



## PRODUCT DESIGN EXERCISE

# GOOGLE ADS FOR BILLBOARDS

Photo: still from *Blade Runner*

### BUSINESS GOALS

Outdoor ads are a multibillion dollar market globally, and the medium is evolving quickly as static billboards are replaced by dynamic, internet-connected displays. Google, of course, has the world's leading internet ad platform, so digital billboard advertising would be a natural complement to its existing businesses.

The “out-of-home” ad market (as the outdoor display ad market is called) is not a huge one by Google's standards, but it does offer Google a meaningful growth opportunity.

### MARKET NEED

The increasing quality and falling prices of large, high-quality electronic displays has led to a quickly growing market for digital out-of-home advertising. This allows for new possibilities, such as costless ad-switching, rotating ads to show a single viewer multiple ads, targeting particular times of day (e.g. lunchtime), targeting an ads to a particular date (for an event, perhaps), and more.

Many companies have begun to address this market, but the market is fragmented. Advertisers would benefit from an advanced platform with a worldwide reach. Billboard owners would benefit from the deep pool advertisers that a large marketplace would offer, as well as avoiding the cost of building their own advertiser portals.

## **USER PERSONAS**

### **Media Buyer**

Ad placements are often purchased by a specialized media buyer, who might be employed by a large company's marketing department, a member of an agency, or a freelance marketer. A media buyer can be expected to spend a significant amount of time using advanced ad platforms. These users will tolerate a steeper learning curve than the typical consumer app if complexity brings more power and speed.

### **Small Business Owner or Manager**

On the other hand, our user might be a business owner or manager who does not specialize in marketing or media buying. For instance, a car dealer's general manager might wish to use outdoor advertising to drive awareness of the dealership's brand. These users might have a local or neighborhood scale, and so they might be more likely to want to target specific billboards and neighborhoods with their out-of-home advertising.

Small-business-based users may use online ad-buying platforms only occasionally, so our application will need to be usable by occasional and novice users without difficulty.

## **PREPARING MY SOLUTION**

I considered the following ideas:

- Workflow to submit ads for approval by Google and the ad owner
- Use HTML5 to create video ads and looping animations (where permitted by local ordinance)
- Billboard targeting using Google Maps
- Billboard previews using Google Street View
- Target times of day using a "day parts" rubric (e.g. PM Commute, Evening, Overnight...)
- Ad layout composer that programatically analyzes your ad's legibility and suggests improvements

- Billboard quality scoring based on multiple metrics: impressions, duration the ad is visible per viewer, distance to typical viewers
- Tools to create dynamic messages using weather data, countdowns, or news headlines (these are not unique ideas, but the idea would be to create useful tools for constructing ads with these dynamic elements).

I elected to focus on the small-business persona and explore ways that Google could leverage its Maps and Street View products to let users consider individual billboards for their campaigns. I left out concepts of ad approval, billboard quality scoring, video/animation, and dynamic message management.

For a local or regional business, there may be no algorithmic substitute for actually examining the inventory of billboards and choosing the right spots based on a deep local understanding for the market. For instance, a buyer may intuitively know where the best spots are to advertise to large volumes of slow traffic during rush hour. He or she also might wish to refer to nearby landmarks or highway exits in ads. Finally, she may want to avoid advertising near disreputable businesses.

## **Research**

I did some online research about the digital billboard market in order to gain background knowledge about the industry and understand some of common metrics, but avoided pages that might reveal any sort of UI in order to not bias myself towards a particular solution. I also briefly familiarized myself with Google Ads and other ad platforms to better understand ad-targeting concepts.

## **ABOUT MY SOLUTION**

I didn't wish to re-invent the wheel with regard to the basic, well-established UI patterns of ad platforms, so the basic structure of my solution is similar to existing products.

If this were a real product, it would probably be closely integrated with Google's ad platform. Nevertheless, for the purposes of this project, I have designed it as a separate application, both due to time constraints and for a cleaner presentation of my solution.

That said, I did not spend a great deal of time working out the information architecture of the app, as I was more focused on the new-campaign workflow where the user designs an ad and then searches through an inventory of billboards.

Finally, I apologize that my wireframes are in sort of an unfinished state, as I moved on to the high-fidelity mockups once I settled on the main ideas due to time constraints.

### **Notes on Visual Design**

A real Google billboard product would presumably adhere closely to the Google Ads design system. However, I deviated from the Google Ads visual style in order to give you a better sense of my design sensibility. I did try to give the product a Material Design-inspired identity, so hopefully it still looks like a plausible Google product.

### **LINKS**

[Wireframe \(PDF\)](#)

High Fidelity Mocks ([Figma](#), [PDF](#))