Cultural Memory, an Asset for Design-driven Innovation within the Creative Industries Sector: Lessons for design education

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Abstract
Culture is gaining recognition globally as an important driver of sustainable development in the creative economy. The significance of the role of design and culture with the creative industries is under-researched, especially from the new emerging economies perspective. Therefore, designers need a framework which will guide them on how they can create sustainable, and innovative cultural sensitive products which reflect users' identities. Co-designing from cultural memory is a new design approach which embeds users' beliefs, expectations, and expressive values in products and services. The paper discusses two case studies which were conducted in Botswana within the creative industries. The aim was to study how designers imbued cultural memory factors into design features. The paper developed a culture-centred design model after carefully studying how designers identify, transform and imbued cultural memory factors into innovative glocalised products that have local meaning and a global appeal.

Key words
cultural memory, culture-centred design model, creative industries, design-driven innovation, Botswana

Introduction
The importance of culture and the creative economy as drivers of sustainable development is increasingly getting recognition worldwide in terms of income-generation, job creation and export earnings. Due to this symbiotic relation between culture and creative industries, this study investigates how design-driven innovation can play a leading role to achieve the sustainable development goals of the local economies. Cultural insight has become an integral component of innovating products and services. However, little research has been conducted on how to integrate cultural characteristics into design activities to create emotional interaction between products and users. Investing in culture and the creative sector as drivers of social development can also lead to results that contribute to the overall well-being of communities, individual self-esteem and quality of life, dialogue and cohesion *(Creative Economy Report, 2013)*. Culture has a critical influence on the acceptance, use of products and services. Design approaches in a particular context are embedded in a cultural context of beliefs, expectations, and values. Evidence from the literature (Moalosi et al., 2010; Shen et al., 2006; Nussbaum, 1995) shows, that culture empowers people with the capabilities to take ownership of their own development processes. This is in line with capabilities theory which claims that increasing the capacity of people to live the type of life that they value should be the primary concern of any public policy. When initiating development programmes, consideration should be made to take a human-centred and context-based approach that includes diverse local values, conditions, resources, skills and limitations. For this to happen, designers, especially from new emerging economies must shift their thinking to focus on the basic human need as the centrepiece of progressive design. This can be transformative and lead to sustainable change. The literature also shows that development programmes have failed in the past because they did not embrace people's cultural setting *(Creative Economy Report, 2013)*.

As the world becomes more globalised and to some extent glocalised, users seek distinctive products and services imbued with local meaning and with a global appeal. The creative industries have become a transformative force in the world because of their economic value as well as their role in producing new creative products and technologies. These industries are one of the growing sectors of the world economy and hence this paper which seeks to explore ways on how design-driven innovation can contribute to such sustainable development initiatives. People's creativity and innovation are key drivers of the creative industries in new emerging economies. The creative industries can be defined as the cycles of creation, production and distribution of products and services that utilise creativity and intellectual capital as key inputs *(Creative Economy Report, 2008)*. They focus on knowledge-based activities that produce tangible products and intangible intellectual services with creative content, economic value and market objectives. The creative industries are emerging as a strategic choice for reinvigorating economic growth, employment and social cohesion. The special edition of *Creative Economy Report* (2013) argues that culture and creativity are processes which are intimately bound up in the imaging and the generation of new ideas, technologies, products and ways of interpreting the world. Investment in the creative industry can assist to build new developmental pathways in terms of identity, innovation

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and creativity for individuals, and the local communities. The significance of the role of design and cultural memory within the creative industries is under-researched, especially from the new emerging economy perspective. Therefore, designers need a framework which will guide them on how they can create sustainable, and innovative cultural-sensitive products which reflect the user's identity. This is in recognition that culture is now being considered as a new dimension of product competitiveness *(Creative Economy Report, 2013)*. It is against the background that the study seeks to develop ways of using cultural memory to innovate or add value to products and services produced by the creative industries.

Culture

Culture is not a timeless and motionless body of value systems that remains unaltered by social change; rather it is dialectic and incorporates new forms and meanings while changing or reshaping traditional ones (Parsons, 1999). Thus, it is conceived as a coherent body of beliefs and practices which are dynamic and changing within particular historical periods. Culture is multi-layered. For example, Stephan (2004) suggests two layers (visible and invisible), Schein (1999) and Lee (2004) proposes three levels (basic assumptions, values and artefacts); Hampden-Turner and Trompenaars (1997) and Spencer-Oately (2000) argue for four layers (basic assumptions and values; beliefs, attitudes and conventions; systems and institutions; artefacts, products, rituals and behaviour).

Based on the Spencer-Oatey's (2000) model, this study defines culture as a shared set of basic assumptions and values, with resultant behavioural norms, attitudes and beliefs which manifest themselves in systems and institutions as well as in material and non-material elements. Spencer-Oatey's (2000) argues that *'basic assumptions'* are factors which are deeply held by the society, constituting the invisible core ideas that inform the other layers, whilst '*values*' involve observable culture that the society claims to hold; for example, ethics and aesthetics. Group members are unlikely to share identical sets of *'beliefs, attitudes and conventions'* which make up the second inner layer, which consists of expectations of how people behave in various situations. The second layer influences the third layer, consisting of '*systems and institutions*'. These are structures of a society within which values and norms are transmitted. The third layer is encircled with a split outer layer of culture composed of '*artefacts and products*' (material items) on one side, and '*rituals and behaviour*' (non-material elements) on the other. Artefacts include the visible and easily described elements of culture which have an immediate emotional impact (Schein, 1999). However, designers tend to overlook incorporating the inner core layers of culture and design products that are based mainly on the outer layer (Lee, 2004).

