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Redefining socially responsible designing to assist collaborative approaches to community engagement.

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1. Introduction

Every community faces issues. These issues become problems when they increase in number and intensity. The Sutton borough has problems similar to those faced by many other communities across the U.K.(Cooke and Kothari, 2001). Our sense of responsibility suggests that the intensity and recurrence of such problems should at least be minimised if not completely eradicated.

Problems such as unemployment, child poverty, drug and alcohol abuse, low educational attainment, security, trust, youths causing nuisance, anti-social behaviour etc. have been recognised as recurrent problems affecting communities (www.statistics.gov.uk). However, the greater difficulty which arises is that of complexity due to different problems simultaneously affecting the community. Systemic thinking is proven to be useful when dealing with complexity (Stowell, 2009). While moving towards a solution, systemic thinking requires recognising and understanding the different problems in a given situation holistically.

The recognised problems for Sutton borough were seen to be very similar to the ones faced by residents of the Pengegon Estate, Camborne. Pengegon is a neighbourhood named in the top 5% of the country's most deprived areas and has shown tremendous progress due to the application of the co-design method called the 'Dott' process during the Designing Communities project initiative (Dott Cornwall project, 2010). The Dott process ensures that the designer is a consultant who facilitates and encourages participation and contribution to shift ownership of social innovation (Cooke and Kothari, 2001) to local people living within the community.

This research on the Designing Communities projects (Dott Cornwall project, 2010) has brought to light an important gap between the theory and practice of design. To understand the gap, we asked,

Why was the Dott process able to gain success through design?

The apparent answer is that the Dott process indicates a clear extra effort on the part of the professional designer of not only engaging the actual users, but of facilitating them to co-

design for themselves (Thackara, 2005). Doing this extra bit of work comes from a concept we define as ‘Socially Responsible Designing’ (Papanek, 2000). Many people within the design community are motivated by the conviction that “(In general) design’s primary purpose is to help make the world a better place” (Kusz, 2010, p.29). Papanek (2000) argued that socially responsible designers should organise their own activities outside the mainstream market, yet he provided very few guidelines on the implementation of this argument. We, the authors, attempt to support the argument by showing the overlaps between theory and practice across different discipline perspectives, thereby helping to shift the conceptual focus of designers from materialistic to humanistic objectives through co-designing (Sanders, 2000), to enable them to engage in socially responsible designing. To do this we compare literature and borrow rational knowledge from diverse fields such as the natural sciences, social sciences, including systems and complexity, to justify collaborative methods in design. This review enables us to redefine the practicality of co-design methods for socially responsible designing to assist collaborative approaches to community engagement.

2. Definition of Socially Responsible Designing

Various definitions exist for socially responsible designing. Therefore, we begin by comparing different contexts in which the term ‘design’ is being used. Jones states that ‘designing is the initiation of change in man-made things’ (Jones, 1970: 3). Jones’ concern is the appreciation and manipulation of consequences brought about through design outputs and how design methods can best support the designer in manipulating and manifesting a desired change. Mayall defines design as ‘a process of change, an activity undertaken not only to meet changing circumstances, but also to bring about changes to those circumstances by the nature of the product it creates’ (Mayall, 1979:121). From the understanding of Jones and Mayall’s work, Spencer (2008) defines design as, “the purposeful activity initiated by the recognition of a perceived problem or opportunity, which through the application of energy, skill and resources leads to re-arranging our reality, set against a particular contextual backdrop of broader change so that the changes facilitate value and benefit to an identifiable quantity of people who come into contact with the changes”.

On the other hand, Victor Papanek defines design as “...the conscious and intuitive effort to impose meaningful order” and that design process is “the placing and patterning of any act towards a desired, foreseeable end”. Papanek states that “design is basic to all human activities” and “all men are designers” (Papanek , 2000: 3). He addresses the conscience of the designer and argues that designers should seek to make a positive contribution to society and the environment. In 1995, Victor Papanek reviewed Whiteley’s work ‘Design for Society’ and stated that it “would refocus the discussion from style to need and human issues” (Papanek, 1995).

Both these schools of thought appreciate design as a process of creating something new and bringing some kind of change. The former; ‘design as a professionally oriented activity’ does not necessarily mean that change brought by design may improve society. On the other hand, the latter; ‘design as a basic human activity’ defines design based on its quality of improving society.

Social responsibility in the first approach includes working well, knowing ‘how’ to execute a project, practising work ethics, understanding different aspects of how the work is done,

innovating within the boundaries and even outside the boundaries of work to generate a successful outcome. Awareness and consciousness through this approach are based on the aspects of the project, its outcomes and consequences that may be generated from long-term interactions with the outcomes. It includes following established conventions, particularly legal requirements, following a vision set by the organisation and ultimately benefitting the cause for which the work was established in the first place. In the context of business, Levitt warns that “corporate welfare makes good sense if it makes good economic sense but if something does not make economic sense, sentiment or idealism should not be considered” (Levitt, 1958). Friedman supports this definition and claims that the “social responsibility of business is to increase its profit” (Friedman, 2007).

In the second approach, being socially responsible includes ‘doing a bit extra’. This includes knowing ‘why’; the purpose behind a project, understanding the repercussions of the content, context, process and contributing beyond the norms and legal requirements. This does not necessarily mean surpassing objectives but making a distinction between decisions and choosing the ones which take care of long term consequences. In the business context, Friedman condemns this school of thought as socialist and warns such thoughts could be harmful for businesses economics (Friedman, 2007). Nevertheless they are highly likely to benefit the social and environmental wellbeing of the communities that they refer to. This form of designing is known as co-designing and is making an increasingly important contribution to various contexts of social need, (Sanders & Sappers, 2008).

