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Innovation, Creativity and the application to a Study of Social Housing in the UK

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Abstract: Innovation is a word that is used within industry and the provision of public services but what does it mean? This paper looks at the history of innovation, different academic definitions of what innovation means and different academic models of innovation. It looks at the relationship with creativity which has been highlighted as an important part of the innovation process. The paper then looks at academic studies on the application of innovation within the social housing sector in the United Kingdom. The paper identifies that innovation is either a new product or service or an existing product or service that is improved.

Keyword: academic, Creativity, Housing, Innovation, Social, Public

I. INTRODUCTION

Throughout its history innovation as a concept has been conceived, defined, interpreted and understood in different ways. Having ideas, implementing them, developing new ways of doing things and improving existing ways of doing things have been part of mankind's history (Godin, 2008). Ideas and concepts have influenced change as well as being influenced by it, reflecting through language the social understanding of the world (Skinner, 1998). To understand innovation the history and definitions within the existing literature need to be examined together with the relationship between innovation and creativity. Innovation within the social housing sector in the United Kingdom is looked at through two academic studies examples of its application within that sector part of the public sector.

2. INNOVATION: HISTORY

Innovation was a medieval legal term relating to 'renewing an obligation by changing a contract for a new debtor' (Godin, 2008, P 23). As a term innovation was written about by Nico Machiavelli in his book *The Prince* (1513) and Francis Bacon in his book *Of Innovation* (1625) but was rarely used until the twentieth century and used significantly in the early twenty first century. Godin (2008) argues that the meaning of the term innovation in the twentieth century has been a resolution between the two contrasting terms of imitation and invention which have evolved through the centuries from ancient Greek philosophy. Within this context Foucault's question can be used to view the evolution of the meaning behind the concepts signified today by the term innovation.

The imitation of reality was a central theme in the work of Plato and there has been a continuous debate throughout the centuries about art imitating, copying or being an interpretation of reality (Bannet, 2007; Force, 2005; Cole, 1995). Imitation has been considered as invention at different points through history, during the sixteenth and seventeenth centuries in England patents were given to importers of existing inventions to stimulate economic growth instead of to inventors (Macleod, 1988; Popplow, 1998) and during the eighteenth century the imitation of goods produced for consumption was considered as invention for improving the quality, design and appearance of these goods (Berg 1999, 2002; Clifford, 1999). The expansion of consumerism from the sixteenth century (Berg, 1999) together with the

development of economic thought around wealth and material prosperity from the seventeenth century (Dumont, 1977) provided a context within which the later industrialisation processes can be said to have developed.

The renaissance in fourteenth century Europe had fostered a spirit of discovery in the following centuries to seek the new, across all fields of knowledge including the arts, science, literature, history and economics (Godin, 2008). Scientific discovery and technological advances were allied to invention (Branigan, 1981) which by the nineteenth century had become key parts of the industrialisation process linked to the economics of profit which in turn impacted significantly on society. The application to economic theory of social and technological advances was pioneered by Marx in the nineteenth century (Sweezy, 1968; Rosenberg 1976). Marx saw the development in industrial production as increasing capital and activity in the wider economy as well as fostering social change (Godin, 2008). The evolution of economic theory in the twentieth century aligned the efficiencies of production to technological advances, industrial and economic growth (Godin, 2008). The twentieth century saw the term innovation used by some writers to explain technological change (Stern, 1927; Davis, 1940) as well as being the subject of a body of literature assessing the processes behind the term. Early theories looked at the psychological aspects associated with innovation, the development of linear process models and the creative dimension of innovation was recognised (Godin, 2008). Innovation was seen in the mid twentieth century as an instrument of economic growth (Schon, 1967) and economic survival for organisations (Schumpeter, 1928, 1939, 1942, 1947). By the late twentieth century the term innovation had become entangled with advancement, technological change, social change and development across many strands of knowledge, across society and personalised to the individual (Godin, 2008). In the twenty first century the term innovation signifies a myriad of meanings and concepts influenced by different factors over the centuries.

3. INNOVATION: DEFINITION

There are a significant number of definitions of innovation that are used across different fields in academia, industry, government and service provision. The academic literature available relates to a wide spectrum of disciplines and can cut across discipline areas (Fagerberg et al, 2005; Malerba & Brusoni, 2007). For this study, it is important to have a definition of innovation that is suitable for the subject and research being undertaken. In order to do this, different definitions of innovation in the literature has been examined to establish an understanding of the components that make up the concept of innovation and specifically in relation to social housing.

The wide variety of literature and language used about innovation adds to different interpretations and understandings about basic concepts about the meaning of innovation (Fagerberg et al, 2005; Linton, 2009). As well as looking at the different components that make up innovation the literature also provides a number of models, theories and frameworks to understand innovation. Approaches have been made to establish a unified understanding of innovation (OECD/Eurostat, 2005) which would have some advantages around clarity and single purpose but it has also been argued that such an approach would not be helpful (Wolfe, 1994). The definition of innovation used in this study has been developed following a review of the literature and examination of the components of innovation. It supports the academic research being undertaken through this study to make a meaningful contribution to knowledge.

To start the examination of literature on innovation a selection of the key parts of a number of definitions from relevant literature are provided below in Table 1. A note is placed next to each definition to justify its inclusion in the table. These definitions contribute to the scope of the literature review, understanding of innovation and development of the definition that is used in this research study.

