4D Design: Applied Performance in the Experience Economy?

Alec Robertson and James Woudhuysen

Introduction

The *Liminality and Performance* conference incorporated delightful performances and the vitality of the participants was an island of experiences in a rather mundane world of suburban London. Why cannot real life be as rich in cultural dynamics? This paper puts forward the idea that it can be, and will be. It poses the question 'Are the performing arts ready for playing a key role in the enrichment of everyday life in the 21st century'? It deals with the topic from an inter-disciplinary perspective and as such there is some trade-off in depth to assist horizontal connectivity.

The development of new enterprises in advanced consumer economies, especially those based upon new dynamic computer technologies, requires the perspective of creative designers knowledgeable and skilled in culturally rich design. The use of products and performance of services together with the experience of them by people involves the design of particular functional and cultural characteristics. In the recent book 'The Experience Economy', (Pine and Gilmore, 1999) this notion is examined from a business perspective. We are on the threshold, say the authors of a new economic era in which all businesses must orchestrate memorable events for their customers that will transform the value of what they produce. Pine and Gilmore urge managers to look beyond traditional pricing factors like time and cost, and consider charging for the value of the transformation that an experience offers. Goods and services, say Pine and Gilmore, are no longer enough, experiences and transformations are the basis for future economic growth. They put these in the context below. (Pine and Gilmore 1999, pp 194)

> If you charge for *stuff*, then you are in the *commodity* business.
>
> If you charge for *tangible things*, then you are in the *goods* business.
>
> If you charge for the *activities* you execute, then you are in the *service* business.
>
> If you charge for *the time customers spend with you*, then you are in the *experience* business.
>
> If you charge for the *demonstrable outcome the customer achieves*, then and only then are you in the *transformation* business.

Figure 1 below shows two diagrams. The first is a classification of economic value in relation to the development of commerce and industry in general. The second shows this applied to the specific example – having a cup of coffee in a café, from coffee bean to the café experience.
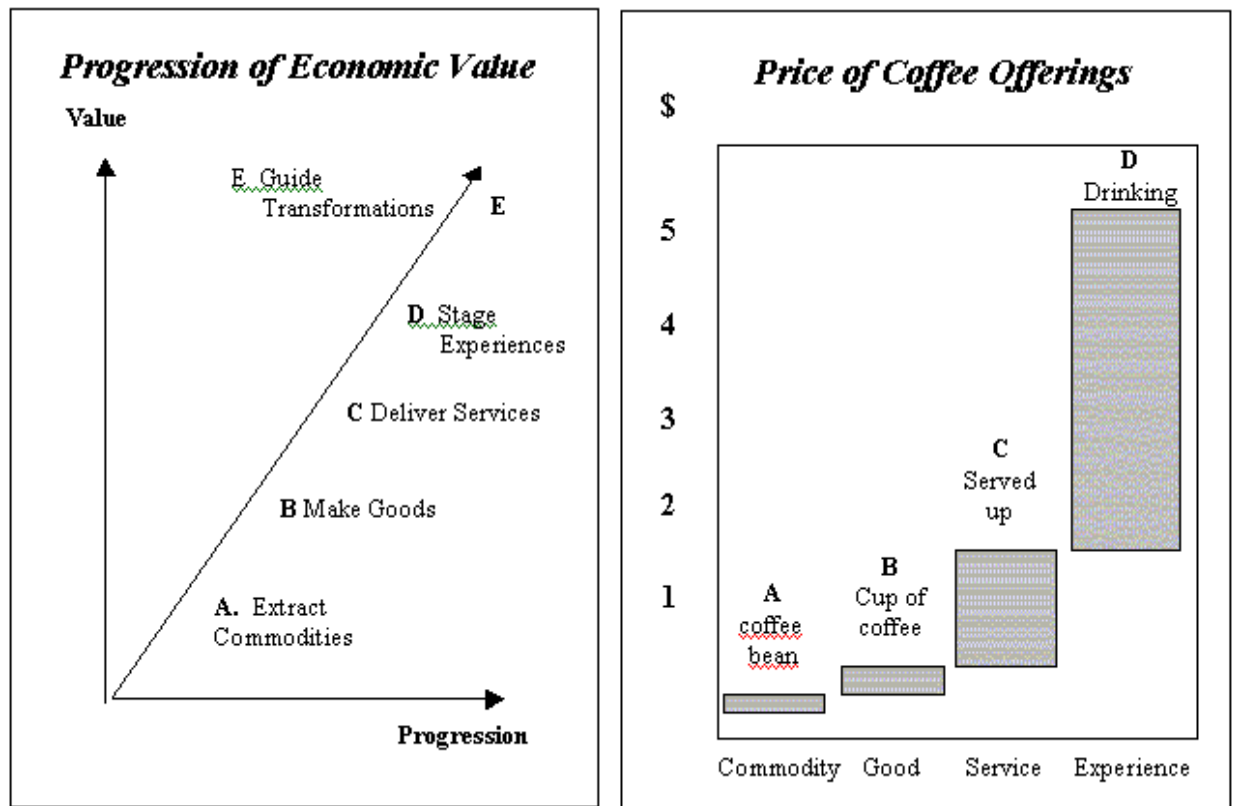
Figure 1: The progression of value adapted from Pine & Gilmore (1999).