Young, Cooper and Blair classify designing based on three different levels of design activities (Young et.al., 2001). ‘Design within a context’ includes a set of activities, skills and tangible conscious outcomes with certain meaning (aesthetic, creative, innovative etc.). This work has been characterised as the first level of design (D1 in Figure 1) and functions at the tactical level of creating products or artefacts. ‘Designing context’ includes sets of processes (methods, tools and procedures) for outcomes that have definitions and a technically logical rationale. This has been characterised by Young as the second level of design which operates at the strategic systems and service level (D2 in Figure 1). ‘Design of context’ is the more general activity of creating change, irrespective of means, ways and resources. This level of design shapes policies and creates meaning and purpose for design activities (D3 in Figure 1).

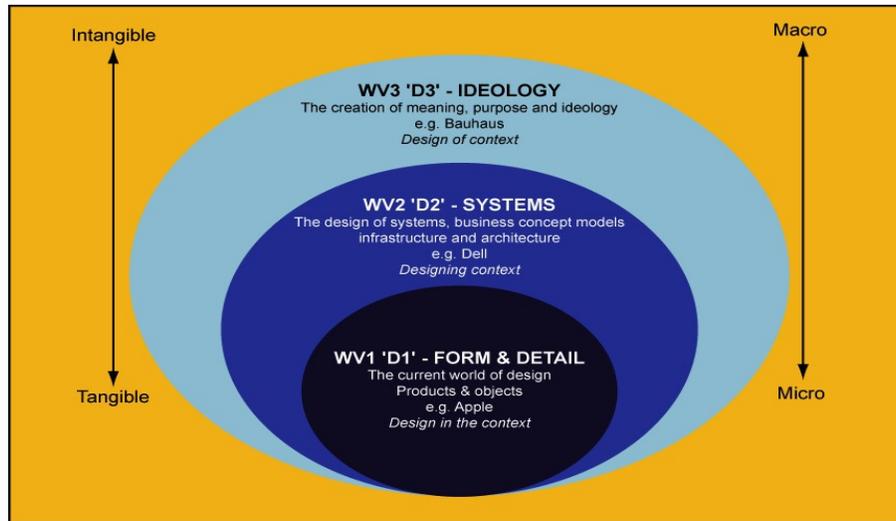


Figure 1: Three worlds of design activity, (Young et al, 2001) (original in colour)

Using this model for design, exploring the definition of socially responsible design becomes much more structured into three types.

1. Design used to create artefacts and products that benefit people and society at large through their use, interaction and ecological fit.
2. Design used at systems and strategy levels to shape the circumstances that affect the design of human activities and redefine its context.
3. Design at the level of ideology and policy to understand the meaning, purpose and implementation of concepts.

Any activity, (not just design) can be sorted into these three approaches to social responsibility based on the content, the context, the process used and the output generated.

In conclusion, the definitions of socially responsible designing, adopted from the paradigm of designing as a basic human activity, could be defined at three levels. The definitions are necessary for the adoption of a new set of values and procedures that aid socially responsible designing.

3. Why Design? A Social Science perspective

Increases in aesthetic demands of advanced capitalism, the adoption of “creative industry” paradigms in public policy and the need to adopt instantaneous and internationally recognizable shorthand to convey global market imperatives justifies the massive expansion of the design profession over the past twenty years (Jegou and Manzini, 2004). The turn in urban, regional and national settings towards so-called New Public Management (NPM), an approach to governance that applies private sector methods and metrics to deliver public services, is an important factor in design’s ascendancy (Cooke and Kothari, 2001). Research on the two-way relationship between people and the environment has been part of the field of design. Throughout the last 40 years, psychologists, behaviorists, sociologists, anthropologists, and historians, among others, have contributed to a body of knowledge applicable to design at many scales through a broad spectrum of methodological and theoretical orientations (LeCompte and Schensul, 1999). The ballooning of the industry is a direct outcome of a production perspective: design consultancies now sit at the table for decisions around conception, strategic planning, communications and delivery systems.

Nowadays, the gap between “commerce” and “culture” is harder and harder to distinguish. The ways in which work was deemed to be “creative” have been incorporated into economic systems and public projects. This is also an indication that the social sciences are starting to take more seriously the work of design (as well as related industries of advertising, marketing and branding) as a constitutive part of culture rather than as its adversary (Cooke and Kothari, 2001). It is simply no longer realistic to point to these industries as the “debasement” of all things creative, as classical cultural theory has done. Rather, recent works have acknowledged their impact as sources of knowledge, technique and expertise within political and societal spheres.

As creativity becomes the watchword of 21st century governance, business and culture, the radically different interpretations of the term make for unintended outcomes. Traditional notions of creativity as; individual, organic, and unstructured, clash with the injunction to render creativity measurable and transparent for the purposes of economic accountability,

government policy, and corporate planning. Chapters such as Anne-Marie Dorland's "Routinized Labour in the Graphic Design Studio," reveal how designers are regularly caught between the Scylla of providing scripted, systematized, and auditable material and the Charybdis of modelling behaviours and approaches that are "unstructured", "authentic" and "improvised". Meanwhile, business and government leaders themselves are increasingly encouraged to think and work more "creatively", absorbing lessons from the world of design.

Much of the historical framework for designers is based on a Victorian model of philanthropy and a Western tradition of missioning (www.desphilosophy.com). As design progressed, commoditisation of design led to a form of paternalism in the design community where the designer dictated what the needs of the people were, without taking into consideration multi-dimensionality and complexities of the 'lived life'. The notion is that the designer is the consultant to come in, identify the issues and then solve the problem for an "under-served" community. Lack of research has been pointed out as one of the major reasons why there is not more support for social design services (Margolin and Margolin, 2002).

Professions other than design have a longer history dealing with the affairs of people. Social work is a notable field. However, the reason to choose design over social work is that social science refers to social development rather than social innovation. Social science has recently realized their own dysfunctional effect on the relationship between theory and policy during practice, in particular the 'tyranny' stemming from the use of participatory development for new social services. Although face-to-face participatory processes appear very powerful in terms of what they seem to achieve, the power is frequently delusional, and manipulative and malign forces outside the cognisance and influence of participants are ignored and sustained (Cooke, 2004: p42). Cooke and Kothari advocate closing participation down for these reasons but where it is used it should follow a number of rules:

1. Don't align or work for sponsor organizations that exhibit dysfunctional behaviour.
2. Carefully construct the form of co-optation.
3. Data belongs to those from whom it is taken.
4. Only work in languages (and media) you understand.
5. Always work for local rates, or for free!