Table I – Definitions of Innovation

Definition	Reference	Justification
Creation of new combinations of existing resources	Schumpeter (1934)	Schumpeter recognised the importance of innovation in the 1930's
Implementation of a new or significantly improved product (good/service) or process (method/practice/relationship)	OECD/Eurostat (2005)	International guidelines for proposed definition
Innovation is the creation and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes, efficiency, effectiveness or quality	Mulgary and Albury (2003)	A widening of the definition
The successful exploitation of new ideas or ones that are adopted from other sectors or organisations	National Audit Office (NAO), (2009)	The UK government's definition of innovation
Creation and application of good ideas	Australian National Audit Office (ANAO) (2009)	ANAO definition of innovation
The adoption of an existing idea for the first time by a given organisation	Mack et al (2008), Borins (2001)	Focus on adoption and development of new ideas
A continuous and dynamic process in which ideas are transformed into value	Confederation of British Industry / QinetiQ, 2008	This definition includes value as a part of innovation

The successful introduction of new services, products, processes, business models and ways of working	Economic and Social Research Council (2008)	The ESRC includes business models and ways of working in the definition
The development (generation) and/or use (adaption) of new ideas or behaviours	Damanpour and Schneider (2009)	This definition includes behaviours as well as ideas
The introduction of new elements into a service – new knowledge, new organisation, new management/skills	De Vires et al (2014)	This definition focuses on the new within a service
Innovations are in a significant way new and disruptive towards the routines and structures prevailing	Evers et al (2014)	This definition views innovation as affecting the external environment
Innovation is the process by which new ideas turn into practical value in the world	NESTA (2012)	This definition focuses on the practical application of ideas

Table (I) shows different definitions of innovation and identifies some core components that make up innovation. It also shows some convergence of ideas and thinking regarding innovation (Seaden & Manseau, 2001). These core components are taken and put into a composite definition of innovation as ‘the creative process whereby new or improved ideas are successfully developed and applied to produce outcomes that are practical and of value’. The key parts of this composite definition of innovation are looked at further in the sections below.

4. INNOVATION: THE CREATIVE PROCESS

The creative process links creativity and innovation with the purpose of producing something of value that can be traded, developed and commercially exploited. Cropley et al (2011) say that they prefer the use of the term ‘value innovation’ to more accurately describe the linked process involving creativity and innovation as it is more explicit and reflective of that operative environment. They see the linked process between creativity and innovation as one whereby a *duality* of approach is employed. Klein and Tremblay (2011) discuss creation and innovation within the context of urban, social and cultural development linking them as a linear process whereby ‘creation precedes innovation: and, innovation depends on the social acceptance of creation and the spread of its effects and results’ (P 9). Within this context the commercial impetus is less of a driving force behind the processes of creation and innovation. These processes and their connection can be viewed in different way and not just in the linear form identified by Klein and Tremblay (2011). A linear interpretation of the relationship between creativity and innovation excludes a range of other ways through which creative activity and

innovation can take place as well as imposing a structured view of how creativity and innovation takes place and interrelates. This includes ideas that come into existence randomly or accidentally as well processes that can be unstructured, random and uncontrolled.

It has been suggested by some writers, that only certain people or groupings within society are creative (Florida, 2002) but it has also been claimed that each individual has the capacity to be creative (Markusen, 2006). If it is accepted that each individual has the capacity to be creative and that the processes involved are context dependent then the unrestrictive nature of these factors would suggest that creative activity and innovation can take place through an infinite number of ways curtailed only by the restrictive factors that are also individual and context dependent.

Many different models of the creative process have been developed by researchers, academics, practitioners and others, however, not all writers agree that the creative process can be shown through a model. Vinacke (1953) said that creativity within the artistic process does not follow a model and Wertheimer (1945) saw the process of creative thinking as an integrated one. Within these different models there are some consistent themes including combining the development of ideas together with the use of imagination and analysis. The older models tend to look at the start of the creative process as being uncontrolled and linked to the subconscious processes within a person's brain whereas the newer models tend to lean towards it being a controlled generative process.

5.CREATIVITY: ACADEMIC MODELS

A study of creativity undertaken by Plsek (1996) has highlighted a number of models within the literature on creativity that are important in explaining how the creative process has been analysed by researchers, academics and practitioners. These creativity models can be criticised for being no more than frameworks for enabling thought and reason to be developed. Fritz (1991) was dismissive of a number of writers who have developed models of creativity, in terms of their understanding of the subject itself, 'many of these people have never created anything other than theories about creativity' (P 4). Jung (1928) identified two creative processes at work, the rational and the subconscious. The former is a conscious process involving the systematic processing and adapting of existing knowledge, the latter is a process internalised within the individual's subconscious. Most models of the creative process seek to balance both these strands whereas a small number focus on one of the strands such as Barron (1988) through his 'psychic creation' model, this identifies creativity as being a mysterious process based upon the psychological and subconscious through four steps. Weisberg (1993) identified from his work looking at the lives of great creators that moments of inspiration had been backed up by years of conscious work and preparation. The generation of an idea backed up by conscious preparatory analytical work also requires implementation to become fully realised. Contemporary researchers, academics and writers have developed models that embrace the complex aspects of the creative processes as it encompasses different developmental, contextual and applicability factors. In balancing creative and analytical thinking, models of the creative process have developed during the 20th century focusing on the harnessing of creativity to enable problem solving solutions to be developed. The development and implementation of creative solutions requiring the input of individuals, the right environment to be in place as well as the combination of elements highlighted through models of the creative process.

The creative process was presented by Wallas in a five stage model in 1926 which was not only one of the first to be developed but has also been used as a basis for the development of subsequent models (Simonton, 1999a). Wallas (1926)

believed that creativity was a legacy of the evolutionary process which allowed humans to adapt to rapidly changing environments and through his five stage model he sought to explain insights and illuminations within the creative process.