Cultural memory

Assmann (2008) developed a framework of communicative and cultural memory in which memory is regarded as the ability that enables people to form an awareness of their identity, at a personal and collective level. The synthesis of time, identity and memory results in the three levels of personal, social and cultural dimensions are illustrated in Table 1.

In Table 1, the inner level is viewed as the personal memory which is based on the Neuro-mental system. The social level involves the memory which deals with communication, social interaction, and socialisation.

Level	*Time*	*Identity*	*Memory*
Inner (Neuro-mental)	Inner, subject time	Inner self	Individual memory
Social	Social time	Social self, a person as carrier of social roles	Communicati ve memory
Cultural	Historical, mythical, cultural time	Cultural identity	Cultural memory

Table 1. Memory: individual, social and cultural. Source: Assmann (2008)

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Assmann (2008) further argues that memory enables people to live in groups and communities and as such, enables people to build a collective or social memory. The cultural level deals with images, symbolic forms, icons, artefacts, and cultural objects as carriers of cultural memory which gives people cultural identity.

Cultural memory is viewed to be related to the present people's perception of the past which is influenced by the present hence the dynamism of culture. Rodriguez and Fortier (2007) describe cultural memory as those transformative historical experiences that define a culture, even as time passes and it adapts to new influence. Cultural memory is the way a society ensures cultural continuity by preserving, with the assistance of cultural mnemonics, its collective knowledge from one generation to the next, rendering it possible for later generations to reconstruct their cultural identity (Assmann, 1999; 2006). References to the past reassure the members of a society of their collective identity and supply them with an awareness of their unity and singularity in time and space, which is a historical consciousness - by creating a shared past (Assmann, 2012). Cultural memory is local, egocentric, and specific to a group and its values.

Cultural memory is a form of collective memory - it is shared by a number of people and it conveys to them a collective cultural identity (Assmann, 2008). It is about making meaningful statements about the past in a given cultural context of the present. Cultural memory can be defined as the memory that is shared outside the avenues of formal historical discourse, yet is entangled with cultural products and imbued with cultural meaning (Meuburger, 2011). This study investigates how designers can create or make sense of the past in the current cultural set-up. What narratives can designers tell from their and the society's cultural memory which can inspire the design of innovative products and services? Cultural memory acts as an individual or society's databank or virtual library of ideas, where designers can turn to, for inspiration. It is based on material contact between a remembering mind and a reminding object. Objects do not have a memory of their own, but they may remind people, trigger their memory, because they carry memories which have been invested in them (Assmann, 2006; 2008). Cultural memory exists in disembodied form and requires institutions of preservation and re-embodiment. The study proposes ways in which design-driven innovation can be used to strength creative industries to achieve the expected results of inclusive socioeconomic and sustainable development. The design-driven innovation taps on the communities' strengths and creative talents using the society's cultural memory.

Cultural memory is a dynamic social process. It does not preserve or reproduce cultural knowledge without sometimes altering, shaping, or even inventing it, either consciously or unconsciously (Goucher et al., 2004). It is history, but it is about understanding the past in a present cultural setting. That is, the past experiences inform the present and future design initiatives. Memory systems exert great influence on communities over their cultural experiences. The oldest system of cultural memory is the spoken word transmitted through oral traditions. Oral tradition remains an important means of preserving and transmitting cultural memory in this age of technology. Oral tradition is a formal and highly ritualised system of cultural transmission, but it can also reflect changes (Goucher et al., 2004).

Memory is not just remembering the past, but it is strongly connected with physical artefacts, places and social interaction. A rich vocabulary of images and words exists to describe ideas about historical memory and connectedness; remembering and forgetting as interdependent sides of memory. Africans used mnemonic devices, images, visual devices or objects that aid in and order remembering and reconfigure the past. These included royal emblems, shrines and grave markers, staffs, thrones, religious rituals, myths, bead necklaces and many more. In some of these objects, they were painted or incised geometric markings were added to evoke particular events, places, or names from the past. For example, the Yoruba tribe in Nigeria, their cultural memory system was fundamentally oral, and they used a knotted cord, and colours - the lengths of the cord recorded important numbers such as census figures, chronological data, and everyday transactions.

Writing has also served a variety of different purposes in shaping and transmitting cultural memory. Written and oral memory systems utilise both word and image to convey and remember the past. Buildings and monuments, sculpture and painting are tangible and visible means of maintaining cultural continuities across the centuries and also of engineering change (Goucher et al., 2004). Written and non-written works in stone or paint (pottery and pictures), buildings and statues reflect the records of a given culture. Buildings such as the Egyptian pyramids or monumental stone architecture of the ancient Zimbabwe preserve religious cultural memories.

