

## Bespoke Appliances for the Digital Home

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*Acknowledgment - Jeannette Chin*

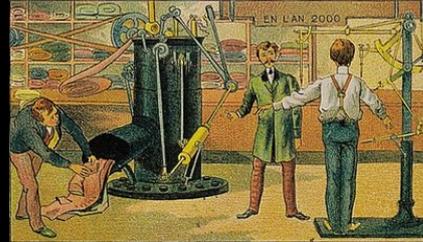
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## Introduction

Three Concepts with the consumer at the center

- MApps Concept Overview
- CEA Overview
- iSpace Overview



- Example Implementation

– *Decorating your digital home or has your toaster become Big Brother?*

## Deconstruction



<http://www.billychasen.com/>

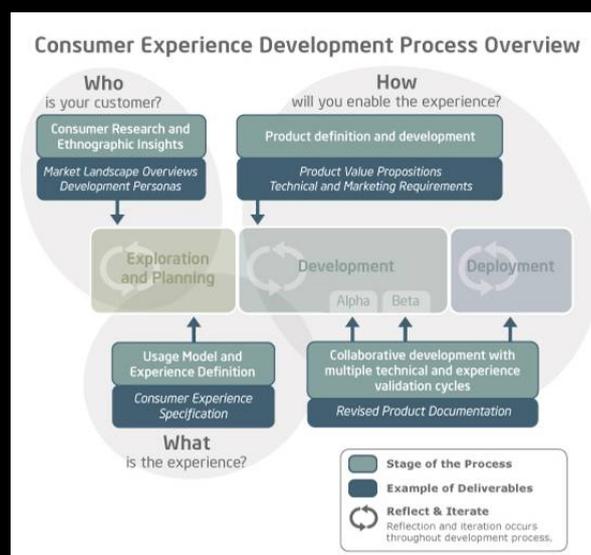
- Networks facilitate deconstruction of appliances into elemental services.
- Network services can be reconstructed to form the same or novel appliances – soft-appliances or virtual appliances or, as we call them Meta-Apliances (MAps)
- Maps are a topology description and behavior rules

## MAPs Concept Overview

MAPs (meta -appliances and applications), 'soft objects' that provide a means to aggregate elemental network services together to create virtualized forms of regular and user created appliances

- TV MAP could consist of a "display", "audio", "media stream" and "control" service. (alternatives to appliances or extracted from networked connections sent to appliances). MAPs also contain rules that determine how the services coordinate actions to provide the behaviour of the virtual appliance
- MAPs could be created and traded by new appliance manufacturers or end users - "Do-it-Yourself" (DIY).

## CEA Overview



# User engagement in the Design Process: the University of Essex iSpace



Suburb Coverage (5km radius)