Table II – Wallas Five Stage Model

Stage	Description
Preparation	the problem is defined, observed and its dimensions studied
incubation	the problem is put to one side and internalised into the unconscious mind
intimation	The creative person gets a "feeling" that a solution is on its way
illumination/insight	the creative idea bursts emerges from its preconscious processing into conscious awareness
verification	the idea is consciously verified, elaborated, and implemented

Source: Adapted Truman,(2011, P3)

The model presented in Table (II) is treated in some academic texts as only having four stages with the ‘*intimation*’ phase shown as a sub stage. The first stage *preparation*, is where conscious preparatory work on an identified problem or issue takes place including understanding it fully as well as attempts at resolution. During the *incubation* stage the issue or problem becomes internalised by the individual into their subconscious to be processed prior to the development of their insight, illumination or creative idea. A period of time taken during the ‘*incubation*’ stage may help the individual to be more creative and aid their problem solving abilities as well as enabling misleading approaches to be forgotten. Leading on from this, it can be argued that, if a period of time is not taken during the ‘*incubation*’ stage the individual may become fixated on taking forward an inappropriate approach to solve a problem. At the *illumination* stage the problem or issue returns to the conscious and the individual has a new insight or idea regarding it. At the last stage in the model the idea or insight goes through a verification process to assess its appropriateness and its further development.

Torrance (1988) sees the work of Wallas as forming a lot of the teaching on creative thinking and that it has influenced the development of other models of the creative process. Wallas (1926) noted that during the creative process outlined in his model the individual can return to earlier stages. The first and last stages of his model are placing purposeful preparation and critical verification together suggesting that critical and analytical thinking complement each other rather than contrasting against each other. It can be said that those who think creatively study, analyse, verify and judge but they have trained themselves to perceive, notice things, expect change and avoid making premature judgements. The implied theory behind Wallas' model is that creative thinking is a subconscious process, it cannot be directed and that both creative and analytical thinking are complementary.

Building on the work of Wallas, Rossman (1931) looked at the creative processes employed by 710 inventors and used the results obtained through a survey to develop a seven stage model (Plsek, 1996). This model begins with stages to observe and analyse a ‘need or difficulty’ which may be reflective of his survey respondents but not necessarily a requirement of

the creative process. The implication is that a ‘need or difficulty’ has to exist and be identified before the creative process can take place. Rossman has also added a final stage to ‘experiment and test the best fitting solution’, which may also be

reflective of the survey respondents. This model has connotations of a positivist empirically based approach to augmenting creativity through a controlled process as opposed to a process that is built around enhancing a creative spark that has ignited. An element of mystery is still attached to the creation of an idea in Rossman’s model although the process identifies ideas as emerging at stage six as a response to an assessed need.

Table III - Rossmans Seven Stage Model

Stages	Description
One	Observation of a need / difficulty
Two	Analysis of the need
Three	A survey of all available information
Four	A formulation of all objective solutions
Five	A critical analysis of these solutions to assess their advantages/disadvantages
Six	Emergence of the new idea
Seven	Experimentation to test out the best fitting solution

Source: Adapted from Plsek (1996)

Table (III) shows Rossman’s seven stage model which begins with stages that observe and identify a need prior to generating a creative idea, in contrast, to Wallas (1926) whose model begins with preparation and incubation stages which develops an environment to foster creativity. The development of a creative idea is shown in Wallas’s model as an *illumination* which is inspirational which differs from Rossman’s model where the creative idea is seen as emerging through an analytical process. Unlike Wallas, Rossman (1931) does not consider the processing of new ideas or insights that appear at the illumination stage to be subject to the subconscious ‘the assumption that the subconscious is responsible for the final solution is, however, no answer to the problem. It merely amounts to giving a name to a thing which mystifies and puzzles us’ (P 86).

The balance between the imaginative/uncontrolled aspects of creativity and the processes to analyse as well as control them are shown in the development of different models that try and explain the creative process. This in itself could be said to be a microcosm of the historical view that creativity is linked to flair. Imagination, genius, artistic venture and it is uncontrollable together with a more contemporary view that has sought to harness, engage, understand, control and to use the energies of creative thought in a positive way. Taking elements of Wallas’s work forward, Osborn (1953) developed a seven stage model for creative thinking that balances both analysis and imagination.

Table IV - Osborn's Seven-Step Model

Stages	Description
Orientation	pointing up the problem
Preparation	gathering pertinent data
Analysis	breaking down the relevant material
Ideation	piling up alternatives by way of ideas
Incubation	letting up, to invite illumination
Synthesis	putting the pieces together
Evaluation	judging the resulting ideas

Source: Adapted from Plsek, (1996)

As in the Wallas model, Osborn (1953) includes the *incubation* stage, but his model shares a number of similarities with Rossman's seven stage model. These include an assessment of a need, the gathering of data relating to this need, the assembly and selection of a solution as well as experimentation relating to the selected solution. Like Wallas, Osborn (1953) links creativity to the subconscious whereas Rossman (1931) links it to a more rational and analytical approach. Wallas (1926) saw the creative process as an ongoing one whereby a 'single achievement or thought' as 'the making of a new generalization or invention' which can be dissected into a 'continuous process, with a beginning, and a middle and an end' (P 79). The stages within these models of the creative process were identified by Eindhoven and Vinacke (1952) as not being 'stages at all but processes which occur during creation. They blend together and go concurrently' (PP 161-162). To be successful the creative process is described as 'flow' by Csikszentmihalyi (1997) whereby it is the result of the coming together of elements within a system; culture, an individual bringing novelty forward and external people who verify the idea or insight. He sees the role of the creative individual as being a link in the chain of a longer creative process and he sees creativity as 'the cultural equivalent of the process of genetic changes that result in biological evolution, where random variations take place in the chemistry of our chromosomes, below the threshold of consciousness' (P 7).