Design and culture

Design can be viewed as a mirror and an agent of change (Moalosi et al., 2010). It changes culture and at the same time it is shaped by it (Röse, 2004). Culture inspires designers to create new things, which in turn influence the

same culture, it had inspired (Smaili et al., 2007). Thus, design can play an active role toward culture, but at the same time, it is subjected to constant change of the cultural context (Matsuhashia et al., 2009). Designers need to recognise that people are cultural beings and the process of integrating cultural factors in their practice should be emphasised. Design is firmly embedded in the user's culture: it does not take place in a cultural vacuum (Margolin, 2002). Users are not just physical and biological beings, but socio-cultural beings (Baxter, 2005; De Souza and Dejean, 1999). Baxter (2005) advances an argument that designers have not yet been able to consciously encode cultural phenomena to the same extent as physical and cognitive human factors due to inadequate research on the area. Innovation and creativity must be assimilated within the context of users' own culture because creativity does not happen in a vacuum, but in the interaction between users' thoughts and the socio-cultural context (Moalosi et al., 2010).

Each culture evolves its own answers to its problems (Hofstede et al., 2002) and every nation has its unique and rich cultural background which is a valuable resource of inspiration (Wang et al., 2013). The use of a society's cultural factors in design has not only made technologies most appropriate for their social context, but makes better use of culture itself as a resource for innovation (Moalosi, 2010). It is acknowledged that consideration of cultural memory might pave the way to the diversification of design concepts, and this would facilitate product innovation. Consideration of cultural diversity can widen the variety of insights which can be used as a source of inspiration for designing sustainable practices (Matsuhashia et al., 2009). Culture can be implicit and explicit. Designed products, just like culture, can reveal visible attributes (functional and aesthetic) and non-visible such as (emotional attributes). Above all these attributes and factors, the product should be symbolic to the society. Culturally orientated products can be used to mark the boundaries between groups, to create and demarcate differences or commonality between figurations of people (Featherstone, 1995).

In the field of design, the idea of a neo-liberal form of globalisation should be strongly contested (Dong, 2008; ICSID, 2002). Globalisation is seen as a force that must be opposed because it results in the unification of people's culture through standardisation of products. Universality is a value that is reminiscent of the industrial era, but is no longer meaningful in a post-industrial world (Krippendorff, 2006). In reaction to globalisation, it is noted that an opposite trend is emerging within the creative industries, which promotes local identity and highlights cultural values and traditions. Therefore, globalisation has sparked off a new awareness of local identity. Designers are challenged to foster cultural diversity through the localisation of products (glocalisation) in the face of globalisation. For example, in a study conducted by Samsung Design (DeLarge, 2004), it was revealed that users around the world are no longer willing to simply settle for one-size-fits-all type of products.

Memorable design does not always depend on a clever idea or advanced micro-electronics, but can be born out of an honest understanding of human sensitivity and values [33]. Designers who focus on the intelligence of their users rather than the intelligence of their technology will produce the innovations that really matter (Ross, 2002). Ross (2002) argues that innovation starts with people, not with enabling technologies, and the designers' main role is to mediate between technology and culture, and to add ethics and aesthetics to technology. In this case, designers become agents of cultural change in the globalising world.

Creative industries

The creative industries foster an economic setup which considers different cultural identities, economic aspirations, social disparities and technological disadvantages. The creative economy brings issues relating to culture and technology into the mainstream of economic development thinking. The creative economy is taking place in an era of global transformation, creativity and knowledge as the aforementioned are fast becoming powerful means of fostering development gains. The interface in creativity, culture, economics and technology, has led to abilities to create and circulate intellectual capital, which generates income, jobs and export earnings while at the same time promoting social inclusion, cultural diversity and human development *(Creative Economy Report, 2013)*. The creative industries generate cross-cutting linkages with the overall economy at the macro and micro levels. This scenario presents new opportunities for new emerging economies to leapfrog into high-growth areas of the world economy *(Creative Economy Report, 2013)*.

The creative industries are the drivers of the creative economy. There are based on the creation, production and distribution of products and services that use intellectual capital as their prime contribution. The sector includes different creative activities such as arts and crafts, publishing, music, and visual and performing arts to technology-intensive and service-oriented industries such as television, film, radio broadcasting, new media and various design disciplines. The small micro medium enterprises are becoming the keystone of locally based

strategies for sustainable development of the creative industries. This enhances the society's economic, cultural and social life.

Throsby (2001) argues that creative industries create cultural meaning and understanding and thus expressive value. The sector aims at integrating certain cultural tastes in the design to realise products that can sell in a given cultural context (Smaili et al., 2007). Throsby (2001:26) further state that expressive values can be divided in the following dimensions:

i. Aesthetic value – the value that reflects beauty, harmony and form as well as other aesthetic characteristics.

ii. Spiritual value – this might be either secular or religious – the quest for spiritual meaning shared by all human beings. The benefits derived from spiritual value include understanding, insight and awareness.

iii. Social value – an important aspect of artistic work is its capacity to forge ties among otherwise separated individuals. It illuminates the character of the society that we inhabit and creates a context in which relationships and identities can thrive.

iv. Historical value – Each one of us is a historical being, held in a pattern created by time. Part of the importance of artistic outputs is that they offer a unique snapshot of conditions at the time they were created and, in turn, provide clarity and a sense of continuity with the present.

v. Symbolic value – expressive objects are repositories of meaning. To the extent that individuals extract meaning from work, that work's symbolic value will lie in the meaning conveyed by the work and its value to the user.

vi. Authenticity value – this underlines the fact that the work is the real, original and unique artwork which it is represented to be.

