SPIMES AND SPECULATIVE DESIGN: SUSTAINABLE PRODUCT FUTURES TODAY

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COMMERCIAL PRODUCT DESIGN BACKGROUND

SIGG
DEEP HYDRATION

THE Deco Echo™
by Tivoli Audio

balance your living space with equilibrium
multi-purpose shelving from MAGIS

EDF ENERGY
project green house 2020
CROSS-DISCIPLINARY RESEARCH

COMPUTING

UBIQUITOUS COMPUTING
PHYSICAL COMPUTING
INTERNET OF THINGS

“SUSTAINABLE PRODUCT DESIGN-INNOVATION”

DESIGN

PRODUCT DESIGN
INTERACTION DESIGN
SPECULATIVE DESIGN
E-WASTE IN THE UK

ON AVERAGE, EACH PERSON IN THE UK BUYS 3 NEW ELECTRONIC DEVICES PER YEAR

AROUND 170 MILLION DEVICES ARE PURCHASED IN THE UK ANNUALLY

E-WASTE IS A COMPLEX MIX OF MATERIALS. MANY ARE VALUABLE & CAN BE HARVESTED FOR NEW APPLICATIONS. E.G. AN IRON CAN CONTAIN ENOUGH METAL TO PRODUCE 13 STEEL CANS

SMART PHONES AND GAMES CONSOLES HAVE GOLD, PLATINUM & PALLADIUM COMPONENTRY ALONGSIDE OTHER RECYCLABLE MATERIALS

ONLY 30% OF THOSE DEVICES ARE CURRENTLY RECYCLED - 70% ARE SENT TO LANDFILL IN THE UK OR ABROAD

HAZARDOUS MATERIALS LIKE ARSENIC, CADMIUM & MERCURY ARE ALSO ABUNDANT AT LANDFILL. SUCH SUBSTANCES CAN CONTAMINATE SOIL & WATER SUPPLIES ENDANCING WILDLIFE & EVEN HUMAN HEALTH

OVER HALF OF ITEMS SENT TO LANDFILL ARE STILL WORKING OR COULD BE EASILY REPAIRED

MOORE’S LAW & UBIQUITOUS COMPUTING

1. The accelerating pace of change...
   - Agricultural Revolution: 8,000 years
   - Industrial Revolution: 129 years
   - Light bulb: 90 years
   - Moon landing: 22 years
   - World Wide Web: 19 years
   - Human genome sequenced

2. ...and exponential growth in computing power...
   - Computer technology, shown here climbing dramatically by powers of 10, is now progressing more each hour than it did in its entire first 90 years

3. ...will lead to the Singularity
   - Apple II
   - UNIVAC 1
   - Colossus
   - Analytical engine

COMPUTER RANKINGS

- By calculations per second per $1,000
- Holsten Tabulator
- IBM Tabulator
- National Ellis 3000
- Zuse 3
- ENIAC
- Whirlwind
- DEC PDP-4
- IBM 1130
- UNIVAC 1
- IBM SSEC
- EDVAC
- Bell 103
- DEC PDP-10
- IBM 1620
- Data General Nova
- IntelleX
- IBM PC
- Pentium II PC
- Apple Power Mac G4

- Supersedes brainpower of human in 2023
- Supersedes brainpower of mouse in 2015

https://humanswlord.files.wordpress.com/2014/01/moores-law-graph.gif.png
GROWING ISSUES ON A GLOBAL SCALE
THE RHETORIC OF THE IOT

“A TRANSFORMATIVE DEVELOPMENT [WITH] THE POTENTIAL TO HAVE A GREATER IMPACT ON SOCIETY THAN THE FIRST DIGITAL REVOLUTION”

THE UK GOVERNMENT’S BLACKETT REVIEW (2014)
THE ‘SMART AGENDA’

- ‘SMART OBJECTS’
- ‘INTELLIGENT OBJECTS’
- ‘ENCHANTED OBJECTS’
- ‘HYPERLINKED OBJECTS’
THE MATERIALITY OF THE IOT

- 'DEMATERIALISATION'?

- 'DIGITISATION'?

APPLE IPHONE 6 -

"SALES OF 74.5 MILLION HANDSETS IN THREE MONTHS RESULTED IN THE BIGGEST QUARTERLY PROFIT EVER MADE BY A PUBLIC COMPANY"

(BBC, 2015)
CAN WE SCAN? ANTICIPATE? EVEN PREVENT UNSUSTAINABLE FUTURES?