Osborn (1953) postulated that creative ideas are trapped in the minds of individuals because of the fear that people have of rejection if they are put forward. Osborn (1948, 1952, 1953) developed *brainstorming* as a technique to be used to improve the generation of ideas, especially in group meeting through harnessing the groups collective knowledge and interaction to develop ideas. This process encourages participants to contribute to idea generation through an open thinking approach with equal weight put on each submission. Osborn (1952, 1953) identified four basic rules to be applied when using the *brainstorming* process; criticism is ruled out, free wheeling is welcomed, quantity is wanted and combination / improvement are sought. Rossiter and Lillien (1994) see the generation of 'creative ideas' as 'vital to business success' and highlight that the principles behind *brainstorming* have 'evolved considerably' (P62) since Osborn put forward the process. From the body of literature that has developed since the early 1950's, Rossiter and Lillien (1994) identify six principles that have emerged that should be used with the *brainstorming* process; there should be instructions for each planned

session, a target should be set for the number of ideas to be generated, ideas should be initiated by individuals, initiated ideas should be refined through group interaction, individuals should select the final idea through a voting process and session times should be controlled to short periods (15 minutes for initial idea generation and 2 hours for refining / selection).

The combination of imagination and control has been a continuing aspect of the development of models of creativity seeking to systemise techniques to enable the directing and analysis of creativity. An example of this is the Parnes – Osborn Creative Problem Solving (CPS) model which has developed alongside the use of *brainstorming* technique since the 1960's. Osborn (1963) introduced CPS with 3 steps – fact finding, idea finding and solution finding and this was refined by Parnes (1967) into a five step model and again by Isaksen & Treffinger (1985) who added a sixth step. In the model the first two steps (objective and fact finding) and last two steps (solution and acceptance finding) require the use of analytical thinking and the middle two steps (problem and idea finding) require the use of creative thinking.

Table V - Parnes – Osborn CPS Model

Stage	Description
One	Objective finding – identifying the goal
Two	Fact finding – gather data about the goal
Three	Problem finding – identifying potential problems
Four	Idea finding – generating potential solutions
Five	Solution finding – developing the solution
Six	Acceptance finding – implementing the solution

Source: Adapted from Plsek, (1996)

Table (V) shows the Parnes-Osborn CPS model which builds on the work of Osborn's seven stage model and Rossman's stage model through a rational, analytical approach to harnessing creativity to solve an identified problem or achieve a goal. The CPS model treats creativity as a tool that can be focused and used to generate solutions through an open, conscious and systemised approach whereas Wallas's model looks at creativity as a process that illuminates ideas for potential solutions through the subconscious of an individual, which can be a random and closed process. When comparing the CPS model to Rossman's model it can be seen that they both favour a rational and analytical approach to identifying the problem and implementation of the solution but differ in approach at the illumination stage where Rossman sees creativity as an unexplained process from which ideas emerge.

Koberg and Bagnall (1981) put forward the 'Universal Traveller Model' which has seven steps and again presents a balance between the imaginative and analytical aspects of creativity as well as a systematic approach to the development of the idea, generation of options, analysis and practical thinking. Step one of this model asks that the user accepts the situation as it stands and to view this as a challenge unlike the other stage models where at step one the user is asked to;

prepare for the problem or issue (Wallas), observe the problem or issue (Rossman), point to the problem or issue (Osborn) and find the problem or issue (Parnes – Osborn).

Table VI - Koberg & Bagnall ‘Universal Traveller’ Model

Stage	Description
One	Accept the situation (as a challenge)
Two	Analyze (to discover the "world of the problem")
Three	Define (the main issues and goals)
Four	Ideate (to generate options)
Five	Select (to choose among options)
Six	Implement (to give physical form to the idea)
Seven	Evaluate (to review and plan again)

Source: Adapted from Plsek, (1996)

Koberg and Bagnall (1981) present their model as a map and the creative process as like taking a journey, starting with the problem and ending with a solution, using a process that they describe as ‘universally relevant’ in that ‘any problem, dream or aspiration, no matter its size or degree of complexity, can benefit from the same logical and orderly ‘systematic’ process employed to solve world level problems’ (P 7). They based their model on the study of Cybernetics, human control systems, employing the systematic approach used to develop a model that consciously controls creativity to design solutions to problems. They state that the creative ‘problem solving (design) process’ is a ‘sequence of stages.....on a journey to a destination’ (P 16) which once experienced and learnt is internalised by the individual. The steps in their model ‘need not be linear’ (Koberg and Bagnall, 1981, P 27) which allows for the random nature of the creative process, this was also recognised by Wallas who stated ‘it is unlikely that creative procedure can ever be strictly formulated’ (Osborn, 1953, P 114). The seven steps in their model were also identified by Koberg and Bagnall (1981) as alternating between being divergent or convergent as well as having an evaluation step at the end of the process for review and planning. This contrasts with the other stage models where the focus is on verification of the solution (Wallas), testing of the solution (Rossman), Judging the solution (Osborn) and accepting /implementing the solution (Parnes- Osborn).

Models of creativity have also been developed to reflect certain contexts and specific environments such as engineering, commercial and business planning. These models still look to achieve a balance of creative and analytical thinking. An example of this is a model put forward for creative strategic planning by Bandrowski's (1985) process for creative strategic planning. In this model Bandrowski places ‘judgment’ in the middle as an important part of the analytical part of the process and he specifies the specific creative skills that are to be used to achieve the result through the process including skills in insight development, creative leaps, and creative contingency planning.

