

MDDN 381

Independent Research Topic Bink Documentation

Joel Edwards | 19 June 14



The original Bink concept and prototype was created as a home automation experiment in one of my MDDN 251 projects. The result was a physical device which you plug a sensor of some kind into the input, and an output device on the other side, and are able to configure remotely over the internet to trigger an output action when the sensor's threshold is met. Along with the Bink hardware prototype, we created an app, which gave users the ability to configure their Bink over the internet.

One thing Bink did well was giving the ability to almost any appliance or "Thing" in your home to be controlled remotely regardless of whether it had built-in Wi-Fi or remote automation capabilities through its existing interfaces.

However, in the year since the original concept was created, more and more manufacturers are creating and commercialising appliances targeted at home owners that have these capabilities built in. This lead to the need for an app that could control both the Bink device and any other thing in the home that is Internet connected.

In this Independent Research Topic I investigated and then designed a visual interface to allow interaction between an individual and their Internet of Things. The production focus for the research was to produce a smart, innovative, intuitive interface design. On the following pages are the screens designed for this purpose and a brief explanation of each one.

You can also view these designs in an interactive way on InVision here: <http://invis.io/JRYAPLU9>

Or watch a video demonstration of the app design here: <http://youtu.be/4EtsFloIM0c>



Rendering of Bink base station



Original Bink configuration app screenshots

Initial loading screen >

Simple animated loading screen that animates until the app has loaded, then automatically transitions to the next screen. App will load instantly if it is minimised, loading screen only shown if app is shutdown or opened for the first time.



Property and room set up >

Choose an appropriate name for your property and the first room you are setting up.



Pair Bink room sensor >

Each room in the house that you want to monitor requires a Bink room sensor. This device looks a bit like a home security system motion sensor. It would have the following features:

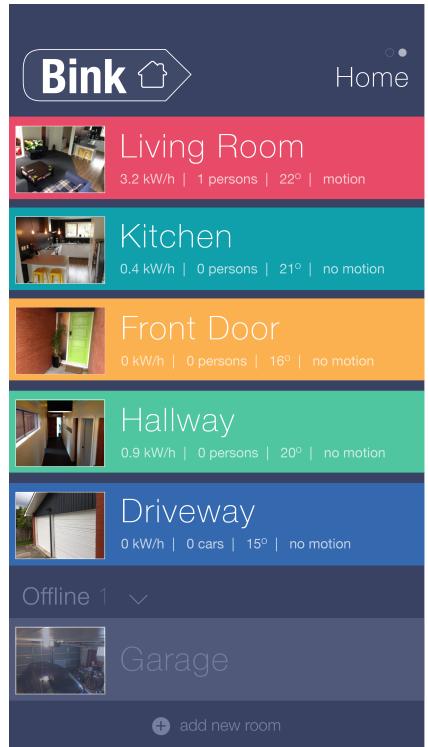
- Temperature sensor
- Humidity sensor
- HD webcam – for live webcam link and motion sensing
- Bluetooth – for mesh link to Bink base station and proximity pairing

Holding the room sensor next to the iPhone with Bluetooth turned on transfers the sensor's ID and other details to link the sensor to the room you just created.



Property page >

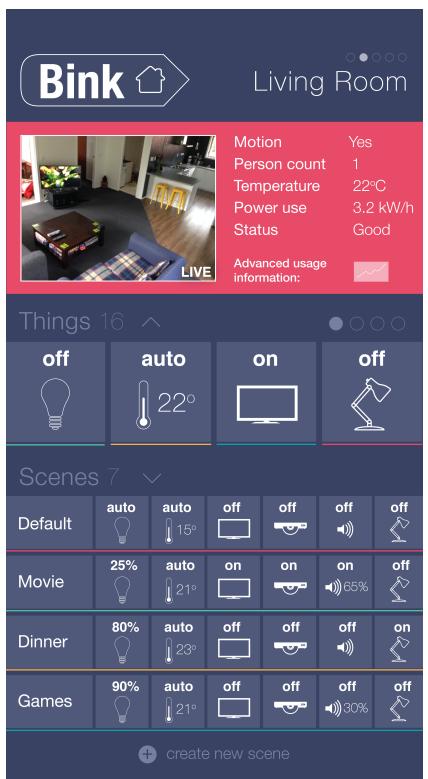
Overview of the rooms in your house with a webcam thumbnail, various stats about each room and the ability to add new rooms when necessary.