Derived from Cooke (Cooke, 2004: p42-55).

Cooke and Kothari also state that the participation of multi-disciplinary stakeholders, including professions, is crucial for any co-creative social development project as they bring different perceptions and criteria to the solution, (Cooke and Kothari, 2001, p.2-4). That it is essential to draw together all key stakeholders for common intention and collective innovation (Kothari, 2001, p.134). In social services, the general practice is of following a six step problem-solving process of intervention. The steps include; engagement, assessment, planning, implementation, evaluation and termination. Similarly, certain recently developed and some old social design practices such as Inclusive Designing, Universal Designing, Designing for All, Human-centred Designing, Co-Design, Participatory Designing, Designing for Social Innovation often assert engagement with different stakeholders and end users in different meaningful and instrumental ways. These practices try to unearth a relationship between designing and social responsibility by holistic understanding of various needs, interpretations and personal world views. The notion that creativity and designing are a sole responsibility and privilege of the designer is challenged through this outlook of inclusive co-designing, where the designer is a facilitator. At this point it is crucial to stop and ponder on some questions. Those urged by Margolin and Margolin include:

“How can a designer contribute to a collaborative process of social intervention?

What are current and future propositions in this regard?

How can the perception towards designers be modified to create a reputation for design and the socially responsible designer?

How can agencies that provide funding to social welfare projects and research gain a stronger perception of design as a socially responsible activity?”

Also, questions could be raised as:

What techniques does design exploit to "know" people and what value does

“understanding people” bring to design?

Does involving the end user and other stakeholders diminish the role of the designer or render it obsolete reducing the value of their professional expertise? Or does it provide opportunities to exploit users’ intelligence by harvesting their ideas? And what body of ethics guides these relationships?

Considering the power relations based on knowledge within a project raises questions such as:

Can stakeholders/users be equal partners with designers when structurally they are in a less powerful position?

In a business context, questions asked could include:

Can users be seen as co-inventors with rights to the Intellectual Property?

Design activism has emerged in recent years as a term to denote creative practices that invoke social, political and environmental agency (Salustri, 2010). Mills (1958) insisted, “As an ideal, craftsmanship stands for the creative nature of work and for the central place of such work in human development as a whole. As a practice, craftsmanship stands for the classic role of the independent artisan who does his work in close interplay with the public, which in turn participates in it” (pp.74). For Mills, the true craftsman made no distinction between work and culture; his self-expression is at once a societal contribution. Mills’ view of craftsmanship and recent critiques of the role of labour in the creative industries show that the division between work and leisure is increasingly blurred. Therefore, typically design activism distances itself from commercial or mainstream public policy-driven approaches. Instead, it embraces marginal, non-profit or politically engaged design theories, articulations and actions. Arguably, ‘design activism’ is a response to particular contemporary conditions of geo-political change, social conditions, economic practices and environmental challenges. There have been different qualities of design activism in different locations, according to various issues such as scale, mode of intervention, contexts of governance, and so on. According to Thorpe (2011), it would be foolish to claim that any one of these (social) movements was entirely responsible for changes in the social problems they address; it would be equally foolish to think that they had no effect (Taylor and Jordan, 2004, pp. 51). Earl is more specific in commenting that, Social movement consequences are notoriously hard to define. Even within the relatively more settled area of political outcomes, numerous scholars have bemoaned the difficulty of defining outcomes (Earl, 2007, pp. 509). Still, in cases where we see cities and states adopting an advocate's green building rating system (the US Green Building Council's LEED rating) as their own building standards, the correlation seems very strong. In product terms, David Hess has written about "product-oriented movements" in which the struggle is often over the definition, position, and scale of alternative technologies and products. In these cases (for example wind energy, or nutritional alternatives to pharmaceutical treatments), he notes that the alternatives tend to "stick" to the extent that

they can be transformed to complement existing commercial and regulatory paradigms. The question becomes - is this success? Or is it co-optation of the alternative?

As previously mentioned, Papanek's argument that socially responsible designers should organise their own activities outside the mainstream market was not accompanied by guidelines for its implementation. As design is holistic in its knowledge base, it cuts across a variety of situations and has capability for solving a host of different problems. Also, methods in environmental design are still concerned with social aspects along with participatory design and the influence of post-modern and post-structuralist modes of inquiry.

In conclusion, design should be applied to solving specific contexts of community based problems to promote community wellbeing through co-designing and co-ownership of solutions with people from the community.

4. Why Co-operate while Co-designing? A Natural Science Perspective

To understand co-design, it is necessary to understand the effectiveness of co-operation. In 1859, Charles Darwin published, with compelling evidence, the theory of evolution. Mutation and selection have been the two fundamental processes of evolution (Nowak and Highfield, 2011). Nowak argues that there is a third pillar in this process, called co-operation which leads to the construction during the evolutionary process. Jim Platt argues that all knowledge is created through interactions. Thus in any human activity, interaction will mathematically have participants who bear a cost (c) and gain benefits (b), where cost and benefit are measured in terms of fitness, which is the rate of reproduction of species, genetically or culturally. The pay-off matrix (figure 2) assumes benefits are greater in co-operating than the cost of participating so as to justify co-operation. Thus, $b > c > 0$

Pay off _(You gain, I gain)	I co-operate	I do not co-operate
You co-operate	($b-c, b-c$)	($-c, b$)
You do not co-operate	($b, -c$)	($0,0$)