...RATHER THAN DEAL WITH UNFORESEEN CONSEQUENCES IN RETROSPECT?
SPIMES - A PREFERABLE FUTURE?

SHAPING THINGS

This book is about created objects and the environment, which is to say, it's a book about everything. Seen from sufficient distance, this is a small topic.

The ideal readers for this book are those ambitious young souls (of any age) who want to constructively intervene in the process of technosocial transformation. That is to say, this book is for designers and thinkers, engineers and scientists, entrepreneurs and financiers, and anyone else who might care to understand why things were once as they were, why things are as they are, and what things seem to be becoming.

by BRUCE STERLING
SO WHAT EXACTLY ARE SPIMES?

STERLING (2005) DESCRIBES SPIMES AS...

“MATERIAL INSTANTIATIONS OF AN IMMATERIAL SYSTEM... THEY ARE DESIGNED ON SCREENS, FABRICATED BY DIGITAL MEANS AND PRECISELY TRACKED THROUGH SPACE AND TIME THROUGHOUT THEIR EARTHY SOJOURN.”

“SPIMES ARE INFORMATION MELDED WITH SUSTAINABILITY... THEY HAVE THE CAPACITY TO CHANGE THE HUMAN RELATIONSHIP TO TIME & MATERIAL PROCESSES, BY MAKING THOSE PROCESSES BLATANT & ACHIEVABLE.”

“SPIME IS A SET OF RELATIONSHIPS FIRST AND ALWAYS, AND AN OBJECT NOW AND THEN”

TAYLOR & HARRISON (2008)...

“THE IMPORTANCE OF A SPIME IS NOT SO MUCH THE PHYSICAL MATERIAL OBJECT. IT IS THE PROVENANCE, HISTORY AND SUPPORT SYSTEM THAT IT CREATES.”
SPIMES AND THE KNOWN PRESENT

STAGE 1.
- YOU SEE SPIME BOTTLE OF WINE AS A 'DIGITAL INSTANTIATION' ON A WEBSITE.
- DIGITAL SPIME IS LINKED TO ITS 'MATERIAL INSTANTIATION' I.E. ENGINEERING TOLERANCES / MATERIAL SPECS.

STAGE 2.
- YOU PURCHASE ONE BOTTLE ONLINE.
- TRANSACTION RESULTS IN THE MANUFACTURE OF ITS PHYSICAL, 'MATERIAL INSTANTIATION'.
- SPIME DETAILS AUTO ADDED TO YOUR PERSONAL SPIME MANAGEMENT INVENTORY SYSTEM.
- YOU CAN NOW MANAGE YOUR SPIME THROUGHOUT ITS LIFESPAN.

STAGE 3.
- YOUR BOTTLE IS DELIVERED TO YOUR ADDRESS.
- IT IS LOCATION-AWARE, ENVIRONMENT SENSING, SELF-DOCUMENTING AND GEOGRAPHICALLY TRACKABLE
- A MATERIAL OBJECT THAT IS 'INFORMATION RICH' AND WHICH CONTINUALLY STORES AND TRANSMITS DIGITAL DATA ABOUT ITS ENVIRONMENT AND ITS LIFECYCLE.

STAGE 4.
- YOU FINISH THE BOTTLE
- THIS ITERATION OF YOUR SPIME HAS NOW REACHED THE END OF ITS USEFUL, MATERIAL LIFE
- YOU DISPOSE OF THE BOTTLE - IT IS DEACTIVATED, DISASSEMBLED AND, RECYCLED BACK INTO THE MANUFACTURING STREAM FOR FUTURE SPIME OBJECT.
- THE DATA IT GENERATED DURING ITS LIFESPAN IS SAVED AND REMAINS AVAILABLE ONLINE FOR HISTORICAL ANALYSIS BY YOU AND ANY OTHER INTERESTED PARTIES.
SPIMES ARE NOT THINGS

1) ARTEFACTS - HAND MADE FARMERS TOOLS

2) MACHINES - EARLY AUTOMATED OBJECTS

3) PRODUCTS - MASS-PRODUCED CONSUMABLES

4) GIZMOS - UNSUSTAINABLE CONNECTED DEVICES
WE ARE STILL DESIGNING PRODUCTS IN THIS SPACE!