Table VII - Brandowskis Model for Creative Strategic Planning

Stages	Description
Analysis	standard planning, insight development

Creativity	creative leaps, strategic connections
Judgment	concept building, critical judgment
Planning	action planning, creative contingency planning
Action	flexible implementation, monitoring results

Source: Adapted from Plsek, (1996)

Other models also look at providing a greater proportion to the external reality that an individual is applying their creativity to as well as the internal processes that they are employing, an example of this is the model put forward by Fritz as the 'process for creation'. He identifies the beginning of the process as the creative acts of conception and vision followed by analysis of current reality, action, evaluation, public scrutiny (building momentum), and completion as well as seeing the creative process is cyclical in nature - 'living with your creation' being a meaningful end part of the process that leads to the next creative conception and vision.

Table VIII - Fritz' Process for Creation

Stage	Description
One	Conception
Two	Vision
Three	Current reality
Four	Take action
Five	Adjust, learn, evaluate, adjust
Six	Building momentum
Seven	Completion
Eight	Living with your creation

Source: Adapted from Plsek, (1996)

Table (VIII) shows Fritz's (1991) model which focuses on the creative aspects of the individual and was sceptical of formulaic approaches to the classification of the creative process presented by other models. The stages identified in the models of Wallas (1926), Rossman (1931) and Osborn (1953) focused on the identification of the problem and the application of a creative solution in contrast to Fritz whose focus is on the individual and the identification of problems and creative problem solving through their actions. The actions of individuals are fundamental to the identification of a problem as well as its solution and the level of motivation that an individual has affects these actions. A range of factors can impact on motivation including autonomy, ownership, influence, reward, challenge as well as personal behaviour characteristics. In the literature relating to the motivation of staff working in organisations these factors can be identified; being in control, having independence, owning and influencing your own work (Bailyn, 1985; Paolillo & Brown, 1978; Pelz & Andrews, 1966); requirements to perform, achieve targets and timescales (Amabile & Gitome, 1984; Amabile, 1984; Amabile, 1994; Amabile & Grysiewicz, 1987).

6. INNOVATION: SOCIAL HOUSING

A significant amount of the literature identifies looks at innovation within social housing relating to the design and build of housing, reduced carbon usage and sustainable construction (Kaluarachchi, 2015; Marchesi, et al, 2015; Hjort and Widén,

2015; Nanyam et al, 2015; Forster et al, 2015; Madeddu et al, 2015; Abbot et al, 2015; Pässilä et al, 2015; Springer and German, 2015). Innovation in technological advances in medicine and health care which is applied to housing services, mostly used by elderly people through telecare and assistive technologies (Eccles, 2013; Wigfield et al, 2012; Marriot et al, 2013; Parker, 2013; Hunter et al, 2011; Williamson, 2011; Wilder, 2011). There is very limited literature relating to innovation across the whole services provided by Housing Associations as social housing providers. Two studies that looked at innovation in HAs were undertaken by Walker & Jeanas (1999) and a further study undertaken by Walker et al (2002). Both used a two dimensional typology put forward by Osborn (1998) to look at innovations within their research studies.

This model built on the traditional split of innovation between product and process allowing for ‘innovation to occur at any stage of the life cycle thereby highlighting discontinuity (innovation) and continuity (organisational development) along the dimensions of services and users’ (Walker et al, 2002, p 5). Within the two dimensional model, the first dimension focuses on the impact of organisational change upon the services that are delivered and these are identified as existing or new ones which also includes the discontinuity of services. The second dimension focuses on the relationship of an organisational change to its users both new and existing as well as how their needs are met ‘which involves end-user discontinuity’ (Walker et al, 2002, p 5).

Table IX - Typology of Public Services Innovation

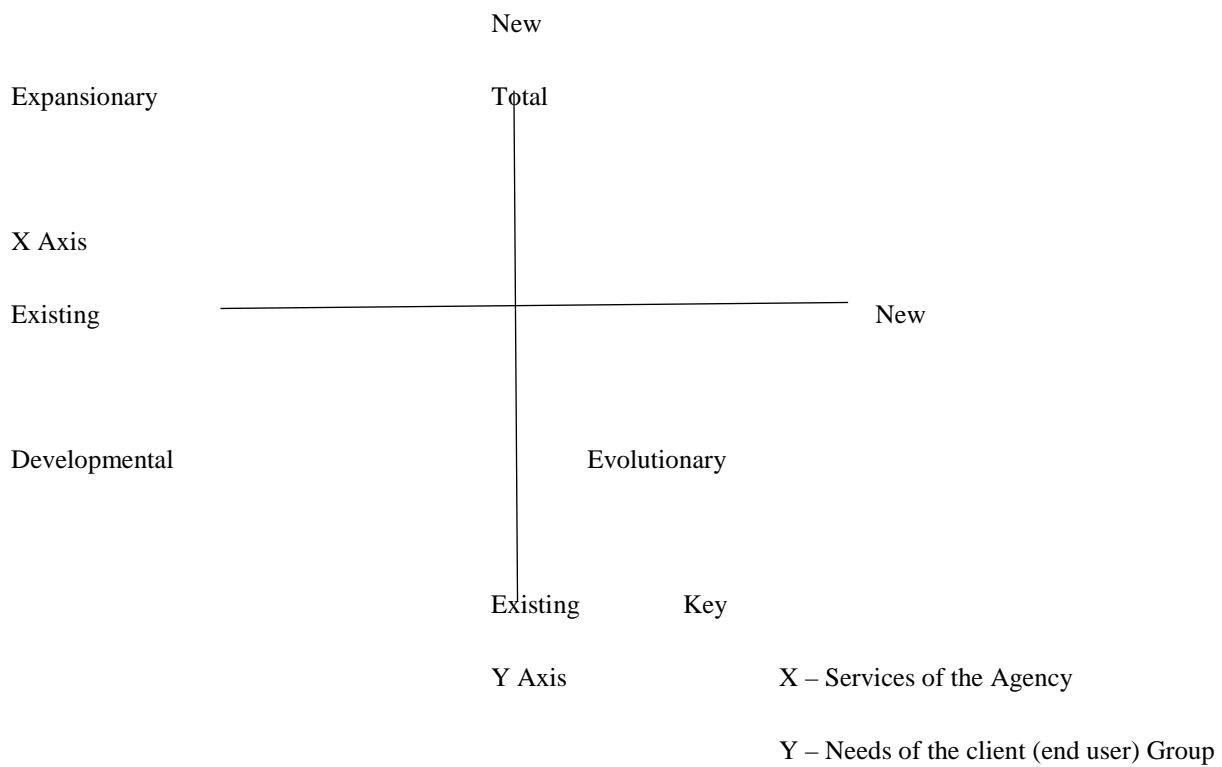
	Users		
Services		New	Existing
	New	Total Innovation	Evolutionary
	Existing	Expansionary	Developmental