Figure 2: Pay-off matrix

As seen in this example, the theory of natural selection should have favoured not co-operating which means natural selection process will destroy what is good for evolution, as multi-cellularity in biology and cultures in society both are a result of co-operation. **Nowak** justifies that there are five mechanisms for evolution of the process of co-operation. They are:

4.1 Direct Reciprocity: This mechanism is based on the theory that, interaction between two entities is repetitive. In order to develop a strategy for determining the next decision of an entity, initially, the ‘Tit for Tat’ model was derived from rationality in economics by Anatol Rapoport. It showed that mathematically humans will tend to either co-operate or defect with

each other, based on prior experience (You co-operate, I will co-operate; you deflect, I will deflect). Though, this strategy favoured co-operation as the first move, and was considered an appropriate strategy for an ideal situation. However, when biologists considered that accidental deflections can occur, then the tit for tat model inevitably moved towards non-cooperation. Thus, the strategy was evolved to ‘Generous Tit for Tat’. Generous tit for tat added a probability $(1-c/b)$ for forgiveness where, in reciprocation to a defection in an earlier instance, co-operation could still take place the next time there is interaction again, with a probability. This strategy inevitably leads towards eternal collaboration, which is again unreal. Nowak explains that whenever, a system gets close to such co-operation it invites elements that always defect thus bringing the system to collapse and entities in the system back to a tit-for-tat strategy. He points to the events in history to put his point across. showing how the collapse affects societies e.g. economic crisis, war and peace etc (figure 3).

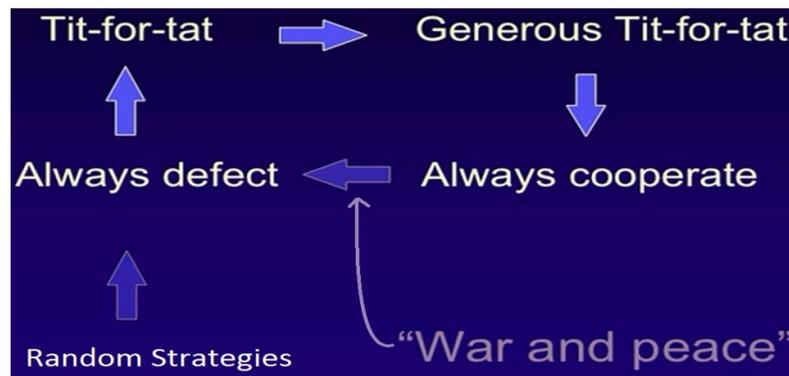


Figure 3: Map of Strategies for Society to achieve Co-operation

Nowak also claims that there is no equilibrium state and this process is continuous and gives features for a winning strategy:

- 4.1.1 Generosity: The ability to accept a smaller share of benefit (b). Remember that this will work when an entity is involved in more than one interaction.
- 4.1.1.1 Hopeful: The intention that the first moves of both entities will be towards co-operation.
- 4.1.1.2 Forgiving: The ability to reciprocate defection with co-operation in the next interaction.

4.2 Indirect Reciprocity: This mechanism is built on the principle of ‘I help you, somebody helps me’. Thus the strategies are directly dependant on reputation development. Unlike direct reciprocity, which was dependant on spacial recognition capability, indirect reciprocity

requires the capability of language along with spacial recognition and the ability to gossip. In figure 4, Nowak shows how gossip spreads reputation

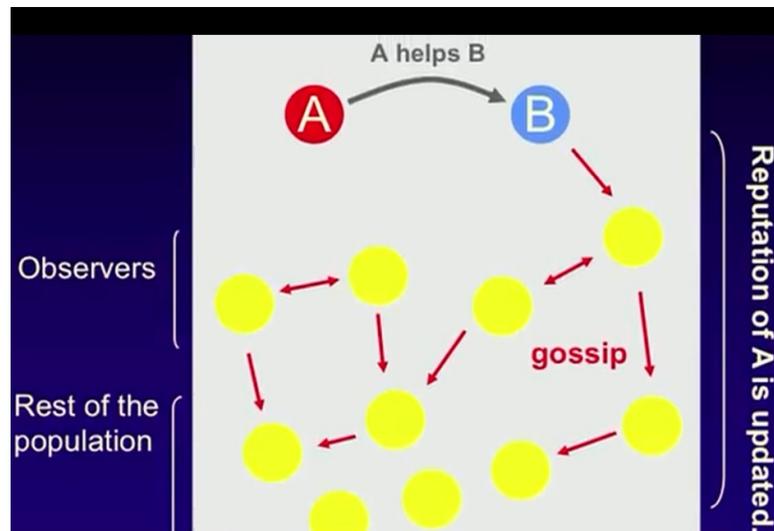


Figure 4: Gossip spreads reputation

Based on the lecture by Nowak

4.3 Spatial Selection: Neighbours help each other

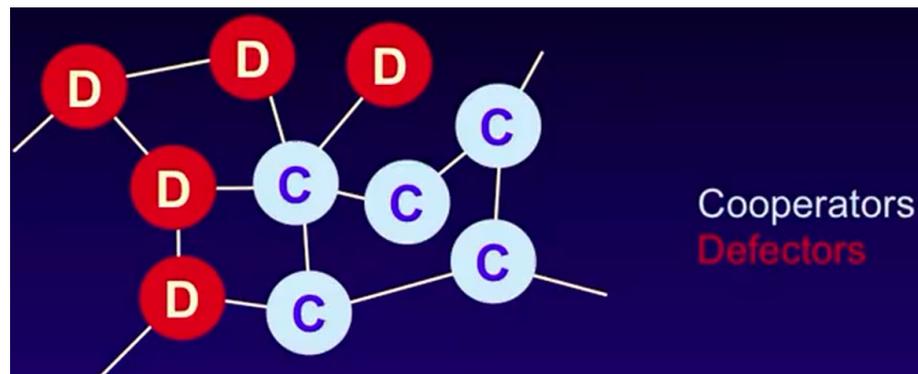


Figure 5: Spatial selection

4.4 Group Selection: Humans can faculties span the full range from self-interested individuals to "organs" of group-level "organisms"(Wilson and Sober, 1994). Human behaviour not only reflects the balance between levels of selection but it can also alter the balance through the construction of social structures that have the effect of reducing fitness differences within groups, concentrating natural selection (and

functional organization) at the group level. These social structures and the cognitive abilities that produce them allow group selection to be important even among large groups of unrelated individuals.