A review of the literature turns up little material directly concerned with the design of 'experience' in relation to the practice of performing arts and design in an economic context.. Ervin Goffman, a sociologist made the link between theatrical performances and work (Goffman 1959). Richard Schechner has discussed within performance theory some comparisons between performing arts concepts and those of business such as: drama = strategy; script = processes; theatre = work; performance = offering. (Schechner ,1988)

Stephen Lloyd Smith (2000) draws on political economic theory on 'hand, brain, and heart' for discussing the notion of 'emotional labour' related to the service economy. Thomas Mitchell (1992) indicated the need for a redefining the focus of artists and designers from physical form to experience, and the topic is indirectly dealt with in compilation of art and design critical writings in "Design after Modernism: Beyond the Object" edited by John Thackara (1988). Brenda Laurel (1991), deals with the issue of the relationship between performing arts and computer-related design. She explored the notion that theatrical drama, was not just as another metaphor for the design of interfaces on-screen, but a fundamental means of understanding human-computer interactions. Perceptively, she wrote:

The search for a definition of interactivity diverts our attention from the real issue: How can people participate as agents within representational contexts? Actors know a lot about that, and so do children playing make-believe. Buried within us in our

deepest playful instincts, and surrounding us in the cultural conventions of theatre, film, and narrative, are the most profound and intimate sources of knowledge about interactive representations. A central task is to bring those resources to the fore and to begin to use them in the design of interactive systems. (p21, Laurel, 1991)

However none have fully conceptualised what the economic progression of value to the 'experience economy' in relation to design. The closest we get within the context of 'art and design' designing is at a major conference held to explore 'dynamics' related design at De Montfort University in 1995 entitled 4D Dynamics. Alec Robertson, organizer of '4D Dynamics' defined 4D design as: 'the dynamic form resulting from the design of the behaviour of artifacts and people in relation to each other and their environment', and he subsequently expanded upon the implications for product design in 1997at PDE 97 held at Brunel University. (Robertson, 1997)

The question to be addressed is 'How can 'performing arts' and 'design' relate to the changing nature of economic activity? To answer this there is an assumption that the role of culture has a significant role to play in modern world and the performing arts and design have both contributed to this in their own way. A second assumption is that if economic activity changes then design activity will change.

The performing arts have focused upon the 'fine arts'. Design has focused upon the cultural component of physical artefacts of architecture, industrial design, graphic design, fashion design and so on. The focus on the design of experience in the everyday world takes both the performing arts and design into new territory. Performance is taken beyond the 'fine arts', and designing a step beyond 2D communication design – the advertising poster etc. and 3D design of objects – clothes, houses, cars etc. Experiences focus on the design of the dynamics of activities of people and artefacts with a strong cultural component, which is becoming known as 4D design.

From the design of work generally to the design of e-commerce portals of the internet, the focus is on the creation of dynamic situations and dynamic cultural 'performances' people value. Design is fundamentally about the creation of value. The creation of 4D value, in contrast to 3D value within the material of designed objects, starts with creating a value through dynamics, where people and digital technology can be used to enable and enhance this value.