In essence, encoding expressive value in design creates new insights, pleasures and experiences. It adds to the society's socio-cultural knowledge, stimulates users' emotions and develops their lives. Designers must co-create with the relevant stakeholders in the community in their design practice. Tung (2012) referred to such a co-creation process as collective creativity. This process normally leads to knowledge creation and transfer, which are key sources of innovation that stimulates local development Bathelt et al., 2004). However, such a design approach has not been fully exploited from the new emerging economies perspective to design products and services that resonate with users cultural being, contribute to social inclusion, cultural diversity, and sustainable human development. McIntyre (2010) argues that a growing niche market for unique and authentic products has emerged from homogenous globalisation-driven market. Other scholars also argue that products reflecting local identity or cultural value offer a form of differentiation in an increasingly converging market (Lin, 2007; Moalosi et al., 2010). Furthermore, Tung (2012) states that imbuing products with authentic characteristics by adapting features from the local culture could be a strategy to develop products which reflect differentiation and self-expression. This change has driven the production system to concentrate on small batches of high quality products that target niche markets *(Creative and cultural skills, 2009)*. Such assertions place creative industries in a particularly strong position to respond to this growing new niche market. This study investigates and proposes new ways designers can encode expressive values from their cultural memories in the design of products and services.

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Research method

The study investigates two case studies to demonstrate how the concept of designing from cultural memory can assist designers in the creative industries to make a significant contribution to the creative economy as well as uplifting the community's livelihood. The case study approach was adopted in this study because it is an empirical inquiry that investigates a phenomenon within its real-life context (Creswell, 2009). The method allows the researchers to explore individuals or organisations, through interventions, relationships, communities or programmes and supports the deconstruction and the subsequent reconstruction of various phenomena. A case study also excels at bringing researchers to an understanding of a complex issue and can extend the experience to what is already known through previous research. It emphasises detailed contextual analysis of a limited number of events and their relationships.

Two designers who work in the creative industries were challenged to design products which are inspired by the local culture. The design challenge was then followed by semi-structured interviews to find out what inspires them to design such products. Furthermore, the study sought to identify the cultural memory factors which these two designers used in their design work as well study how they have transformed and imbued cultural needs in the products they design. Data analysis for this study was

divided into two sections. The first section adopted a conceptual analysis technique in order to identify the appropriate cultural memory factors that designers identified and imbued in the designs. The second section of the data analysis involved a relational analysis approach. It involved investigating how the identified cultural memory factors were transformed into product design features that reflect the users' culture. This involved analysing the semi-structured interview data. All interview sessions were taped recorded and then transcribed. Themes, patterns and relationship were developed from the transcripts. A coding framework was developed and to code the data. As the analysis continued, new codes emerged from the data and the coding framework was updated. This coding process assisted in building key concepts and theories in creating summaries of the findings.

Findings

This section discusses the designers inspiration behind designing cultural-centred design. This is illustrated in two case studies which were inspired by: (a) basket weaving – is an integral part of Botswana's agricultural culture and a traditional practice which is mostly done by women in rural areas. (b) The other case study inspiration involves women carrying their babies on the back when doing household chores. These traditional women's roles shows how they have inspired the design of contemporary design products. This section reflects on the findings of the two case studies on how cultural memory products have become mediators of social communication. The findings also proposes a validated culture-centred design model which can assist other designers to design cultural-orientated products and services.

Inspiration to design cultural-centred designs

In responding to what inspires the designers to design products that encode cultural elements, they expressed that:

> *The country's, history and unique its position in Africa is a valuable asset that could be utilised in product development (Designer A).*
> *Cultural orientated products mirror the Botswana's rich cultural diversity… […]all impressive indigenous work is slowly dying and is not being passed from one generation to the other. It has been always a motivation for me to infuse the culture and history of Botswana into the products that I design in order to reflect, and preserve our culture (Designer B).*

Based on the interview findings, the two designers first immersed themselves within the community and identified the following cultural memory factors associated with the art of basket weaving and putting a baby on the mother's back as part of the local cultural activities: Togetherness, cooperation, sharing, traditional patterns, cultural heritage, *botho* – humane behaviour and building relationship (love) and trust. However, designers also indicated that they draw inspiration from the following cultural elements: ancient pottery designs, traditional mud huts decoration, traditional figurative elements and symbols and ancient rock paintings. The next section will discuss how the identified cultural memory factors were transformed and imbued into product features.

Case Study 1: Using Tswana baskets patterns to design a table placemat, wall paper, and T-shirt

The designer's inspiration came from the diverse artistic environment such as traditional baskets which were identified as one of the leading traditional craft products in

Figure 1. Inspiration drawn from the symbolism in basket weaving.

