

IMPACT OF DIGITAL TECHNOLOGY ON URBAN SPACES

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Abstract

Digital revolution has taken place from the latter half of the 20th century, marking the beginning of the information age. This has been portrayed by widespread digital logic circuits and its derived technologies. Urban spaces have been impacted by the digital revolution as most were conceptualised and formed prior to digital technological advancements. The Digital Revolution has been termed the third industrial revolution as it is analogous to the Agricultural Revolution and the Industrial Revolution. The study looks at research areas on urban spaces in light of the third industrialization revolution resulting from digital technology usage. The objectives of the study are to establish the digital technology uses in urban areas and the physical characteristics of the urban spaces that influence usage of digital technology. The main research method employed in the study is archival in which literature on digital technology usage in urban spaces as well as the physical characteristics of urban spaces are analysed. The findings from the literature review shed light on the digital technology phenomenon and hence used to suggest study areas for design of future urban spaces in the third industrial revolution.

Key words: Digital technology, urban space, third industrial revolution

1 Introduction

Use of mobile phones and other electronic gadgets have transformed the way the public space is used. Pedestrians are at one and the same time part of a physical public realm while engaging in a digital realm. It is now possible for a person to be standing by a planter or seated in a bench on a street while having a conversation with someone who is thousands of miles away in a different setting or for a person to be walking while conducting a business meeting via Skype. The urban spaces have been impacted by these transformations of uses from users socializing among only themselves to users interacting with other users and information globally. These are among other advancements in digital technology that have taken place from the latter half of the 20th century, marking the beginning of the information age. This has been popularly referred to as the digital revolution or the third industrial revolution (Business Week, New York, 1981).

2 Materials and Methods

The method used in this study is archival. Literature from different sources has been looked at to trace the extents of embedding of digital technology in the urban spaces marking the digital revolution.

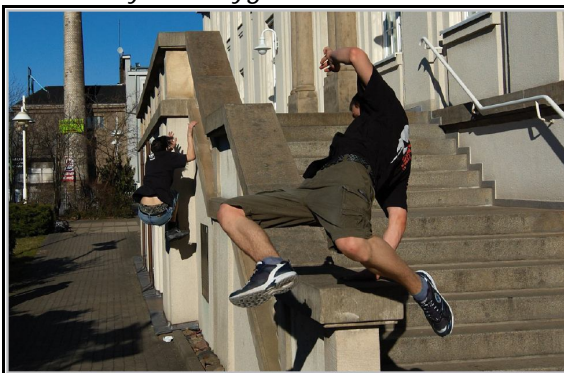
3 Results

Digital technological lifestyles have shifted from being fully on the digital realm and are instead embedded on everyday objects, space and place (Aurigi, 2006). This has caused the urban spaces to be transformed in terms of its usage. The result shows categories in which the digital realm has embedded itself on the everyday lifestyle.

3.1 Urban Digital Gaming

These are interactive digital spaces may or may not incorporate the physical realm. Borries, Waltz and Bottger (2007) discuss levels where urbanism and digital games meet. Ubiquitous or pervasive gaming may modify the social function of urban spaces when users bring and use their digital games. These users are colonising the space by introducing functions that were not designed for. Future designs for urban spaces should consider distinct areas where one can engage in pervasive gaming and this would result to physical characteristics of the urban spaces being enhanced for gaming purposes.

PLATE 1: Hybrid Playground



(Source:<http://www.flickr.com/photos/cosmoflash/22909642771>)

PLATE 2: Gaming Avatars in Second Life



(Source:http://news.bbc.co.uk/2/hi/uk_news/magazine/8367957.stm?ad=1)

3.2 Personal Use of Digital Technology

One of the personal uses of digital technology is that of transforming uninteresting occasions to productive time. Examples include use of digital music or gaming devices for entertainment. Ito, Okabe, and Anderson (2007) say that the technology transforms 'dead time in incidental locations into time that is personally productive or enriching and terms this use as cocooning. Green (2002) says the digital technology devices transform boundaries of public and private interaction and re-appropriate marginalized spaces in the city for work and leisure.

When users in their digital technology devices into a space of personal preference, they are said to be camping. Ito, Okabe and Anderson (2007) point out reasons for encampments such as utilization of resources available in particular locations such as internet connectivity, library books, personalized social resources, food and distinctive ambiance that make the locations attractive to the users.