4D value

4D value is the term used here to define the value of 'experiences and transformations' that are designed. It is based upon the design of cultural activity, not in the pure sense of 'the arts' but as the successful application of arts concepts into life itself and artefacts. 4D value has evolved all around us, as writers on sociology, business and performance theory have observed. But it is not recognized as having been 'designed' or as 'a design'. It is usually viewed just the experiences of living– they way we do jobs, they way we operate machines, they way we eat our food, the way we drive our cars etc. However in the 'experience economy' these will be increasingly designed.

4D design involves 'applied performance' and the assertion here is that it will provide new professional opportunities for performing artists. This is very significant. The prefix 'applied' is used commonly to mean the application in real situations of a

knowledge often in a commercial context e.g. applied science as contrasted to pure science of scientific research without any application in mind.

In everyday situations the idea of integrating performing arts and performance art into real situations is not new by far from street theatre to 'invisible theatre', explored by Nicholas Arnold (in Robertson, 1995,p5).

"…. performance events are derived from and are designed with reference to the physical and social activities of .environments. They are intended to blend with their surroundings, rather than to transcend them, which is the usual aim of street theatre."

 (Arnold, 1995)

However, 'invisible theatre' does not intend to have a functional purpose as well as an arts one, whereas 4D design involving applied performance is truly integrated into everyday acts.

To illustrate the point further about designing 4D value, it is helpful to look at the situation provided by the Japanese Tea Ceremony - 'Chado'. What are people 'doing' when they 'do' tea, and how can we apply the benefits embodied from the way of tea to the products and services of everyday life, and particularly to guide the beneficial application of technology?

Joseph Keenen of La Salle University USA points out (Keenen, 1990), that the tea ceremony can be an informal tea, which consists of serving a sweet and some tea, or even a small meal with the sweet and tea. This is called a 'chakai' and can take anywhere from 20 minutes to an hour or so. Guests also can be invited to a much more formal gathering called a 'chaji', which involves highly structured gathering rituals, the serving of a meal in multiple courses, an intermission in a garden, and then a solemn thick tea ceremony followed by the less solemn thin tea ceremony. 'Doing it' in the Japanese tea ceremony involves much aesthetics – starting with the appearance of the food, the utensils used in serving the food, and the decoration of the eating place, and the increased amount of ritualized movement that is necessary when 'doing it'. The arrangement and serving of food in a chakai or a chaji can be so striking in beauty and so subtle in choice and form that it is almost on the level of visual poetry. Contrast this design of experience with that of throwing a tea bag into a mug of hot water or getting a cup from a vending machine.!

So can we bring the performance art form of Chado into everyday life with the purpose of increasing the quality and therefore value of everyday experiences?

In some everyday situations 4D value has been designed. For example McCrakken (1988), identified several rituals designed for air passengers – divestment rituals, grooming rituals, exchange rituals and possession rituals. These rituals are 4D designs involving applied performance as the air travel product is experienced. 4D value is particularly important in the service industries – banking, retailing, travel, restaurant, telecommunications etc. However, service design is a neglected area for the design profession as uncovered by a UK Design Council study by Nigel Slack and Michael Shulver, of the Warwick University Business School. Services comprise 73% of the UK GNP.

Design texts and design professionals, when they did consider services, looked at very limited aspects of the service such as; service environmental design, décor, tables, chairs, ergonomics…and so on……(.however) it is the mechanics; the service processes and core resources that are the design priority. (Slack and Shulver 1998)

The design of services is of concern to business and systems are designed and developed to deliver them. However services could currently be regarded as being functionally engineered rather than designed, since the cultural component receives relatively little attention as indicated by the services literature. Lloyd Smith points out that service texts ignore the notion of 'emotional labour' in service systems (Lloyd 2000).

So how can we envisage this 4D value being created through design?

4D designers and design teams need a knowledge of both the ethnography of people and the performing arts, together with and some idea of how to apply the methods and concepts involved within the design process.