Source: Adapted from Osborn (1998)

Four types of innovation were identified: the first is total innovation which includes ‘discontinuous change that is new to the organisation and serves a new user group’, the second is expansionary innovation whereby ‘the change involves offering an existing service of the organisation to a new user group’, the third is evolutionary innovation whereby ‘the change involves providing a new service to the existing user group of an organisation’ and the final classification is developmental innovation where ‘the services of an organisation to its existing user group are modified or improved’ (Walker et al, 2002, p 5).

Using a XY graph format for the two dimensional typology the identified innovations can be plotted against the four categories (see Figure 1).

Figure I - Typology of Social Policy Innovation



Source: Adapted from Osborn (1998)

In the first study, Walker and Jeanas (1999) researched innovation in three housing associations in the late 1990s. The organisations selected for the case studies represented the larger HAs in England who provided the most rented accommodation. A main problem identified with the case study approach was that it was not possible to gain a representative sample of housing providers as the sector is so diverse with no two organisations being the same (Walker &

Jeanas, 1999). The identified innovations were focused under six areas of activity: cultural change; customer focus/information technology; diversification; new management techniques; organizational expansion and organizational structure. Many of these were internally focused emphasising service changes and reflecting the financial, commercial, customer service and performance within an operating environment that was constantly changing and becoming increasingly competitive.

Table X - Classification of Case Study HA Innovations

Organisation Innovation Classification	Innovation Area	Example
Total	Diversification	Private Renting
Evolutionary	Customer Focus	Call Centres
	Diversification	Housing Plus
	Organisational Structures	Network Form, Demonstration Project
Expansionary	Organisation Expansion	Stock Transfers, Mergers, Contract Management, Geographical Growth
Developmental	New Management Techniques	Business Focus, Performance Targets

Source: Walker & Jeanas (1999)

From the study, the researchers found that in relation to new innovations change is discontinuous and radical, though more limited, incremental innovation takes place through change. It was found that the iterative and dynamic nature of innovation make the process of classifying them problematic not only because this process can be subjective but also because the innovations themselves change through time. A further study (Walker et al, 2002) carried out on innovation in housing associations also measured innovations that had been identified against Osborn's two dimensional typology. Both studies highlighted a number of common themes that emerged from the transformation of the sector during the 1990s including: diversification of activity into regeneration, community facilities, care, special needs, private renting and contract management; the adoption of new organizational forms through mergers and group structures; a greater emphasis on a business ethos and management; and, a changing regulatory regime (Clapham & Evans, 1998; Mullins and Riseborough, 1999; Walker, 2000).

7. CONCLUSION

This study shows that there is a process connected with innovation and that there are a number of definitions within the academic literature about innovation. Innovation can be considered as being product or process that is new or is existing but has been improved. There are different models regarding the process of innovation and from these it can be identified that there is a strong link to creativity

as part of the innovation process. In looking at the application of innovation in social housing as part of the public sector this study has focused on two academic studies which looked at Housing Associations and Innovation and these identified that innovations can be seen with a typology as new products or services or improvements on existing products and services. Further research could be undertaken to look at innovation within the social housing sector within the United Kingdom within the twenty first century.