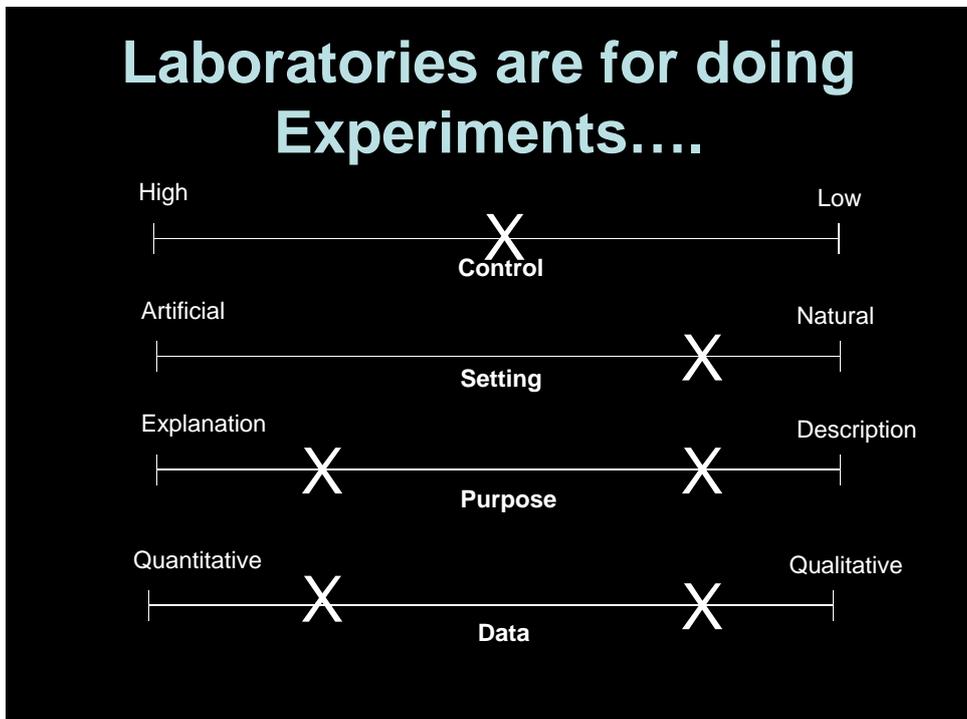







Removable access panels to wall and ceiling voids (with extensive networking and power distribution within voids and throughout apartment)

Focus on the engineering, social and environmental aspects of renewable Energy.



## But experiments are....

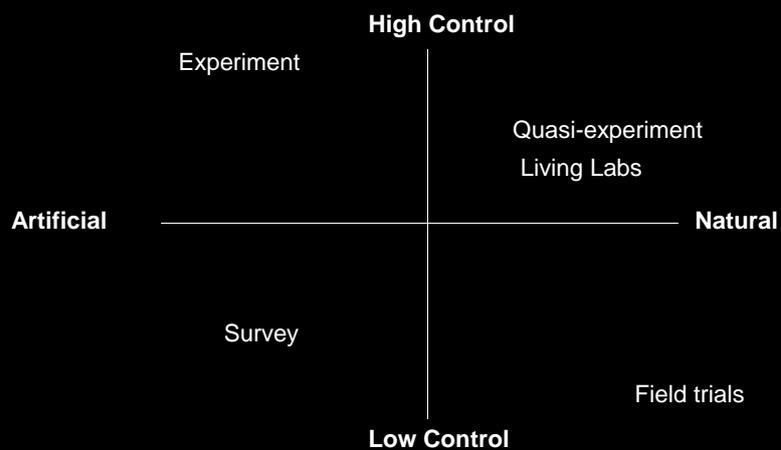
- High on internal validity
- But lower on external validity (ecological validity)

And

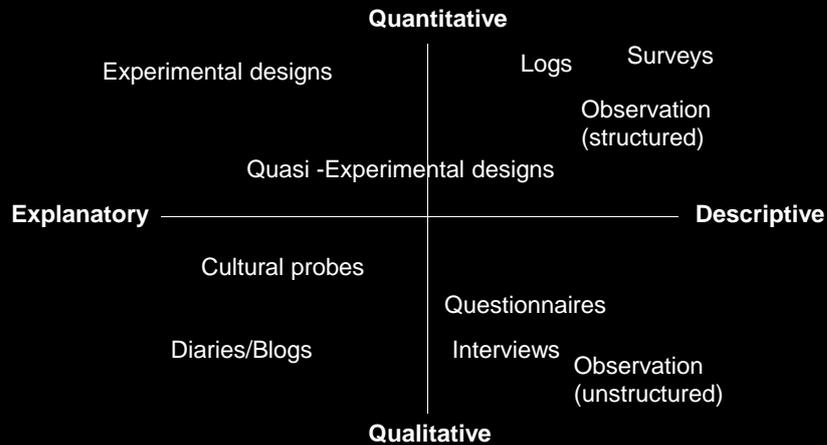
- Living labs are high on external validity but lower on internal validity

Thus greater risk of making Type I errors (false positives) with Lab experiments and Type II errors (false negatives) with Living Labs investigations.