Enthnography involves the study of social activity in relation to the artifacts of a society and it is a well-established way of describing 'what is' within anthropology (Hammersley et al 1995). It is increasingly being used for identifying new technology applications in California's Silicon Valley (Nardi, B.A, 1999). Performing arts involve theatre productions, dance, mime, music and song and they are as diverse as the cultural and geographical origins where they evolve. Figure 2 shows 4D design methods as the powerful combination of Ethnography and the creative performing arts. It is this power which underpins the developing design practice of 4D designers and processes of 4D design.
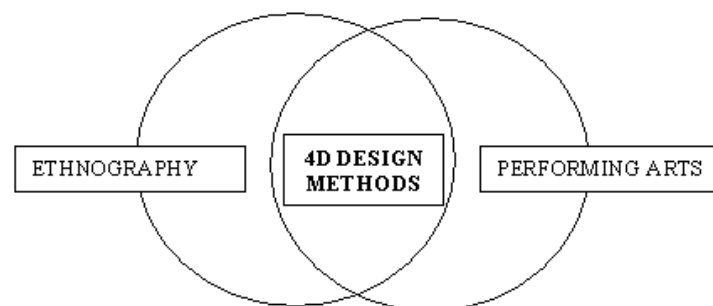
Figure 2: 4D design methods in relation to ethnography and the performing arts.

People in everyday situations will be the focus for the creation of much 4D value, as they are in the performing arts, and this is most challenging for 4D design. However the development of new technologies, such as multimedia and mechatronics also enables 4D value to be created in the built environment. The creation of 4D value in artefacts is through the design of product performance beyond a functional context, and the term 'product opera' was coined by Alec Robertson to describe this (Robertson, 1994). Significant dynamic enabling technologies available for 'product opera' are voice synthesis and voice recognition of multimedia, and a variety of sensor and control technologies from mechatronics. Indeed there are many technologies being developed, such as in AI (artificial intelligence) and elsewhere that will make their way out of the laboratories into the everyday world. They will

need to be applied carefully by 4D designers, as how they are applied will determine the quality of people's lives.

Where can we see dynamic technologies being used?

Consumer products and services will be designed and developed using the new technologies being developed in the laboratories. Some future scenarios of the application of laboratory to the everyday are tentatively suggested below. Many artefacts will embody a character with dynamic expression. They will not just 'do' they will also 'act'. There are a variety of everyday activities where 4D value can enhance the experience of the use of 'things'.

Shopping

We can envisage an increasing development of the shopping experience as a more leisure based one. Customer care will become customer entertainment. The reason for this lies in the need for added value in contrast to internet e-commerce shopping. As such the attraction to go shopping is significantly the 'window shopping' experience extended. The cathedrals of commerce will become theatres of commerce. This does not mean public art squeezed in between the mall shops. The stage will be the mall, the actors will be the sales assistants, and the acts in everyday situations will be the performances. Who better to help put on the show than playwrights and performers in the design team.

Vending machines are becoming more prevalent such as 'cash-in-the-wall' machines. These will take on personalities and respond just how you like them. They will do this by reading data on you from your card or even sensors as your stand nearby. Your mood, health and cultural habits will be used to provide an appropriate response just for you. These machines will become articulated artefacts moving kinaesthetically. Who better than choreographers and dancers to help design these? The friendly local corner shop is a valuable asset to a community in English villages as it offers a personal service rich in local cultural content where the act of shopping takes on the qualities of theatre high in 4D value within the dialogue, gesture, anecdote, gossip and multi-sensual experiences. E-commerce interfaces therefore should be designed to retain as much rich content in the trip to a local shop as the technology allows and simulate for the e-customer the experience if at all possible, as well as providing the benefits of low cost purchases.

Eating

Cooking appliances will be capable of having a conversation with you. Your microwave oven will help you during preparation of a meal, suggesting recipes and showing you how to do it on visual displays as well as by voice - tips and help offered with jovial banter all included. So who are the script writers of the wired chef in the microwave, the choreographers of the coffee maker and composers for the washing machine? Consumer appliances will not merely 'do', they will 'act', they will sing and they may dance!