4.5 Kin Selection: The evolutionary mechanism that selects for those behaviours that increase the inclusive fitness of the donor is through selection of genetic relatives. A well known example of kin selection in operation is the study of alarm calls in squirrels by Paul Sherman (1977. Nepotism and the evolution of alarm calls. *Science* 197:1246-1253). In this study, Sherman studied the likelihood of males (who do not nest near genetic relatives) and females (who do nest near genetic relatives) to give alarm calls that warn others of predators while placing the caller at a greater risk of attack. It turns out that males are less likely to give such calls than females, thus supporting the kin selection hypothesis.

Nowak states that humans are super-cooperators because they execute all 5 mechanisms of co-operation. He suggests that humans have this capability and can execute features such as forgiveness, hope, generosity and altruism.

5. How to achieve successful co-designing? A systems thinking and Complexity perspective

Complexity arises in a community because of the increasing number of problems and due to a solution to one problem creating a new problem. Relationships between individual members in a community are difficult to define and this makes creating and implementing solutions difficult.

To approach complexity with systems thinking, firstly, it is necessary to understand what does systems thinking mean. Systemic thinking believes the whole exists as greater than the sum of its parts, as opposed to scientific thinking, which believes that whole equals the sum of its parts. Thus, scientifically, understanding parts will lead to an understanding of the whole. On the other hand, systemically, a lot of information is believed to exist within the interaction of parts. Thus, observing different parts will never give a holistic understanding of the system and its problems. The solutions generated by only understanding parts will generate new problems in other parts of the system as a result of causality (Stacey, et.al., 2000, pp 14). The effects of causality can be considerably reduced by holistically approaching the issue and solving the problem systemically rather than scientifically.

While applying systemic thinking, features to be considered are:

5.1 Boundary, input and output:

Every system is defined by its boundaries. Understanding the boundaries of a system is important to separate the system from its environment and understand the effects of environment on the system. Boundaries also help in clear definition of sub-systems and interactions between them. The effects of environment on a system are considered as inputs to the system. They bring changes in the system and there is very little control a system can exert over these effects. The system brings about some effects to the environment and these are considered outputs of the system. These outputs are subject to causality and will in-turn affect the system. Understanding these aspects makes defining problems, generating solutions and studying the effects of the solutions more explicit. The most recognised method of generating these definitions is Soft Systems Methodology, which uses rich inquiry to explore different stake holder's perspectives (Wilson, 2001). Soft system methodology (SSM) is strategic in nature and seeks to define and redefine problems looking from different

standpoints to acquire a holistic understanding. SSM aims at recognizing problematic situations, clearly understanding them from different standpoints and placing them in context so as to rationalize them. Understanding the way in which people interact and, through this, construct their social worldviews is a variable and context-specific method (LeCompte and Schensul, 1999). Soft system approach stresses two key aspects of problem solving. First is the breadth of analysis, where SSM deliberately looks for interaction between the system and its environment by drawing and redrawing the system boundary to include as many aspects of the problem as possible. Second is the point of view of the problem owner. Here, we try to understand the environment in which a system exists. This helps in recognizing the viewpoint of the main players that appears to cause the problem.

There are seven basic steps of the SSM (Checkland, 1999) as shown in Figure 6. Due to time constraints, a short version of SSM will be used, which includes only first four steps. These are:

1. Recognizing the unstructured problem situation and problem owner.
2. Expressing the problem situation using a rich picture.
3. Formulating root definition and CATWOE analysis
4. Developing Conceptual models eg. Activity model.

