

# On the Obliquity of Ubiquity

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## Abstract

*Ubiquitous computing is emerging, and offers exciting potential. The notion of ubiquity will likely extend to more comprehensive ubiquitous service, as demand grows for the ability to access desired services at any time and at any place. However, these are hardly new notions, and are discussed in relation to visionary proposals put forward in the 1960s. The etymology of ubiquity derives from a metaphysical premise of the spatial and temporal omnipresence of the divine, and the notion extends through traditional religious thought far back into prehistoric belief. While ubiquity is clearly a highly desirable notion, it bears the danger of becoming an overly indulgent wish fulfillment, where all human needs and desires demand immediate satisfaction. Clearly, this represents an unhealthy extension of the idea. What is called for instead I term Wisdom Ubiquity: the wise provisioning of ubiquitous services, which within realistic parameters accommodate an appropriate level of human satisfaction.*

## 1. Introduction

Much is currently being made of the potential for ubiquitous computing, and understandably so in light of its immense potential. By extension, such ubiquity can be extended to more general services than computing, to where it includes the ubiquitous provision of life-support and life-enhancement services. Ubiquity in this context can therefore be taken to mean the ability to access any and all needed or desired services at any time and at any place. But these are hardly new notions. They can be seen in two imaginative proposals for serviced habitable space put forward in Architectural Design magazine by architect

David Greene of Archigram in the late 1960s, which include access to information and educational services.

## 2. Greene's visionary schemes

### 2.1. Instant City Children's Primer (1969)

Instant City project [1] presents a primer and sources that, Greene considers, enables readers to immediately set out to make their own instant village. Greene revises cars as self-powered mobile rooms, traffic jams and car parks as instant and constantly changing communities, and drive-in restaurants and movie theaters as simply collections of service points. House-cars are recognized as self-powered containers adapted for living. A gathering of house-cars constitutes a gathering of living units, allowing the world's forests to become suburbs. While vehicles such as motor-homes may already have autonomous services, key problems of mobile living for those whose vehicles do not, including access to energy, water, and information and communication networks, are satisfied in Greene's proposal by the ranges of **Rokplug** and **Logplug**. These grp simulations of real rocks and logs are set in the landscape, and conceal service outlets. Nature then becomes fully serviced, without detracting from its beauty.

Even in this 1969 visionary scenario, which well predates the emergence of the Internet, simulation rocks and logs - in addition to providing access to cold water, electricity and telephone services - offer access to international information and educational networks, together with a credit card slot to extract payment for services used. Plugs, which might otherwise be undistinguishable from their real counterparts, contain homing signals, which the user locates using Plugfind, a dashboard visual display which also displays charges. Rokplug and Logplug concentrations are also conveniently indicated on traffic signage.



**Figure 1. Logplug, Opoutere beach, New Zealand. The fixed Logplug visible on the beach hides services for picnicking or camping: potable water, electricity, and telephone/Internet connection.**



**Figure 2. Experimental Rokplug, near Hamyang, Korea. Like the view and wish to stay for a while? Rokplug will provide everything you require. Open hatch, insert credit card and select services.**

Greene envisages that plug-based communities will become places of work, education, culture and entertainment. The world's metropolises then become widely available in its leafy hollows, deserts and flowered meadows. Eventually, the steel and concrete mausoleums of cities will decay, and then later the

suburbs; and the world will once again become a garden, with invisible networks in the air.

Here, ubiquity is as it were localized. Needless to say, in a visionary project of this kind, the environmental costs of reticulating Nature are ignored, as are those of having vehicles transiting everywhere.



**Figure 3. Bottery, Long Bay, New Zealand. Woman in center of photo has just consumed bowl of kimchi provided by Eatbot; though its tracks are still visible at left, they will rapidly disappear with wind, rain and tide. Eatbot, Combobot and Skinbot service visitors, short-, and long-term residents.**

## **2.2. L.A.W.U.N. Project Number One (1970)**

Greene then advances his L.A.W.U.N. project for an Experimental Bottery [2]. A **Bottery**, he explains, is a fully serviced natural landscape that utilizes robots to provide for human needs and desires. **Bots** are non-specialized robot appliances made up from interchangeable modules. They enable the individual to pursue his own interests, without disturbing ambient events. No formal statement is made, enabling the individual to effectively remain invisible. Existence becomes transient, and may or may not be evident at a particular location at any specific time. Greene feels this frees the individual from the environmental pornography known as buildings, using instead the untapped energy and information network of the everyday environment.