Figure 2. Basket patterns

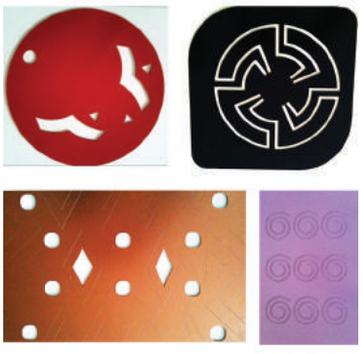

Figure 3. CAD Models

Figure 4. Selected pattern

Botswana which reflect the users' culture (Figure 1). The baskets were used as storage systems after harvesting. Behind these baskets, there were intricate patterns that represent metaphors of symbols, unique names, etc. Most people are familiar with basketry, but they are not aware that the patterns used in baskets have symbolic value and meaning. Therefore, the traditional basket patterns and their symbolism were identified as the cultural memory factors to be used in the new designs. Cultural elements are a key to creating a local sustainable experience. The designer found a niche in this by transferring traditional cultural elements into a contemporary product design. Designer A argues that *"this was one way of preserving the country's cultural heritage and reflecting the dynamic nature of Botswana's cultural trends, linked it to its roots".*

Figure 1 shows women weaving baskets and various basket patterns. The cultural meaning in these baskets includes: the '*tears of the giraffe*' signify women following men on a hunt. The *'roof of roundavel'* illustrates how Batswana (people of Botswana) thatch their mud huts. Some other symbols are derived from observations of how an animal moves, such as a '*running ostrich*', and the '*forehead of the zebra*', the '*flight of a swallow*' which signifies that when the swallow birds migrate, they fly in a triangular pattern before it rains. It is a sign of *pula* or rain, which signify good fortune etc.

For this project, the patterns depicting a *running ostrich* were chosen to be used in the new product development (Figure 2). The designer focused on transforming the pattern from abstract sketches to a range of computer aided modelling (Figure 3). The patterns were then transferred from their original context (baskets) to a new perspective of imbuing them in a table placemat (Figure 4). The application of patterns to a new medium and function was achieved through the use of laser cutting technology.

Figure 5. illustrates the detailed design of the manufacturing process and Figure 6 shows the final product.

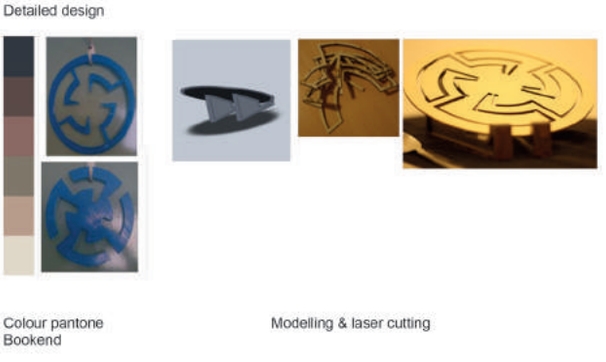

Figure 5. Detailed design

Figure 6. Final Table placemat (K. N. Setlhatlhanyo 2014)

The designed placemat has symbolic significance because it has narratives of the users' culture. The act of eating brings families together to share experiences and build everlasting relationships and trust. The design can be given as a gift for the newlyweds, someone celebrating a birthday, or for a new home. Moreover, the same patterns were explored to produce other products which also portray the users' culture (Figure 7).

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Figure 7. Other products made from the same cultural pattern (K. N. Setlhatlhanyo, 2014)

Case Study 2: Enduring bond Jewellery (necklace) design

This case study reports on a project that was done in response to a jewellery design competition organized by the Diamond Trading Company in Southern Africa. The theme of the competition was '*enduring bond*'. This theme was interpreted from an African perspective to reflect the realities on the ground such as local emergencies, needs and demands. The aim was for the designer to interpret on ancient vocabularies of form, materials and craft, into a new visual language that creates African icons anew. In other words, it was about the juxtaposition of the traditional and contemporary cultures. In the case, the designer was inspired on how African women carry their children on their backs. Figure 8 illustrates the process the designer took to design the necklace.

Figure 8. Mother-child bond necklace. Illustration and Photo courtesy of Thusonyana Caiphas Othomile and Diamond Trading Company Shining Awards respectively, 2012.

Figure 8 shows a woman figure carrying an infant on her back when doing household chores or putting the baby to sleep. This is a typical lifestyle theme integral to most African societies. The enduring mother-child bond starts to develop and nurtured at this early stage when the child is put on the mother's back. When the child grows, that bond has long been cemented by the tender loving care the child receives from the mother. The traditional mother-child symbolism has been used to create a contemporary necklace. Figure 8 portrays the embedded message that the product invokes in the role women play in the society. To any African mother, the necklace symbolizes the lifestyle they endure in bringing up their children. It also symbolizes their identity because all mothers at one point in time will also take care for their children in the same manner. For the African children, the necklace shows the tender loving care extended to them by mothers at an infant age and this is represented by a heart shape which in infused to bond the mother and child (Figure 8). In totality, the design shows the development of a relationship or enduring bond between the mother and child. The design also shows the development of a relationship or enduring bond between the mother and child as well as the symbolism used to convey a socio-cultural message.