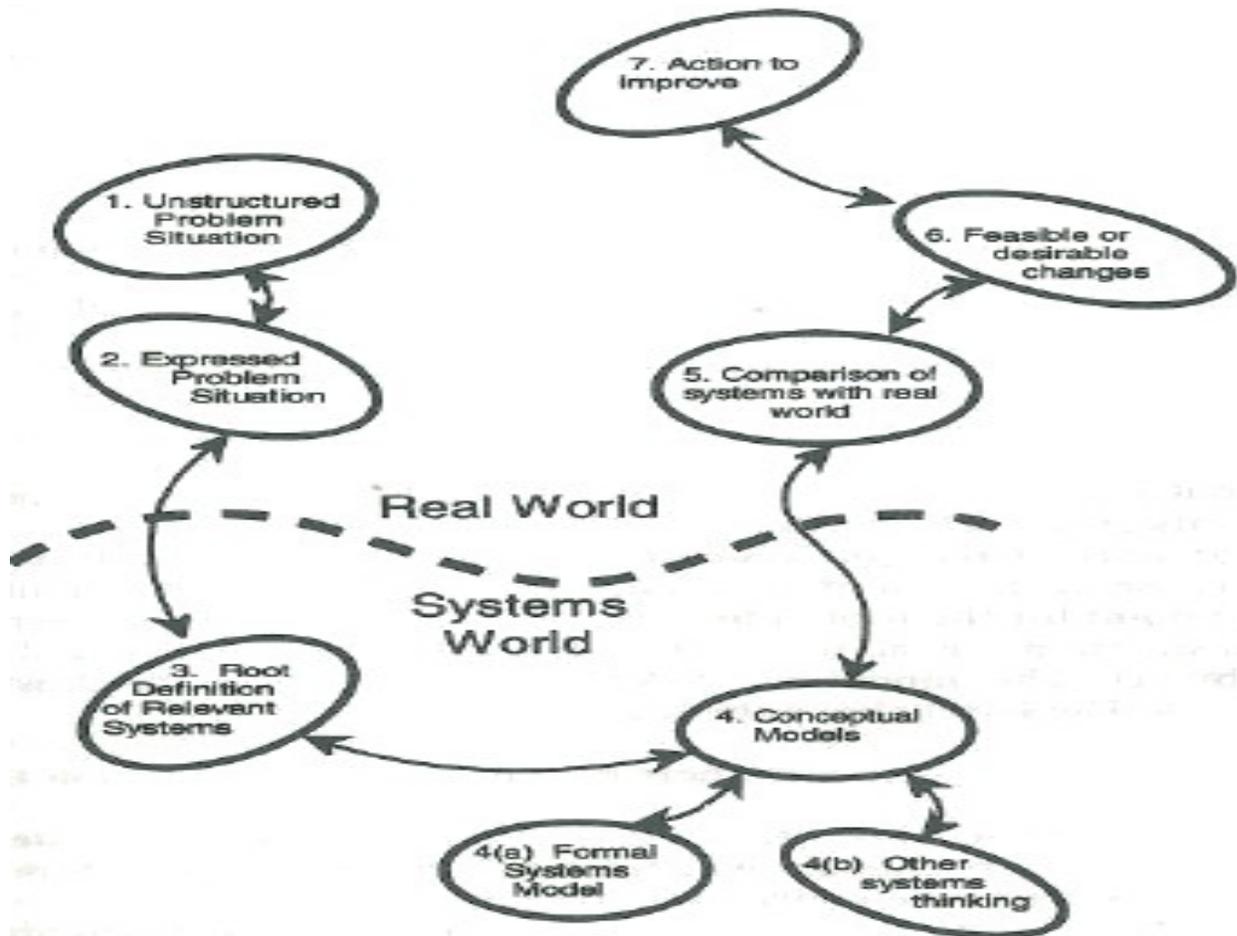


Figure 6: The seven steps of soft system methodology

Source: Checkland (1999)

Once the boundaries are decided and the input and output to the system are noted, the next step is to start observing inside the system. This means observing sub-systems and their interaction and knowledge generated during these interactions.

5.2 Subjectivity:

Putnam (1979) explained how scientific thinking is based on an assumption that observations are carried in a world which is 'consistent and stable' and these observations 'will deliver true facts about its (the world's) nature free from value based theory'. However, the systems approach believes that every observation is subjective, and Stowell (2009) extends the thought that, philosophically, it is not possible to have an objective understanding of parts of the whole. Maturana and Varela (1987) support this thought and provide a host of scientific reasons for this subjectivity. They focus on and highlight that human sensory organs are limited and that the human brain interprets these incomplete observations as complete, thus making every observation subjective. The observations thus are of a qualitative nature to understand the reasons behind them. There also exists a need to gather different opinions to populate a holistic viewpoint. Stowell and Champion (2008) suggest that if all the participants or stakeholders could be assembled at one time in one place then, the gathering of information can be made holistic through a variety of approaches such as Appreciative Inquiry Method (AIM).

5.3 Self organising principle:

The concept of self organization has been generated from the study in complexity theory (Wheatly, 1994). It basically implies a self sustaining state of the system. Managing growth may have less to do with creating and executing a master plan for change than with creating an infrastructure that enables periods of self-organized change to occur (Anderson, Covin and Slevin, 2009). The system adapts itself to the changing conditions and creates new ideas to grow and develop, very much like a living organism. However, it has to be guided by some principles (Capra, 1996). The principles of self organization refer to a few simple rules about how work should be accomplished. These principles address the system's approach to capturing and sharing meaningful information, building relationships, managing organizational politics and its leadership style. When formal structures and systems cannot keep pace with the complexity of the rapidly growing ventures, these principles provide an infrastructure that facilitates self-organizing behaviour. The review of literature on managing complexity by self organization gives birth to the following set of rules:

1. Accepting ambiguity and chaos as a part of daily life in high-growth, fast-changing ventures.

2. Capturing and sharing meaningful information within and outside the system, building relationships and promoting collaboration.
3. Managing systemic politics and diffusing complexity by restructuring the system to ensure that specific individuals, groups or sub-units do not get overwhelmed.
4. Reducing complexity by outsourcing some activities or simplifying the venture's operations;
5. Redefining complexity by bringing together people with a variety of different functional perspectives and capabilities to develop a deeper understanding about why operational problems exist and how they could be resolved. This might include hiring new personnel or acquiring new resources (such as new information systems) aimed at improving systemic effectiveness.

5.4 Complex adaptive systems:

Complex adaptive systems (CAS) are made up of a large number of agents which interact with each other in a non-linear fashion (McMillan, 2002). This means the opinions and suggestions of stake-holders are dependent on and change based on new information. This creates higher levels of complexity. Waldrop (1994) states that, the reason for increases in complexity is that CAS mostly lack central controlling mechanisms. He further mentions that CAS have self organising attributes, yet they are different from Self organising systems because of the way they react to events, they constantly revise and change their structures to try to turn whatever happens to their own advantage (Waldrop, 1994).

In conclusion, systems thinking can help professionals gain a holistic understanding and consideration of issues arising in one part of a system. Tools such as SSM, AIM, CAS and self organization can help resolve these issues by generating solutions with the members from the system using a systems perspective.

6. The Case of Pengegon Dott project

Designs of the time (Dott), is a grass roots programme conceived by the Design Council, that involves local people in the design and development of the services they use. Dott worked in Cornwall, with Cornwall Council, University College Falmouth and the Technology Strategy Board to run design projects that develop sustainable solutions to social, environmental and economic issues. The aim was to demonstrate how innovative thinking can add value to Convergence, European economic regeneration funding, and other investments, and offer an approach to driving transformation and creating lasting shifts in expectations and ways of working.