The only hardware that one needs to carry is a pen-sized Bot call-up device, with which one selects the desired service(s) and presses the homing button. **Eatbot** delivers access to food and drink, **Combobot** delivers access to physical and information services, and **Skinbot** delivers access to personal shelter. Brief communities of people gather at different locations in the world park, and then disperse, their gathering being only related to time, and not to any relatively

permanent built-environment. Afterwards, all will have changed, and no trace need remain of the community, except perhaps in the individuals' memories.

In this project, ubiquity is de-localized, being provisioned through mobile delivery systems. But once again the environmental costs of gathering and stockpiling resources elsewhere, and of then having them delivered, are not considered.

In both of these schemes, the purpose of ubiquity is to free the individual from what Greene sees as the onerous presence of permanent built-form, to enable the individual to return to an innocent state of communing with Nature, objectified as inhabiting the World Garden. The service provision required to achieve this life-support and enhancement is effectively made invisible, only becoming apparent when attention needs to be paid to it, for example in first accessing it, modifying its parameters, or in disengaging from it. This parallels a key principle of ubiquitous computing, which as Weiser points out enhances computer use by making many computers available throughout the physical environment, while making them effectively invisible to the user [3].

### 3. The etymology of ubiquity

Most recently, “ubiquitous” has simply come to mean ‘seeming to be in all places’ [4], or ‘existing, found or seeming to be found everywhere at the same time, omnipresent’ [5]; while “ubiquity” has come to mean ‘existence everywhere at the same time; omnipresence’ [6] or ‘the state of being everywhere at once (or seeming to be everywhere at once)’ [7]. But of course earlier intimations of ubiquity may be found. Indeed the very word “ubiquity”, which was first recorded in 1579, has a religious derivation. It was originally a Lutheran theological position that maintained the omnipresence of Christ’s glorified body [8]. “Ubiquitous”, meaning ‘turning up everywhere’, was originally a jocular extension of the theological word, and was first recorded in 1837. Furthermore, the religious sense of “ubiquity” extends far into the distant past. In mediaeval Christianity, it is recognizable in Meister Eckhart’s sermonizing: *If we say that all things are in God, we understand by this that, just as he is without distinction in his nature, and yet absolutely distinct from all things, thus also all things are in him in the greatest distinction, and yet not distinct, and first of all because man is God in God...* [9]. Similar intimations can be found in other great religions: within Vedanta, Schuon maintains that *... all may be found to be Atma, or Maya, according to the point of view* [10], while the Upanishads teach, *Some contemplate one Name, and some another? Which of these is the best? All are eminent clues to the transcendent, immortal, unembodied Brahma: these names are to be contemplated, lauded, and at last denied.* [11]. Pantheism, characteristic of prehistoric religious beliefs that include Shamanism, maintains a similar position: that of recognizing the spatial and temporal omnipresence of the Sacred [12].

### 4. Raising the obliquity

“Obliquity” is commonly understood to mean ‘state of being oblique: the condition of being oblique’, ‘the deviation from the horizontal plane or the perpendicular’, or more specifically ‘the angle between Earth’s orbit and the Equator’ [13]. However the same source also lists of ‘lack of directness: a lack of directness or straightforwardness in speech or conduct’, and, more relevant to the current discussion, ‘character flaw: a departure from morality or reason’.

We have seen that ubiquity is clearly a highly desirable notion. But it inherently carries a danger of obliquity, in the lattermost sense of departure from

morality or reason. It seeks a state that is deeply akin to wish fulfillment, based on the premise that what I need or want now should be available to me immediately, without frustration, without interruption, without separation. This may be at the profound level of Gnosis, the mystic presence of the Sacred:

*My sweet lord*

*Hmmm, my lord*

*Hmmm, my lord*

*I really want to see you*

*Really want to be with you*

*Really want to see you lord*

*But it takes so long, my lord*

- George Harrison: My Sweet Lord [14].

Or on the more mundane levels of access to energy, information, culture, the Internet, pleasure and accompanying service:

*Sweet blossom come on, under the willow,*

*we can have high times if you’ll abide*

*We can discover the wonders of nature,*

*rolling in the rushes down by the riverside.*

*She’s got everything delightful,*

*she’s got everything I need,*

*Takes the wheel when I’m seeing double,*

*pays my ticket when I speed*

- Grateful Dead: Sugar Magnolia [15].

Or even at the fundamental level of satisfaction of the basic human needs for shelter, water and food:

*Oh, a storm is threat’ning*

*My very life today*

*If I don’t get some shelter*

*Oh yeah, I’m gonna fade away*

- The Rolling Stones: Gimme Shelter [16].