Fig. 8 shows a cultural inspired gold and diamond necklace which has a global appeal. The intention was not to make crude cultural products, but globally a competitive product which is inspired by cultural considerations. Designer B asserts that, "*taking such a design approach is in response to a global need for more differentiated products which promote local identity*". The traditional theme and its symbolism add value to the product. This resonates well with a user's identity, provides relevant cultural meaning and forges a strong user attachment to the product. The two designers expressed that,

> *…such a design is not only satisfying users utilitarian needs, but meets their aspirations, socio-cultural needs and emotions. Users emotions are culturally specific (Designer A).*
> *Designing with cultural memory, empathy provides users with an emotional attachment, narratives and it results in intense user experiences (Designer B).*

Cultural memory products as mediators

Evidence from the two case studies show that it is through the use of, and social relationship with, the products that cultural memory factors become visible. Chapman (2005) argues that it is through immersion that products become known and wholly understood. The product becomes a mediator and creates a social communication link

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between users and their culture. The message embodied in such products (Figures 6 and 8) shapes and controls the scale and form of human association and action. Cultural products embody, reflect and mediate the views of the society from which they emerge (Figure 9). Cultural artefacts of any given society at any given time reverberate with the themes of that society and that era. Products facilitate interaction and users establish '*quasi-social relationships*' with them. Products that users own, express their social identity. It is a quasi-social relationship because the products stand in for the other social beings.

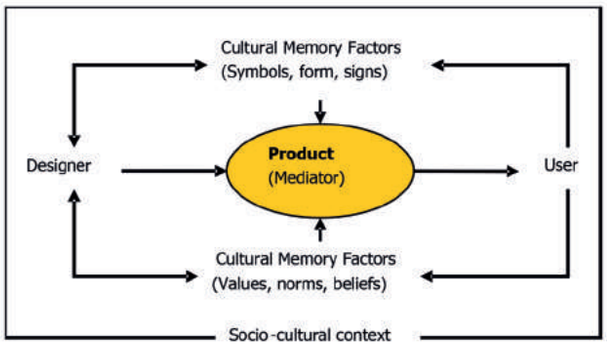

Figure 9. Mediation framework

In Figure 10, the user receives messages from the designer through the product. The product carries cultural messages by being encoded with a shared set of cultural memory factors (symbols, form, signs, values, norms and beliefs) from traditional and contemporary sources. Therefore, these sources act as mediators of cultural memory narratives or as mediators of human thoughts and behaviour. This introduces the concept of *representation* in products. For example, symbols may convey commonly held cultural values, and can be used to gain greater power if emotional fervour is attached to them.

The design can be modified to make it more responsive to users' needs based on their feedback (Figure 9). These needs may be utilitarian – intended for the purpose of performing physical tasks – or they may contain expressive values; that is, aimed at communicating personal, cultural, symbolic, spiritual, social and aesthetic experiences. Cultural needs are often complex and blend both utilitarian and expressive values. All this is influenced by the local socio-cultural context in which the mediation is taking place through elements such as customs, values, norms and beliefs that users bring to their reading of form and symbol.

Culture-centred design model

The model in Figure 9 can be simplified by studying how the two designers specifically imbued cultural memory factors in product design. Figure10 shows the process which was followed by designers in discovering, interpreting and encoding cultural memory features in product design.

What is emerging from the two case studies as illustrated in Figure 10 is that, they immersed themselves in a context to discover and understand users cultural memory factors. The identified cultural memory practices of interest were then drawn in abstract form. This symbolism was applied in designing a new product in a different context which has no association with the previous product features. Designers used the bi-associative technique to relate two areas which have never been associated before. The result of such an association is an innovative cultural product which has a recognisable product image embedded with intangible narratives that can facilitate users' acceptance. The product has a specific product image based upon symbolic expressive values. It projects a slightly different metaphor and meaning for everyone who uses it. All these activities take place within a given socio-cultural context.

This model depicts the approach of bringing together traditional and contemporary areas of knowledge in design. The focus is on how the output can be practically

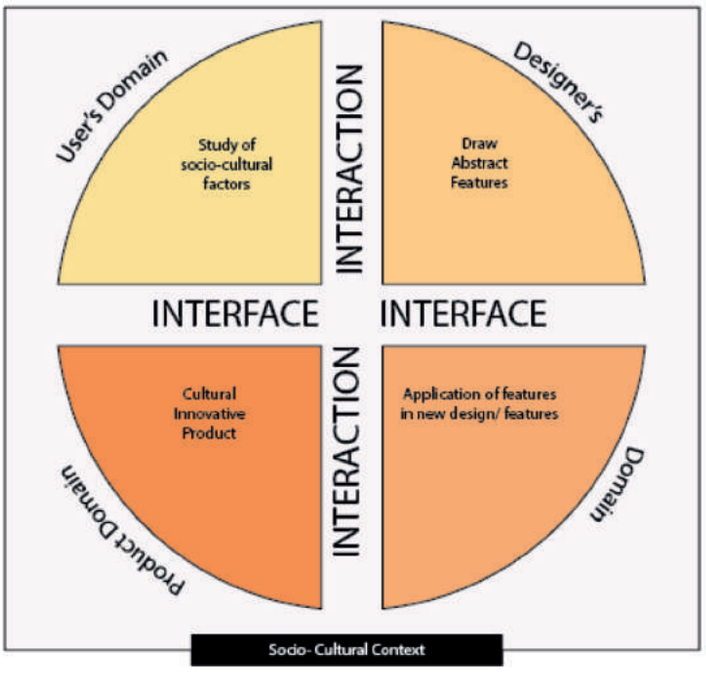

Figure 10. Culture-centred design model

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linked and integrated successfully in a product design environment to stimulate the creation of culture-centred innovative products. A culture-centred design model should provide tactile quality, symbolism and a story that gives products' value and meaning (Moalosi et al., 2010).