PLATE 3: Earphones Use: cocooning



(source:http://images.ctv.ca/archives/ctvnews/img2/20120117/800_earphones_pedestrians_ap_120117.jpg)

PLATE 4: Laptop Use: Encampment



(source:
<http://www.jazzhostels.com/blog/wp-content/uploads/2011/11/photo-new-york-city-laptop-webcams-cc.jpg>)

3.3 Urban Management Using Digital Technology

Traffic Management technologies fall under this category whereby digital technology devices are embedded on street systems to maximize traffic flow. Townsend (2000) says that real-time systems are defined by an ability to constantly monitor environmental conditions vital to the operation of the system.

Digital technology has also been used in the urban management for security surveillance purposes. According to Microsoft Corporation (2003), this is achieved by means of Close Circuit Television Cameras as well as web cameras which capture the video and audio situation in a given space and display the contents on a web page or other remote viewing point.

PLATE 5: Reversible Traffic Lanes



(source:http://www.hgac.com/taq/plan/documents/2035_final/appendix%20i-%20smartstreetswhitepaper.pdf)

PLATE 6: CCTV cameras



(Source:<http://news.nairobiwire.com/2012/06/government-urged-to-zero-rate-cctv.html>)

Digital displays are screens that are placed within the context of the public urban space and serve as information boards. The most common use of digital display has been for advertising purposes. Digital technology transportation is a phenomenon of futuristic urban streets whereby users are able to use digitally controlled transport means to move from one place to another within an urban area.

PLATE 7: Digital Display Newsstand



(source:<http://www.signindustry.com/outdoor/articles/images/2011-06-digital-display-newsstand-4.jpg>)

PLATE 8: Future Mobility Vehicle

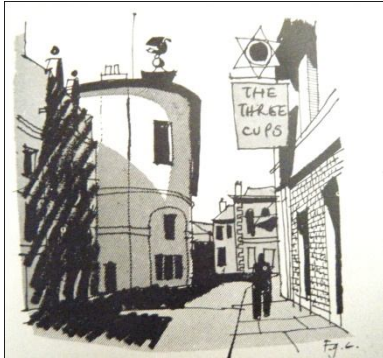


(Source: <http://www.tuvie.com/gemini-future-mobility-vehicle-for-metropolitan-area-of-singapore/>)

3.4 Urban Design Characteristics

Enclosure is the quality of urban spaces that gives them room like qualities. As much as visual termination points create enclosure, digital displays would break it by creating a screen which extends the visual lines to another physical space. An example is PLATE 10. Kay (1997), talks of human scale being defined by human speed. She states that elements being designed for the automobile moving at 60 miles per hour overwhelm the senses, creating disorientation when approached by foot. Digital transportation modes should move users in speeds that maintain the human scale of physical characteristics within the urban spaces.

PLATE 9: Street Enclosure



(source: Cullen (1971))

PLATE 10: Digital Display



(source: <http://black2.fri.uni-lj.si/humbug/files/doktorat-vaupotic/zotero/storage/zucvhbee/2.html>)

The space quality of transparency creates a sense of activity and eliminates the feeling of being alone in the given space. Reid, Otto, Handy, Brownson and Winston (2005) define transparency as the degree to which people can see or perceive what lies beyond the edge of a street or other public space, particularly human activity. Digital space being in a different realm from the physical environment can disengage one from the happening around them and upon return; a feeling of other persons within the space is reassuring.

4 Discussions and Conclusions

The third industrial revolution has brought about advancements in digital technology in the both the public and private realms. The embedding of digital technology in lifestyles has been grouped into those of digital gaming, personal use and urban management. These categories outline key research areas and possible intervention areas that can be undertaken by governments, policy makers as well as urban designers.

Digital technology has evolved over time with different inventions having being influenced by various needs at a particular time. Examples include digital transportation, security surveillance, traffic lights as well as laptop's wireless connectivity. Future areas of study should therefore concentrate on different ways in which digital technology can enhance urban spaces. This would direct inventions and discoveries towards creating more sustainable urban spaces.

4.1 Study Areas of Future Urban Spaces in Light of Digital Technological Advancements

- Influence of digital gaming on the social functions of urban spaces.
- Influence of digital technology resource provision in urban spaces on the number digital technology users within those spaces
- Influence of digital technology on urban management

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