I therefore question whether ubiquity, notwithstanding its abundance of virtues, is always necessarily a good thing. The uncomfortable question needs to be raised: what necessarily distinguishes this primeval urge from the subconscious desire to reenter the womb: an essentially childish desire to have everything provided, without struggle, and to have every whim satisfied?

In response, it may reasonably be argued that ubiquity should be provided for worthwhile services. These services may be regarded by decision makers or by users as being essential, advisable, or merely conducive to a preferred quality of life. Certain services do indeed make such a strong case for ubiquitous provision. We all need access to breathable

air simply to survive. Fire services strive to provide adequate coverage to all those who may require their help in an emergency. Police services work towards providing universal physical and emotional security. But an unquestioning demand for ubiquity may have undesirable side effects. For example, the blind demand to live how and where we want, despite the capacity of the local environment to support that lifestyle, may result in unsustainable settlement patterns that are destructive and unhealthy. Global warming from pollution and the excessive consumption of non-sustainable resources would appear to be an unfortunate tribute to that.

I do not therefore argue for a heroic self-deprivation; but do suggest that wisdom (wherever it may be found) indicates that moderation may sometimes be called for:

*You can't always get what you want  
 You can't always get what you want  
 You can't always get what you want  
 But if you try sometimes you just might find  
 You just might find  
 You get what you need*

- The Rolling Stones:

You Can't Always Get What You Want [17].

In this, I suggest the contemporary age has much to learn from traditional cultures, which often satisfied a wide spectrum of human need in an effective and highly efficient manner.

## 5. Generalizing ubiquity to obliquity

We can in principle make, and are very likely to witness, an unthinking generalization from ubiquitous computing (which is wonderful), through ubiquitous provision of life-support services (which is sorely needed) and of life-enhancement resources (which is desirable), to ubiquitous wish fulfillment (which would be catastrophic!) Science fiction sometimes explores such scenarios, where all human needs and desires are satisfied. I argue such a generalization proceeds too far, and tends towards total indulgence. (However, if, as Weiser suggests [18], ubiquitous computing will bring information technology beyond the big problems we face, to solve even the little annoyances we encounter, why not generalize this even further to where such technological ubiquity has the capacity to monitor our spiritual, psychological and emotional well-being, and - by design - also deliberately furnish us with the frustrations, inconveniences, and disappointments we might just need in order to grow into self-autonomous maturity?)

It is intriguing that Weiser identifies **calmness** as a challenge that ubiquitous computing brings to computing [18]. Computers should stay out of the way, and that means designing them so that the users being shared by the computers remain serene and in control. Calm technology easily moves what we are attuned to from the periphery of our attention, to the center when requiring attention, and back when not. It is fundamentally calming, firstly by enabling us to attune to many more peripheral things, informing without overburdening us; and secondly by enabling us to take control of peripheral items by centering them for attention as and when needed.



**Figure 4. Autonomous Skinbot, available now. The ultralight high-performance gear available today already enables a largely self-contained lifestyle. Low impact ultralight climbing and traveling accords well with the spirit of wisdom ubiquity, and with the doctrine: Live lightly on the Earth; take away nothing but photos and memories; and leave nothing behind but footprints and good deeds. ICI Paine 2-man Gorelite high performance mountain tent, 2mx1m, 1.5kg. (Courtesy ICI-ISHII Sports Fukuoka, Japan).**



## 6. Conclusion: Towards a Wisdom Ubiquity

From one point of view, human history may be understood as the history of individuals triumphing over obstacles, frustrations and setbacks. Remove these impediments - and the challenges they otherwise provide - and what is left? What then becomes of the motivation to strive and to excel?

I have identified a problem that is likely to emerge in generalizing ubiquitous computing to the ubiquitous satisfaction of many and perhaps all human needs and desires. What therefore is needed is, in my opinion, the wise provisioning of ubiquity. This is in effect a **Wisdom Ubiquity** which speaks - not of the ubiquitous provision of wisdom, though that would be very nice - but of accommodating an appropriate level of human satisfaction within a framework of parameters of acceptable environmental, fiscal, physical, emotional and psychological costs. Wisdom ubiquity therefore entails what is traditionally considered to be good husbandry: the economic and effective deployment of a minimal level of resources. This needs to be done in a sustainable manner, and in ways that satisfy our profound and ever-present need for meaning, significance and enlightenment.

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