Dott developed a series of practical projects over a year, comprising sustainable solutions for social and economic challenges. Achieving this increase in the capacity for innovation within a region was achieved by building skills, knowledge and awareness through the Dott approach. Dott includes designing with intention to maximise the potential to innovate with people in an area. The most valuable legacy that Dott aims to create is the development of the local people to enable them to generate new ideas, acquire skills and deliver bold and visionary projects. Empowering citizens and communities to innovate makes the community capable of facing the escalating costs of socio-economic change, improving their sense of community based problems such as growth, health, food and security. These problems occur at grass root levels and are too big to be tackled by government alone. Dispersing the 'capacity for innovation' to a broader group of people potentially empowers them and they become efficient in developing new solutions. Co- design means end users judge the quality of existing services and make informed decisions about potential improvements. This transfers ownership and inspires action on problems which are dormant and exist due to a lack of initiative for change. Based on the premise of a highly educated yet underutilised creativity within the workforce, it can add value and meaning to individuals' lives enabling them to be part of something bigger, that resonates with their value systems and supports community cohesion. Dott empowers and motivates citizens by building their confidence and providing the skills and knowledge required to take action to solve the problems they face. Creating collaborations between local people and experts, working with world-class

designers enables communities to achieve a greater degree of professionalism in the management and outcomes of their activities. Typical stages in a Dott project include the phases: Diagnose, Co-discovery, Co-design, Co-delivery and Legacy. Change is created by operating on three levels as follows:

1. **Practice:** Demonstrating new thinking in community centred innovation through working directly with citizens on ten practical projects, in particular generating evidence to show the return on investment (ROI) and value for money (VFM).
2. **Capacity:** Developing local knowledge and skills to replicate and scale the projects by creating the conditions for effective legacy. Fostering an entrepreneurial culture by instilling the skills and attitudes needed for creative enterprise.
3. **Policy:** Developing new insights that can inform national policies. For example showing how Big Society might work in practice with local communities.

Significant awareness of the role and importance of leadership in the collaborative mix lies with the designer. Identifying qualities in designers which fit with the collaborative leadership models is the key for developing local capacity. Also designers enhance their professional skills ‘on the ground’ in areas of collaboration, co-design, service development and multiple stakeholder management. Two key drivers for the process of change are:

- ✓ Increased participation from the public in services, from top down delivery to co-creation.
- ✓ Radical innovation to generate entirely new models of service provision and commissioning.

Based on Dott report

The challenge faced is not in the generation of new ideas, but in the successful implementation of the good ones. Another challenge concerns the affect of ‘democratising design on designers’, which polarises them. A vocal core community emerges that is interested in new ways of working, and another much larger group emerges that is relatively uninterested and regards the process as a departure from design practice without a proven

business model. Identifying which designers have an aptitude for this way of working, for developing new business models to support their practice, led to characteristics that the Dott designers, called the ‘Dott ethos’, which is based on an action research methodology (Dott Cornwall Report, 2010).

1. **Be a humanist:** Focus your effort on what is desirable as well as what is technically possible.
2. **Stay positive:** Everyone is creative, and our collective creativity is greater than the sum of the parts.
3. **Unite over a common quest:** Find a question everyone cares about and has a passion to solve.
4. **Think big:** Great design can and does change the world.
5. **Start small:** Build ideas and solutions with people not for people.
6. **Get out:** Design in the real world; it is an infinite source of inspiration, opportunity and fun.
7. **Splice things up:** New ideas emerge at the intersections between disciplines, subject knowledge and experience.
8. **Get it wrong:** In the current climate it is more important to fail fast than succeed slowly.
9. **Design doesn’t stop:** Create platforms for participation rather than fixed solutions, as these will be more flexible to changing needs and evolve in real time.
10. **Show value as well as have values:** Good design doesn’t need to cost more, it needs to do more.

The steps applied to one initiative in Cornwall include (www.dottcornwall.com):

1. **Visualisation:** Using information from the previous stages, a large-scale poster visually summarized the needs of residents, which was used to facilitate discussion and provide opportunities for participants to add new ideas or raise issues.

- Space:** Service providers were asked how much space would be required for each activity and theme, to help them deliver their services to the community. Dott designers also asked them to consider how the space could be shared and maximised between activities.