REFERENCES

- [1] Abbott C, Sexton M and Barlow C, (2015), Regulation and Innovation in New Build Housing. *Construction Innovation*, pp.79-88
- [2] Amabile T M & Gitomer J, (1984), Childrens artistic creativity: Effects of choice in task materials, *Personality & Social Psychology Bulletin*, 10, 209-215
- [3] Amabile T M & Gryskiewicz N, (1989), The creative environment scales: The work environment inventory, *Creative Research Journal*, 2: 321-254
- [4] Amabile T M, (1994), The delicate balance of managing for creativity, *R & D Innovator*, 3: 1-9
- [5] Australian National Audit Office (ANAO), (2009), *Innovation in the public sector*, Canberra: Commonwealth of Australia
- [6] Bailyn L, (1985), Autonomy in the industrial R & D lab, *Human Resource Management*, 24 (2), Summer
- [7] Bandrowski J F, (1985), *Creative Planning Throughout the Organization*, New York: American Management Association
- [8] Bannet E, (2007), Quixotes, Imitations and Transatlantic Genres, *Eighteenth Century Studies*, 40 (4), PP 553 – 569
- [9] Barron F, (1988), 'Putting creativity to work'. In R Sternberg (ed), *The nature of creativity*, Cambridge: Cambridge University Press
- [10] Berg M, (2002), From Imitation to Invention: Creating Commodities in Eighteenth-Century Britain, *Economic History Review*, LV (1), pp 1-30
- [11] Berg M, (1999), New Commodities, Luxuries and their Consumers in Eighteenth-Century England, in M. Berg and H. Clifford (eds.), *Consumers and Luxury: Consumer Culture in Europe 1650-1850*, Manchester: Manchester University Press, pp 63-85
- [12] Branigan A, (1981), *The Social Basis of Scientific Discoveries*, New York: Cambridge University Press
- [13] Clapham D & Evans A, (1998), *From Exclusion to Inclusion: Helping to creating successful tenancies and communities*, London: Hastoe Housing Association
- [14] Clifford H, (1999), Concepts of Invention, Identity and Imitation in the London and Provincial Metal-Working Trades 1750-1800, *Journal of Design History*, 12 (3), pp 241-255
- [15] Cole B, (1995), Titan and the Idea of Originality in the Renaissance. In A Ladis (ed), *Craft of Art*, Athens: University of Georgia Press
- [16] Confederation of British Industry (CBI)/ QUINETIQ, (2008), *Excellence in service innovation*, CBI
- [17] Cropley D H, Kaufman J C and Cropley A J, (2011), Measuring creativity for innovation management, *Journal of Technology Management & Innovation*, Vol 6, no 3
- [18] Csikszentmihalyi M, (1997), *Finding flow: The psychology of engagement with everyday life*, New York NY: Basic Books
- [19] Damanpour F & Schneider M, (2009), Characteristics of innovation and innovation adoption in public organisations: Assessing the role of managers, *Journal of Public Resources and Theory*, 19 (3), 495-522
- [20] De Vires HA, Bekkers V J J M & Tummers L G, (2014), *Innovations in the public sector: A systematic review*, Ottawa IRSPM conference 9-11/4/14

- [21] Dumont L, (1977), *From Mandeville to Marx*, University of Chicago Press
- [22] Eccles A., (2013), The Complexities of Technology-Based Care: Telecare as Perceived by Care Practitioners. *Issues in Social Science*, 1(1)
- [23] Economic and Social Research Council (ESRC), (2008), *Innovation Research Initiative – distributed projects cost specification*, Swindon, ESRC
- [24] Evers A, Ewert B & Brandsen T (eds), (2014), *Social innovations for social cohesion: 77 cases from 20 european cities 2010-14*, Nijmegen: European commission
- [25] Fagerberg J, Mowery D C & Nelson R R (Eds), (2005), *The Oxford Handbook of Innovation*, Oxford, Oxford University Press
- [26] Fritz R, (1991), *Creating*, New York: Fawcett
- [27] Force P, (2005), Innovation as Spiritual Exercise: Montaigne and Pascal, *Journal of the History of Ideas*, 66 (1), pp 17 – 35
- [28] Forster, A.M., Fernie, S., Carter, K., Walker, P. and Thomson, D., 2015. Innovation in low carbon construction technologies: an historic analysis for obviating defects. *Structural Survey*, 33(1), pp.52-72
- [29] Godin B, (2008), *Innovation: The history of a category*, Montreal: Project of the intellectual history of innovation, working paper no 1
- [30] Hjort, B. and Widén, K., 2015. Introduction of Sustainable Low-cost Housing in Ethiopia—an Innovation Diffusion Perspective. *Procedia Economics and Finance*, 21, pp.454-460
- [31] Hunter R H, Sykes K, Lowman S G, Duncan R, Satariano W A and Belza B, (2011) Environmental and policy change to support healthy aging. *Journal of aging & social policy*, 23(4), pp.354-371.
- [32] Kaluarachi Y, (2015), 8 Challenges to leaders in promoting innovative and sustainable social housing in the UK. *Leadership and Sustainability in the Built Environment*, p.109
- [33] Klein JL and Tremblay DG, (2011), Cultural creation and social innovation as the basis for building a cohesive city, Montreal (Canada)
- [36] Koberg D and Bagnall J, (1974), *The Universal Traveller*, Los Altos, Cali: W Kaufman
- [37] Linton J D, (2009), De-babelizing the language of innovation. *Technovation*, 29
- [38] Macleod C, (1988), *Inventing the Industrial Revolution: the England Patent System 1660 – 1800*, Cambridge: Cambridge University Press
- [39] Madeddu M, Gallent N and Mace A, (2015), Space in new homes: delivering functionality and liveability through regulation or design innovation?. *Town Planning Review*, 86(1), pp.73-95
- [40] Malerba F & Brusoni S, (Eds), (2007), *Perspectives on Innovation*, Cambridge, Cambridge University Press
- [41] Marchesi, M., Kim, S.G. and Matt, D.T., 2015. Assessing the Design Innovation Potential of Timber Prefabricated Housing through Axiomatic Design. ASME