Lessons for design education

Designing from cultural memory connects three periods, which include cultural rituals, perceptions and recollections evoked from the *past*, and also makes reference to the *present*, but always views the *future* in developing an image and identity of the community. This approach gives prominence to the social context, relations and dynamics within which recollection takes place. To design from cultural memory requires that student designers should directly immerse within a given context or community to enhance their knowledge on culture and commencing the design process from their cultural heritage. When training young designers to consider the wider community (people unlike themselves) during the design process, it has proven extremely valuable to take them outside their comfort zones, by seeking to develop empathy with the end user for whom they are designing (Thomas and Mc Donagh, 2013). Krippendorff (2006:205) argues that "*design strategies that go against the ecological wisdom of a culture are likely to fail.*" Therefore, this approach facilitates empathy and a mutual learning process where the student designer gain immerse insight and understanding of what the community sees, hears, feels and experience. Design empathy draws on information about the user and his/her everyday life, and it includes the inspiration for 'a feel' for the user (Postma, Lauche and Stappers, 2009). Student designers can uncover the users' unspoken latent needs of which they will be in a better position to translate them into tangible design outcomes.

Design empathy plays an important role in designing from cultural memory. It builds a creative and deep emotional understanding of users and their everyday lives for new product development (Postma et al., 2012). This can inspire and unlock the creative capacity for innovation in students. Designing from an empathic position brings changes in the cognitive learning style leading to field dependent thinking. This can help student designers to put information in context and pick up contextual cues from the user environment which will then be translated into innovative design features that resonates and builds a stronger emotional connection with the user needs (Postma et al., 2012). The result of such an experimental approach can enable student designers to co-create, co-develop and prototype innovative iterative processes and products applicable to the African development context.

Guiding and nurturing students' abilities to tap into the user's cultural memory and experience are important steps in teaching them to co-create products, services and systems that appeal to users at functional, emotional and cultural levels. Furthermore, this design approach assists to avoid instances where student designers are contextually remote from the communities and environments that they seek to design for. In support of the latter, Thomas and Mc Donagh (2013) argues that designing in the scientific mode (research conducted at a distance from participant) fails to generate holistic outcomes. Student designers using this approach need to learn to listen, observe and respect the community's latent creativity. Design education can learn that small, local efforts such as designing from cultural memory can become a global force for product innovation and change, if like-minded people network across the globe.

The study has provided vital lessons for design education, especially from the perspective of developing economies such as Botswana by decolonising design education from predominately Western values. Cultural memory can be used as a vital design resource for strengthening the new emerging economies design curricula by encoding the local cultural content and meaning as a way of recognising the indigenous voices in the formation of a postcolonial culture (Moalosi et al., 2008). This may enable local student designers to exploit their cultural and geographical uniqueness in response to a global demand for more differentiated products and services. Student designers and design academics will have an appreciation of using cultural memory in product innovation by developing creative ideas and solutions. This design approach can improve design practice and education, because academics will be assisted in understanding how to encode cultural memory in product design and use culture as a teaching tool through the proposed culture-centred design model and the case studies discussed in this paper provide the needed guidance. Students can follow this suggested process:

i. The user domain illustrated in the culture-centred design model (Fgure 10) demands that student designers should conduct user research in the community. This can be accomplished by using the following data collection instruments: individual interviews, group interviews, observations and in-context immersion. These instruments help students to identify with other people's thoughts and feelings – their motivations, priorities, values, emotional and mental models, preferences, and inner conflicts. The analysis of the data from interviews, observations and in-context immersion should lead to key insights/themes of the challenge under study.

ii. In the designer domain phase, the student designer is expected to transform the key insights/themes into actionable solutions or concepts. On this ideation stage, co-creation and empathic design methods are recommended because the focus is on people, thus understanding their cultural practices, behaviours, rituals, etc. In this creative problem solving phase, the student designer should play the role of a facilitator to co-create innovative and impactful solutions with the community. Key cultural abstract features identified in the user domain should be applied creatively into new designs in a context they have never been used before to create a surprise, aesthetic and interesting product emotions (Figure 8). Students can associate two areas which have never been associated before to co-create visceral, behavioural and reflective designs that evoke the users' senses.

iii. As a result of this co-creation process, students can create a value chain that leads to the development of culturally innovative products which satisfy the community's cultural and emotional needs. The product should evoke cultural memories worth remembering. The design should be authentic, unique and it should be encoded with deep symbolic meaning which tells a story about the community. It should have a vision, which goes beyond simplicity, futuristic, spirituality and encode pleasure.

The proposed process is offered to complement the existing design processes and it is not meant to replace them. Evidence from the literature shows that students who have followed such a process, demonstrate increased sensitivity to and respect for others and have continued to practice empathic research during their education (Thomas and Mc Donagh, 2013).