Driving

The 'smart car' will have a character as well as style. This will make a reality of Kit the talking car of the Knightrider TV series. It will be your chauffeur , your concierge

for driving. Petrol stations will be 'self service' but with a 'host' in the pump massaging your ego with conversation. The subject will be derived from your smart card as it provides your consumer profile. Your host will greet you and attempt small talk 'just how you like it'..

At home

The example of Aibo, the robotic pet dog from Sony, the Tamagotchi from Banzai, or the cuddly Furby toys suggests further, that the personalisation of technology is upon us. Home systems such as lighting will not only adjust to your needs and moods but also greet you when you open the door. Your house will report on visitors or phone messages awaiting your attention. It will become your servant, companion, security guard and friend.

In the community

The internet and new communications technology in general, such as the mobile phone, enables communities to develop through communication rather than physical location. There is the possibility of large groups of consumers forming 'communities of interest' around preferred Websites, with 'customized interactivity' routines that surround them. The internet site 'LetsBuyIt.Com' encourages consumers to join together in the purchasing of goods and enable low cost bulk buying. James Woudhuysen suggests that much IT consumption exhibits cult behaviour, where IT cult followers love the technology irrespective of whether there are productivity gains. (Woudhuysen 1999). However, such behaviour will extends beyond the application of technology and IT in the 'experience economy'.

Consumer Cults.

The experience economy involves a phase beyond 'staging experiences', such as in the example above of drinking a coffee in a new café. It will involve 'guiding transformations' of people within processes that will be designed to maximize personal development and the value of this.

It is forecast here that this will lead eventually to the design of branded consumer-cults, where design is the binding issue of the community. Here word-of-mouth or electronic communications bind people into a series of shared but also variegated patterns of consumer behaviour, which can be specialized enough to deserve the term 'cult', in the sense that rituals of consumption that are acted out are not fully comprehensible to the uninitiated. These consumer cults will provide a 'packaged life' designed with coherent philosophy, and offering value for money well above chaotic individual purchases. Consumer-cults will have economic power, like trade unions for labour, which will help ensure high standards of design from producers of goods, services and experiences.

This is nothing new, as in the past many kinds of people have grouped together in communities with shared beliefs where their artifacts they have produced embody some of the beliefs, along with their use. Examples of such communities range from the Shakers, who produced some elegant and simple furniture designs for home and church as a result of their religious perspective, and the Amish community in the USA which still uses much 19th century technology, such as the horse-pulled carriage and period dress, to retain the kind of life linked to these artifacts – their manufacture and use. 4D consumer-cult designs are not religion based. They will offer experiences and personal transformations in the 'experience economy', which will be just as valid

as the material based 3D designs for 'goods' were and are for the manufacturing economy. Community designs often manifest themselves as Utopias, and they have mixed success. (Kanter, R.M, 1999). Some branded consumer-cults will establish themselves and other will not. They will mean a new horizon for the design business, still largely based upon manufacturing industry and 'goods'.

Conclusion

The prediction of the creation of branded consumer-cults and the tongue-in-cheek scenarios using technology are all part of design research speculations about what the new 4D design dynamic may mean for the future. They just indicate some possibilities. A main point being that the skills of the playwright, the sensitivity to kinaesthetics of the dancer, the interpretation and oration the actor will all be needed outside the theatre, and concert hall. 4D design is about the sensitive and careful design of performances of people. It recognises people as important and valuable media within the economic everyday situations as well as the exciting possibilities of designing with electronic technologies. A challenge is to focus on people, where technology is used if, and only if , it enhances our experience of the real world and people are better off after its use than before it.

The trends identified and analyses of them leads to some fundamental questions.

1. The first question is to do with disciplines: how can the history, theory and current practice of the performing arts guide designers of these new '4D' experiences? And how can ethnography – 'the scientific description of peoples and cultures with their customs, habits, and mutual differences' also make a contribution ?

2. There is an ethical issue. Is the encouragement by designers, of mass, interactive, game-like or artful consumption the right thing to do? Can they be accused, for example, of duping consumers with a kind of deplorable euphoria, or, would this be merely the welcomed enrichment of mundane experiences in everyday life?