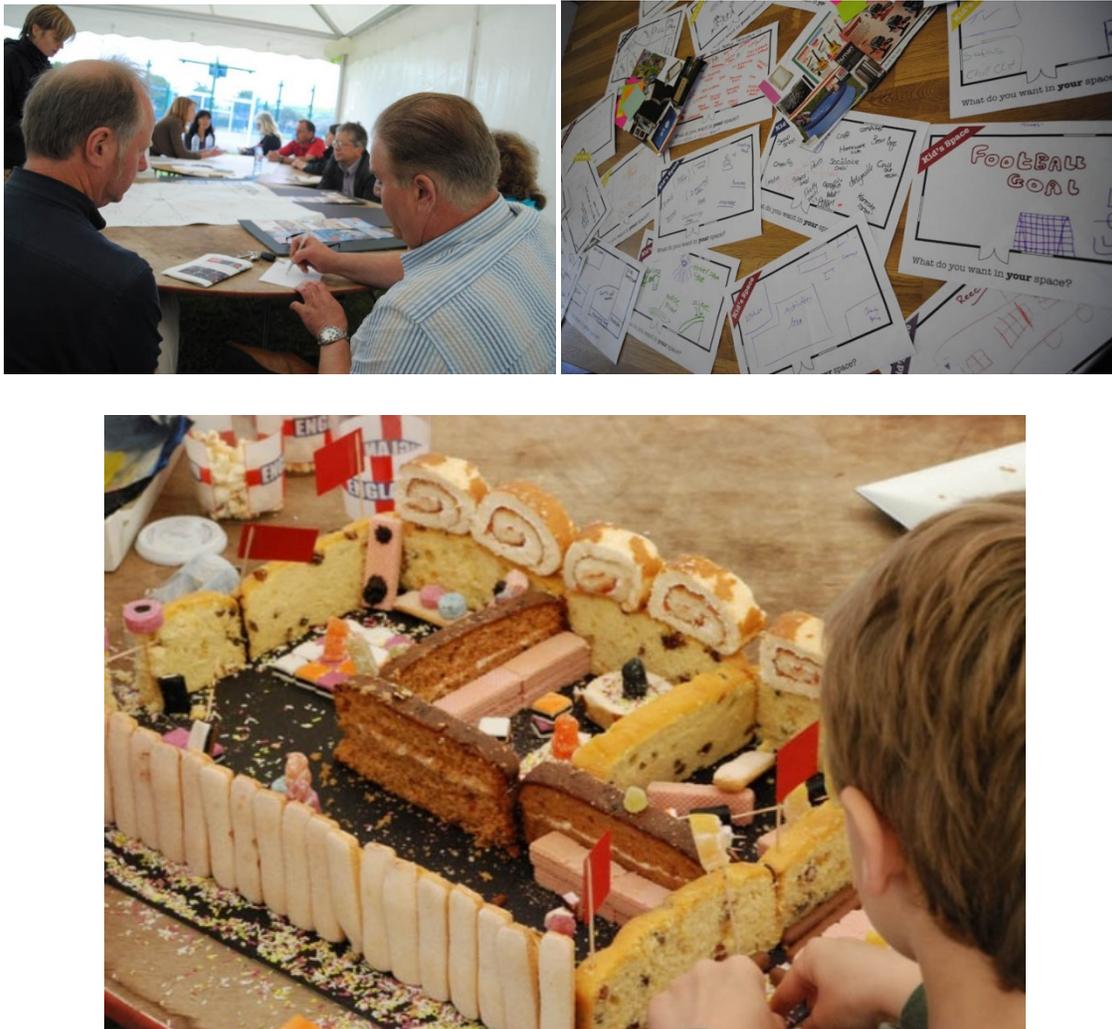


Figure 7: Dott Cornwell Project

Source: www.dottcornwall.com

- Sharing:** Residents used floor plan templates to sketch out and write down their ideas of what should go in the community building. Postcards collected ideas for a suitable name for the centre.

4. **Connecting:** Following a concern from the Cornwall Rural Communities Council that “residents were asking for lots of things that already existed”, both groups talked about the need to build stronger links between the current services and facilities available to residents.
5. **Modelling:** Children and parents came after school and created floor plans and mood-boards (Dott Cornwall Report, 2010) and made a community-centre model out of cake and sweets. This was inspiring and insightful, demonstrating how it was possible to get a community motivated to participate.
6. **Co-design Workshop:** Dott described the best bit of the day was making the community-centre model out of cake & sweets! This gave the designers an opportunity to talk to some of the mothers about the idea of a community-centre reward card / loyalty scheme, which they thought would work really well. The basic idea was that residents could exchange volunteer time for points that they could cash in for things like cinema tickets, food, electrical goods, travel vouchers etc. During the workshop everyone decided that the building should be: Accessible, inclusive, inspiring, friendly, understated, practical, flexible, innovative, sustainable, eco-friendly and in keeping with the local environment.

7. The applications in Sutton borough

According to reports of Sutton Community Strategy, the main concerns of the people in Sutton borough can be divided into three major categories:

1. Health and wellbeing

- ✓ Deprivation
- ✓ Unemployment
- ✓ Economic growth
- ✓ Environment and transport

2. Crime and community safety

- ✓ Nuisance by local youths, especially after being drunk
- ✓ Security breaches
- ✓ Sense of security within the people

3. Education

- ✓ Lifelong learning
- ✓ Community development and inclusion
- ✓ Sustainable community development

From the Designing Communities initiatives in Cornwell, the observation is that all the problems mentioned for Sutton could be addressed using the Dott process. This process follows the basic idea of socially responsible designing put forward in the sections above. The strategies of SSM and Appreciative Inquiry Method could also be adopted by designers to assist the process of conducting their projects. Designers serve as excellent translators of community development initiatives through their inherent qualities of creative leadership, facilitation and co-design expertise. The three pointers of generosity, hope and forgiveness, along with the ten point ethos of Dott have the potential to serve as the framework to mutually shape

the leadership qualities of the Designer whilst inspiring participants involved in community social innovation contexts..

8. Conclusion

The concept of socially responsible designing can work at three levels, namely, the level of; form and detail, of system and context and of policy and strategy development. Designers hone their skills at all three levels, but most projects work at the level of form and detail. Design for social responsibility means different things at these levels. At The level of **form and detail** social responsibility can be inculcated through the ecologically sound selection of materials and processes. At the level of **system and strategy**, social responsibility means designing with people for socially inclusive and user-oriented service development. At the level of **ideology and policy**, socially responsible designing could be achieved using co-designing to facilitate and generate a community's creativity and responsibility for its own social innovation.

We recommend designers to initiate their projects at the level of strategy development to facilitate discussions at the level of systems between local end-users, stake holders, financiers and designers and finally guide local people to work at the level of form. This recommendation comes from the notion that “Great design can and does change the world” and with a systemic view that “collective creativity is greater than the sum of its parts”.

The advantage of socially responsible designing is that it always ensures that efforts are directed towards the facilitation of discussion about the perceived solutions by the end users. General designers take up the responsibility of finding design solutions and then use their skills to implement them. Socially responsible designers let the ownership shift from themselves to the end users. Socially responsible designing requires creativity on the part of the designer, but not for finding solutions; it requires vision but not for creating solutions; it requires leadership, but not for dictating solutions. The socially responsible designer needs creativity, leadership and vision to empower users and help them generate a sustainable solution for themselves.

Along the journey of socially responsible designing we provide the designer with certain tools such as Soft system methodology, Appreciative Inquiry Method, Dott process and also the concepts of Complex Adaptive Systems and Self Organization. Science shows us the fundamental basis for the evolution of socially responsible designing. We propose that designers use the concept of

generosity, hope and forgiveness, together with their evolving set of practical co-design methods to facilitate this evolution.

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