5) SPIMES - SUSTAINABLE TECHNOLOGICAL PRODUCT FUTURES
SEVEN CLASSIFYING DESIGN CRITERIA FOR SPIMES

1) CONTEXT

2) TECHNOLOGY

3) SUSTAINABILITY

4) TEMPORALITY

5) METAHISTORY

6) SYNCHRONCITY

7) WRANGLING
SPIMES AS A LENS FOR SPECULATION & REFLECTION

THE TOASTER FOR LIFE SEeks TO EMBODY THE THREE SPIME DESIGN CRITERIA IN ORDER TO HELP BROAD AUDIENCES - NOT JUST ACADEMIC OR DESIGN LITERATE AUDIENCES - IN CONSIDERING THE UNSUSTAINABLE PEOPLE-PRODUCT RELATIONSHIPS WHICH DEFINE PRESENT DAY BEHAVIOUR, AND ALSO AID THE AUTHOR IN REFLECTING UPON THE SPECULATIVE DESIGN PROCESS ITSELF.
WHAT IS DESIGN FICTION?

- NOT CONCERNED WITH FINISHED PRODUCTS OR ‘SOLUTION PRODUCTS’
- FREE OF NORMATIVE CONSTRAINTS
- “DIEGETIC PROTOTYPES” USED TO OPEN UP DISCURSIVE SPACE I.E. DEBATE/DIALOGUE ABOUT POTENTIAL PRODUCT/SERVICE FUTURES
- AND RELATIONSHIP OF POTENTIAL FUTURES TO CURRENT STATUS QUO - THE PRESENT
- DIEGESIS = USE OF NARRATIVE / STORYWORLDS / WORLD-BUILDING
- NOT SCI-FI, FANTASTICAL, LONG-TERM FUTURES
- PROTOTYPES FRAMED IN THE MUNDANE, EVERYDAY, NEAR FUTURES
A toaster for life is...

- repairable
- upgradeable
- customisable
- trackable
- recyclable
SPIME CRITERIA - TECHNOLOGY & SUSTAINABILITY

I) RFID TAGS - SMALL, INEXPENSIVE MEANS OF REMOTELY AND UNIQUELY IDENTIFYING A SPIME OBJECT OVER SHORT RANGES.

II) GPS - A MECHANISM TO PRECISELY LOCATE A SPIME OBJECT ON EARTH.

III) INTERNET SEARCH ENGINE - SEARCH FUNCTIONALITY AFFORDING A FRONT END TO MINE THE ENORMOUS AMOUNTS OF DATA THAT A SPIME OBJECT IS CONSTANTLY COLLECTING AND TRANSMITTING.

IV) CAD SOFTWARE - TOOLS TO DIGITALLY CONSTRUCT AND MANIPULATE ENDLESS ITERATIONS OF A SPIME OBJECT.

V) 3D PRINTERS - SOPHISTICATED, AUTOMATED AND ROBUST MEANS TO RAPIDLY FABRICATE A 'DIGITAL INSTANTIATION' OF A SPIME OBJECT INTO A 'MATERIAL INSTANTIATION'.

VI) ECO-MATERIALS - MATERIALS WHICH ARE ECOLOGICALLY SAFE AND DURABLE BUT ALSO HIGHLY VERSATILE. WHEN A SPIME OBJECT IS NO LONGER REQUIRED, THEY CAN BE CHEAPLY RETURNED INTO THE PRODUCTION PROCESS AS A RAW MATERIAL FOR FUTURE SPIME OBJECTS.
SPIME CRITERIA - TEMPORALITY

'TIMELESS'?  'ATEMPORAL'?
- Viewed simply, Sterling’s concept of spimes are a class of near future, sustainable, manufactured objects designed to make implicit the impacts of a technological product’s entire lifestyle more explicit to products potential users.

- This paper argues that when properly understood, spimes act as a rhetorical device that can be used as a lens through which designers can speculate and reflect upon sustainable technological product futures whilst also critiquing the unsustainable production and consumption practices that define our current life styles.

- Furthermore, I argue that spime-based design fictions can also be used to help broad audiences consider the unsustainable people-product relationships that define present day behaviour.

Grazie!