceptual frameworks to work on those frameworks in order to create the possibility for shared vision and trust and also to move back from sense making to planning and delivering.

This calls for a radical reflexivity on the part of those responsible for orchestrating and facilitating the participative and co-productive events and interventions. In supporting the participants taking their reflexive step back from their assumptions and paradigms, the facilitators must also be monitoring their inputs and impacts. Just as we have observed that, in the context of care, the technical infrastructure does not deliver outcomes but enables its users to co-produce them, this facilitation does not produce understanding and innovation, it produces and nurtures the conditions and occasions in which participants – the project members and the potential users of OLDES, make these productions.

## 4 CONCLUSIONS

This paper represents work in progress. It is an attempt to chronicle and evaluate a struggle to innovate, to understand and to produce a sustainable response to the pressing problems of the care and protection of an aging population. In that struggle, quite distinct world views of the lived experience of the older person and their families and carers, the pressures and challenges of practitioners, on managers and planners and on the politicians who strive to improve the experience of life of their constituents come together not in a rational orchestration of interests but in the agonistics of real life.

The reality of the distinction between what we have called North-South and East-West behaviours and attitudes, between Bateson’s distinctions of first order and second order processes and deuterio versus acquisitive learning is very apparent in the experience of the project. The challenges of maintaining an appropriate balance have been significant and are ongoing.

We have tried to describe, and provide some evidence for, a style of intervention which we have claimed takes a step further than what is usually conceived of as participative design. This is not based on a reallocation of rights and capabilities between architect/designers and client/users in what are still linear or iterative but two sided design processes. Such reallocations still leave the definition of the objectives and the contexts of development as preconditions of design and assume that the architectural language and conceptual framework are available to the participants in which the problem and the solution can be articulated. In circumstances where these assumptions cannot be

safely made, there is a need for an intervention which has the purpose of addressing this lack. In our classification of development processes, this necessarily implies the creation of what we have called East-West occasions which are furnished with material, exhibits and provocations around which the participants can engage with each other in sense making and the co-construction of a shared language.

Technical development can not be completely held up until this sense making process is completed but the technical design must co-evolve with it. In the initial stages, as described in this paper, we cannot afford for the early and necessarily fragmentary and delicate designs and technical products to be the subject of the sense making: this would invite rejection but, as the design and development process continues, then the engagement will shift its focus onto the emerging products and services. It is for this reason that we selected focus group material that was ready to hand and served the purpose. The central issue, however, has been to initiate the engagement and sense making and releasing the creative potential of the network.

In some senses we have selected the easy case in concentrating on the end users and the user associations. We can expect considerably greater challenges in engaging the clinical care community in the process but this is a challenge which must not be avoided.

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