Discussion

The findings show that designers can tap from their empathy, cultural memory and those of their communities to design products imbued with local value and meaning, and with an international appeal (glocalisation). Such products are bound to be accepted by users because they reflect their lifestyles, identity and preserve their culture. Designs conceived from a cultural memory perspective may provide users with cultural meaning which facilitates their acceptance (Moalosi et al., 2010; Throby, 2001). The products authenticate people's experiences.

Response to such products often produces a mixture of intrinsic and extrinsic meaning. A product cannot express its own meaning; the meaning must be constructed, given and produced through social discourse and cultural memory practices. In this instance, meaning can be produced through encoding designs with symbolic significance or value. Meaning provides an essential foundation upon which arousal and emotion is constructed. Products are no longer only seen as functional objects, but they are seen for what they symbolise: their meaning, association and involvement in building users' self-identity. They should not only have form and function, but also have "content" that is meaningful for the users. That is, the two case studies have demonstrated how designed products bring people together, to cooperate, share experiences and ideas to sustain their cultural heritage.

The localisation of products can lead to designs which are in-line with users' lifestyles. Culture-orientated designs act as mirrors of users' lifestyles. These designs portray users' identity while at the same time reflecting their norms and expressive values. The intent of localisation of designs is to reflect an in-depth knowledge of the local user's cultural context. This can be achieved by incorporating unspoken and unconscious characteristics of users from their cultural memory. Unspoken characteristics include local rituals and customs, whilst unconscious rules involve values and belief systems. These characteristics can be transformed into common local symbols, motifs, colours and imagery that build a closer identity with the local culture. This ensures that local products are highly specific and engages local users in a manner to which they have become accustomed.

Products are a means of social identification and differentiation. Such designs reflect the traditions and values of the society and express social meaning in term of who the users are (their history – historical value), to whom they are connected socially and their future aspirations. They also act as powerful cultural memory cues; that is, they can remind users of past achievements and relationships, and can become concrete manifestations of user's biography. Such an initiative ensures cultural continuity and building of collective knowledge which will be reconstructed by the next generation to form their identity (Assamann, 1999; 2006). Designs which reflect identity may enable users to have a social affiliation with others. Identification with a "*valued other*" enhances self-esteem and self-concept. To counter globalisation and homogenization in the global world in which local identity is increasingly being threatened, local culture can be used by creative industries to enhance user's identity and distinctiveness.

Above all, products that act as "mediators" create a spiritual bonding – spiritual value to users (Throsby,

2001). Spirituality can be used as a source for cultivating a sense of what is worthwhile to human welfare and life enhancement, seen in relation to the individual and humanity as a whole. It links design to a process of social improvement that becomes the material counterpart of spiritual development. More and more users buy products for intellectual and spiritual nourishment. This indicates that the appreciation of pleasure in product use is becoming of primary importance, and users are demanding products that strike a certain emotional chord. In support of the latter, Tung (2012) argues that users demand has shifted from products which compete with each other solely on the basis of price and availability of products which compete through their individuality, culture and design value, aesthetic appeal, and symbolism. Moreover, a well-designed product communicates quality and value, and enhances the user experience. The two case studies demonstrate that some designers in the creative industries are tapping on this niche area to drive innovation in the creative economy.

The findings of the study can be used as a starting point in teaching design programmes, conducting research and practice in the new emerging economies, such as Botswana. Design students will be empowered to appreciate their cultural memory and use it to design glocalised products and services. The case studies demonstrate to academics, designers and design students that cultural memory can be used as a source of product innovation. The proposed culture-centred design model will assist other designers, design students to have an in-depth understanding of how they can identify cultural memory factors, transform the same into contemporary product design features. The model will further assist design students and practitioners to be creators of user contemporary identities as well as pleasurable cultural experiences.

Conclusion

There has been little in-depth research conducted on this topic, except for a few related studies which acknowledge the importance of culture to product design in the context of creative industries from new emerging economies. This study develops cultural knowledge and confidence to challenge the dominant Western culture in design practice, and advance local thought, content and solutions that resonate with users cultural being. The study attempts to address the gap in the literature because it proposes a new way of designing from users' cultural memory in order to add expressive values to products and services designed by the creative industries. The approach of design from cultural memory is offered as a complimentary methodology to existing design methodologies. The methodology advocates for the basic principles of design must be grounded in the society's expressive values.

Therefore, the concept of design from cultural memory provides a point of departure for new design knowledge and new strategies in design thinking that approaches design from a cultural memory perspective. Cultural knowledge and expressive values could enrich the contemporary design theory and underpin creativity, innovation and sustainable development in design practice. Designers act as catalyst for change by facilitating knowledge creation and transferring ideas from one source to another context in the community to stimulate the creation of innovative products. The approach serves as a design tool that connects users' heritage and an unfolding design future. Such an approach to design will enable creative industry designers to use local cultural memory to design distinct and unique products imbued with cultural meaning which encodes users' expressive values. Culture has become a powerful driver of differentiation strategy and thus generating sustainable competitive advantage in the marketplace. Commercialisation of such products may in one way, contribute to job creation, income-generation, export earnings and sustainable human development of the local communities.

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