Property page >

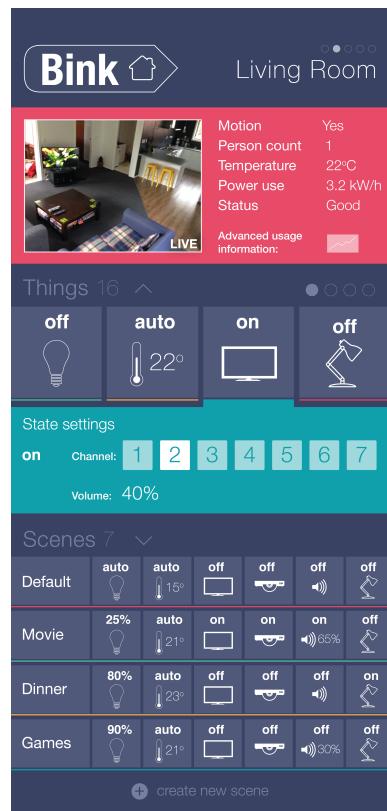
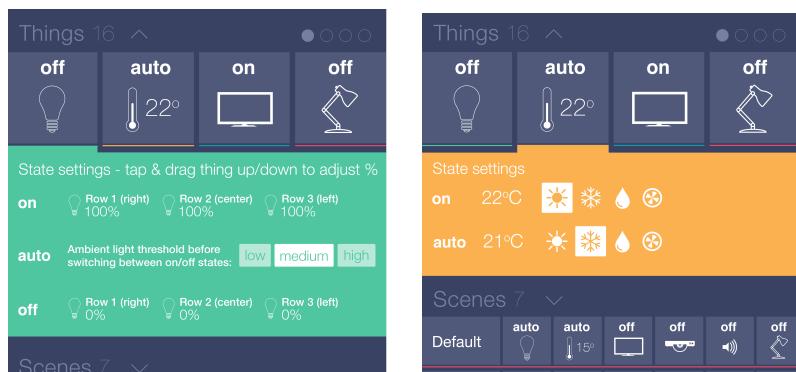
Overview of the current state if a room (the Living Room in this example), live webcam link, various stats about the room, link to advance usage statistics, list of controllable Things, and any Scenes that you have created for the room.

Scenes are a set of common configurations for 2 or more things. You simply click a scene to reset the room to that configuration.



Thing States V >

A State is exactly that - a state, such as on, off, auto, heat, or cool. Each Thing can have one or more States. Tapping a Thing manually switches to the next State of that Thing. Clicking and holding a Thing opens the State setting panel for that Thing, as shown below.



Power Consumption page >

Overview of the power usage of a particular room. Shown as power usage of the whole room and broken down into power usage by groups of Things – heating and cooling, small appliances etc. Usage is displayed in a line graph in real time and can also be changed to a pie graph to see the usage of that group of Things versus other groups of Things in the same room.

This capability would require special home wiring or individual devices clamped on to the power cables of devices that you wanted to track (prototype created for original Bink project proved this was possible and economical).

Inputting of your power company's rates would also allow you to see exactly how much you are paying which could be a bigger incentive for users to change their habits.





Future Improvements & Plans

The future of the Bink app and hardware components, as well as home automation in general is bright. People are becoming more and more comfortable with Internet connected appliances, their desire to simplify but retain complete control of the Things in their life is growing, and their expectations of these Things is advancing.

The Bink prototypes – designs, apps, hardware prototypes, concepts, and server configurations, have proven that the original idea of a remotely configurable and monitorable is plausible. In recent news, companies such as Apple and Google have announced that they are about to release apps and supportive ecosystems that do similar things to Bink.

What would need to happen to make Bink reality?

- Further development and commercialisation of the Bink room sensor, base station and power consumption monitor
- Coding and integration of the Bink app with the Bink base station
- Approval to have apps published in Apple Store and Google Play
- Partnership and integration with home appliance manufacturer's Things
- Venture capital funding
- A team of skilled people in areas of: industrial design, computer science, engineering, design, marketing, business, and information systems