- [42] Markusen A, (2006), Urban development and the politics of a creative class: evidence from a study of artists, *Environment and Planning A*, 38: pp. 1921-1940
- [43] Marriot P, Hinshaw K, Nayar R and Emmerson C, (2013 "Development of a Multi Matrix Multi Partner Telehealth Model in pregnancy care in South of Tyne and Wear, UK. " Development of a Multi Matrix Multi Partner Telehealth Model in pregnancy care in South of Tyne and Wear, UK. *International Journal of Integrated Care* Vol. 13, p1-2
- [44] Mulgary G and Albury D, (2003), *Innovation in the public Sector*, London: Strategy Unit, Cabinet Office
- [45] Mullins D & Riseborough M, (1999), *Changing with the times*, Birmingham: University of Birmingham
- [46] Nanyam, V.N., Basu, R., Sawhney, A. and Prasad, J.K., 2015. Selection Framework for Evaluating Housing Technologies. *Procedia Engineering*, 123, pp.333-341
- [47] National Audit Office (NAO), (2009), *Innovation across central government*, London: The stationery Office
- [48] NESTA, (2012), *Plan1: the case for innovation led growth*, London: NESTA, p 17
- [49] OECD/Eurostat, (2005), *The Oslo Manual*, Paris, OECD
- [50] Osborn A, (1952), *Your creative Power: How to use imagination*, New York: Charles Scribner
- [51] Osborn A, (1953), *Applied Imagination*, New York: Charles Scribner
- [52] Osborn A, (1963), *Applied Imagination: principles and procedures of creative problem solving* (3rd ed), New York: Charles Scribner
- [53] Osborn S P, (1998), *Voluntary Organisations and Innovation in Public Services*, London: Routledge
- [54] Paolillo J G & Brown W B, (1978), How organisation factors affect R & D innovation, *Research Management*, 7, 12-15
- [55] Parnes S J, (1967), *Creative behaviour guidebook*, New York: Scribner
- [56] Parker S G, (2013), Telecare for an ageing population? *AGE AND AGEING*, 42(4): 424-5
- [57] Pässilä P, Pulkka L and Junnila S, (2015) How to Succeed in Low-Energy Housing—Path Creation Analysis of Low-Energy Innovation Projects, *Sustainability*, 7(7), pp.8801-8822.
- [58] Pelz D C & Andrews F M, (1966), *Scientists in organisations: Productive climates for research and development*, New York: Wiley
- [59] Plsek P, (1996), Working Paper:Models for the creative process, Directedcreativity (online accessed 9/3/15)
- [60] Popplow M, (1998), Protection and Promotion: Privileges for Inventions and Books for Machines in the Early Modern Period, *History of Technology*, 20, pp 103 – 124
- [61] Rosenberg N, (1976a), Marx as a Student of Technology, *Monthly Review*, July /August, pp 56-77
- [62] Rossiter J R and Lillien G L, (1994), New 'brainstorming principles, *Australian Journal of Management*, 19, 1
- [63] Rossman J, (1931), *The Psychology of the inventor*, Washington DC: Inventors Publishing
- [64] Schon D A, (1967), *Technology and Change: The Impact of Invention and Innovation on American Social and Economic Development*, New York: Delta Book
- [65] Schumpeter J A, (1928), The Instability of Capitalism, *The Economic Journal*, September, pp 361-386

- [66] Schumpeter J A, (1934), *The Theory of Economic Development: An enquiry into profits, capital, credit, interest and the business cycle*, London, Oxford University Press
- [67] Schumpeter J A, (1939), *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process*, New York: McGraw-Hill
- [68] Schumpeter J A, (1942), *The Process of Creative Destruction, in Capitalism, Socialism and Democracy*, Chapter 7, New York: Harper
- [69] Schumpeter J A, (1947), The Creative Response in Economic History, *Journal of Economic History*, November, pp 149-159
- [70] Seaden G & Manseau A, (2001), Public policy and construction innovation. *Building Research & Information*, 29, 182 – 196
- [71] Simonton D K, (1999), *Origins of genius: Darwinian perspectives on creativity*, Oxford University Press
- [72] Skinner M and Hanlon N eds, (2015), *Ageing Resource Communities: New frontiers of rural population change, community development and voluntarism*, Routledge
- [73] Springer D and German A, (2015), *New Whole-House Solutions Case Study: Zero Energy Ready Home Multifamily Project: Mutual Housing at Spring Lake* (No. DOE/GO-102015-4690). ARBI
- [74] Stern B J, (1927), *Social Factors in Medical Progress*, New York: Columbia University Press
- [75] Sweezy P M, (1968), Karl Marx and the Industrial Revolution, in R.V. Eagly (ed.), *Events, Ideology and Economic Theory*, Detroit: Wayne State University Press, pp 107-126
- [76] Torrance E P, (1988), "The Nature Of Creativity As Manifest In Its Testing," in RJ Sternberg (ed), *The Nature of Creativity*, Cambridge, England: Cambridge University Press
- [77] Truman S, (2011), A generative framework for creative learning: A tool for planning creative-collaborative tasks in the classroom, *Border Crossing: Transnational Working Papers*, No 1101
- [78] Vinacke W, (1953), *The psychology of thinking*, New York: McGraw Hill
- [79] Wallas G, (1926), *Art of thought*, New York: Brace and Company
- [80] Walker R, (2000), The changing management of social housing: The impact of externalisation and managerialism, *Housing Studies*, Vol 15, no 2, pp 281-299
- [81] Walker R, Jeanas E & Rowlands R, (2002), Measuring Innovation – applying the literature-based innovation output indicator to public services, *Public Administration*, Volume 80, Issue 1, pp 201-214
- [82] Walker R, and Jeanas E, (1999), Innovation in a Regulated Service: The case of English Housing Associations, Paper given at ENHR 'The process of change in Housing' conference, Laboratrio Nacional de Engenharia Civil, Lisboa, Portugal, 27-28th May 1999
- [83] Wertheimer M, (1945), *Production Thinking*, New York: Harper
- [84] Wilder A R, (2011), A Review of: 'Aging Friendly Technology for Health and Independence: 8th International Conference on Smart Homes and Health Telematics, Icost 2010', *Journal of Technology in Human Services*, Vol. 29 Issue 2, p142-146

[85] Wigfield A, Moore S, Buse C and Fry G, (2012), Workforce Development for Assisted Living Technology: understanding roles, delivery and workforce needs. *Centre for International Research on Care, Labour and Equalities University of Leeds (CIRCLE). Found*, p.35

[86] Williamson T, (2011) Grouchy Old Men? Promoting older men's mental health and emotional well being. *Working with Older People*, 15(4), pp.164-176

[87] Wolfe R, (1994), Organizational Innovation: Review, critique and suggested research directions, *Journal of Management Studies*, 31, 3, PP 405-431