3. Two questions that arise from this analysis are commercial: how can designers put together 4D experiences compulsive enough to recommend themselves to clients? Will performing artists want to involve themselves in commercial design teams designing such 4D experiences?

4. Finally 'where are 4D designers likely to be educated and trained?' Will the focus be within the performing arts as it adapts to real world needs outside the theatre? Will the departments of performing arts in all their variations in educational institutions be interested in teaching 4D design, perhaps as 'applied performance'? Or will design schools need staff of the performing arts for their 4D design courses?

References

Arnold, Nicholas (1995) 'Invisible Performance - A Design for Living', pp 5-7 in Robertson (ed) *4D Dynamics: Conference on Design & Research Methodologies for Dynamic Form*, Leicester: De Montfort University, UK ISBN 1857211308.

Goffman (1959) *The presentation of Everyday Life.* Anchor Books, NY.

Hammersley, Martyn and Atkinson, Paul. (1995), *Ethnography: Principals in Practice'* 2nd ed. London. Routledge.

Kanter, Rosabeth Moss (1999) 'The Limits of Utopias' pp 259 –275 in Yorick Blumenfield (Ed), '*Scanning the Future*, Thames & Hudson. London.

Keenan, Brother Joseph (1990). *The Japanese Tea Ceremony: Tea for all nations.* at <http://www.teahyakka.com> Urasenke-La Salle Tea Ceremony School, La Salle University , Pennsylvania. USA.

Laurel, Brenda. (1995) *Computers as Theatre*, Addison Wesley, p21.

McCrakken, G, (1988), *Culture and Consumption, New Approaches, to the Symbolic Character of Consumption of Goods and Activities*, Indiana University Press, Bloomington and Indianapolis.

Mitchell, C, Thomas. (1992) *Redefining Designing; from Form to Experience*. Van Nostrand Reinhold, New York.

Nardi, Bonnie. A. (1999) *Information Ecologies: Using Technology With Heart*. MIT Press

Pine, B.J, Gilmore, J.H and Pine II, J (1999) *The Experience Economy.* Harvard Business School Press, ISBN: 087 5849192.

Robertson, Alec.(1994) '4D Design: The Interaction of Disciplines at a New Design Frontier' pp 28 in ' *Designing Strategic Interfaces'.* Design Management Journal, Vol. 5 No.3 Summer, Boston USA.

Robertson, Alec (1995) '4D Design: some concepts and complexities' pp 149-153 in Robertson, Alec (ed) '*4D Dynamics: An international interdisciplinary conference on design and research methodologies for dynamic form.'* De Montfort University, Leicester. On-line Proc. '*Cyberbridge-4D'* at < http://www.dmu.ac.uk/dept/schools/des-man/4dd>. ISBN 1857211308.

Robertson, Alec (1997) '4D Product Design , Mechatronics and Multimedia Technologies :Some Conceptual Challenges' in Proc. *PDE 97, 4th National Conference on Product Design Education.* Brunel University, 7 - 8 July

Slack, Nigel and Shulver, Michael. (1998), *Service Design* ,Operations Management Group, Warwick University at Design in Business Seminar ,27 Oct 1998 Design Council.

Scheckner, Ricahrd (1988) . *Performance Theory/.* Routledge, NY.

Smith, Stephen Lloyd (2000*) Emotion, Labour and Culture: towards a device for scrutinising the threshold between acceptable and unacceptable service. Liminality and Performance* Conference, Brunel University.

Thackara, J. (Ed.) (1988). '*Design After Modernism'*. Thames & Hudson.

Woudhuysen, J. (1999) '*Cult IT'.* Institute of Contemporary Arts, London, ICA

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His research publications focus on conceptual modelling for design forecasting and pioneering work on 4D design. Alec has organized several conferences and events as Events Secretary of the Design Research Society, including the 4D Dynamics Conference in 1995, and one on 'Ethnographics' in conjunction with Dr P. Jagodzinski of the University of Plymouth, hosted by Rolls Royce Aerospace in 1998. He is a Fellow of the Royal Society of Arts (FRSA), and a member of the Chartered Society of Designers (MCSD) .

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