## Positioning methods....



## Positioning tools & techniques.....



## Multi-methods are critical in the living lab for....

- Reducing Type II errors (high intercorrelations between measures of the same 'thing')
- Providing Multiple perspectives/views (multi actors; different theories etc)
- Describing and explaining (both are essential)

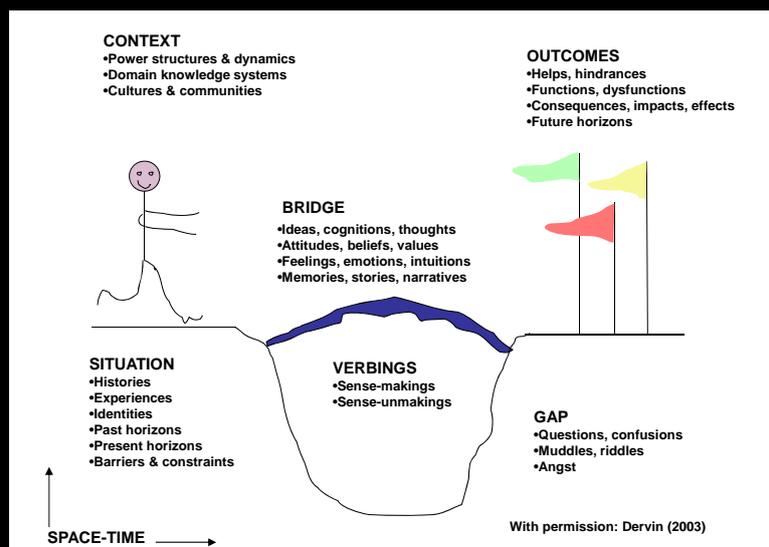
But are restricted by;

- small sample sizes (generalisable?)
- problems in recruiting subjects
- moral and ethical issues (invasion of privacy?)

## Which approach to data collection?

- **Ethnography**
  - Living with the participant is intrusive
  - Interpreted through researcher
- **Monitoring/Observation**
  - Video – significant analysis task
  - Interpreted through researcher
- **Interview**
  - Agenda implicitly or explicitly driven by researcher
- **Dervin's Sense-Making**
  - Participant driven structured reflections
  - Concerned with external circumstances and internal sense-making process

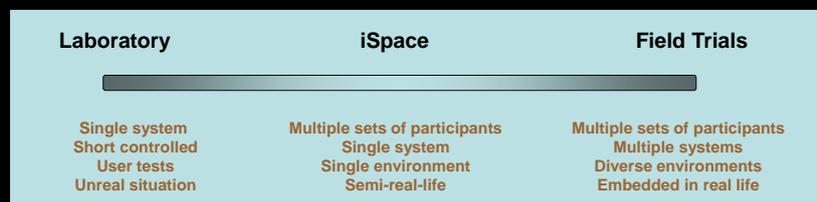
## The Sense-Making Metaphor





## Living Labs

- Living Labs are a compromise; by using tools and techniques from both the experimental and ethnographic traditions they can:
  - provide more control in natural settings
  - explain and describe
  - offer a richer, more complete and valid picture
  - be cheaper than running field trials



## Example Implementation

*Research and investigation has identified a key barrier and problem with consumer's mental model of MAPs.*

*Decorating your digital home?*

*or*

*Has your toaster become Big Brother?*

## Example Implementation

### 1. Making your Home Safer

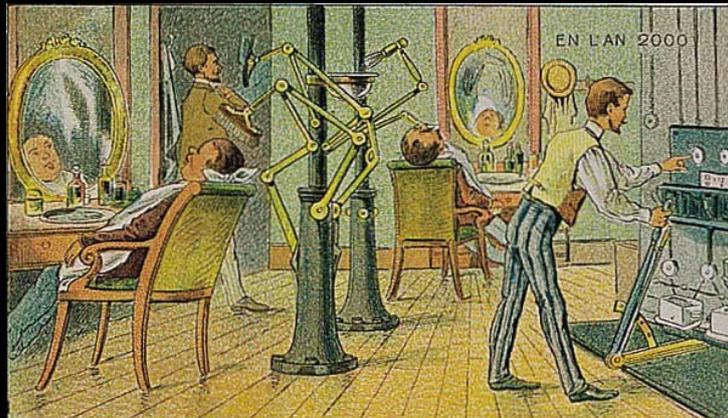
*Expanding the current model of home security, a range of “security” or “safety” MApps could be presented as an extension of a home monitoring system.*

### 2. Greening your Home

*Social consciousness coupled with the fierce personal customization of MApps could position technology as a way to not only save money but also to do the right thing for the planet.*

### 3. Customize your digital home like your email

*MApps could provide a mechanism that allows consumers to personalize the functionality of their digital homes in the same way they personalize their online lives.*



Questions