**MAPLARGE**
we bring DATA to life

Hosting Platform & API - Interactive Charts, Maps and
Dashboards for ESRI, ArcGIS, Bing Maps, Google Maps, and
Open Layers

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# The Four Biggest Mapping Mistakes

PDF Version

## 1. Slow to Load, Slow to Update

### Server Configuration Problems

Online maps can take a significant amount of time to
load and update. Why? Usually there are multiple
servers involved

- A server for the base maps
- A GIS server for the geospatial queries
- A web server and database to serve
  the HTML requests.

If any one of these servers are not optimized for speed,
or have an inherent speed limitation then the whole
user experience will be degraded.

### Slow = Bad User Experience

Google and Microsoft have studied the effects of page
load times on users.[1] Even the the smallest delays can
affect user engagement with your site. Here are several
standards to observe from their research and other
design authorities.[2]

- **Delays under half a second impact business metrics**
- **0.1 second** (100 ms) or less is the ideal response time. Users won't sense
  any interruption.
- **1 second.** (1,000 ms) Highest acceptable response time, however you're
  already losing revenue at 500 ms.
- **10 seconds.** (10,000 ms) Unacceptable response time. The user
  experience is interrupted and the user is likely to leave the site or system.

The chart below displays the results from the Microsoft and Google study. It shows how a
delay of even a few milliseconds will decrease user queries, revenue, and satisfaction.

**Multiple Points of Failure**



**Delays Significantly Affect User Engagement**



| | Distinct Queries/User | Query Refinement | Revenue/User | Any Clicks | Satisfaction | Time to Click (increase in ms) |
|---|---|---|---|---|---|---|
| 50ms | - | - | - | - | - | - |
| 200ms | - | - | - | -0.3% | -0.4% | 500 |
| 500ms | - | -0.6% | -1.2% | -1.0% | -0.9% | 1200 |
| 1000ms | -0.7% | -0.9% | -2.8% | -1.9% | -1.6% | 1900 |
| 2000ms | -1.8% | -2.1% | -4.3% | -4.4% | -3.8% | 3100 |

**How many milliseconds does your map take to load and update?**

## 2. Limited Information on the Map

### Limited Map Info = Bad Analysis

If a user cannot visualize all of the data on the map at once, it is very hard to
perform analysis on the data.

### Users (Almost) Never View the Second Page of Results

Many maps limit the number of icons or information that can be displayed. They require users to query for additional information. We view this like being on the second page of the Google Search Engine Results.

**"90 percent of search engine users never venture beyond the first page of results"**
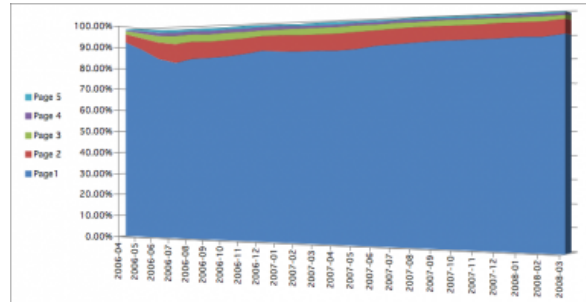


The graph shows the percentage of search engine users who click on each of the first five pages of search results.[3]

# 3. Bad Map Interface

## Target the # of Features to Your audience

Does your map have too many features for your target audience? We track detailed metrics from our mapping UI's and have found that most consumers interact with only one or two features per map. If you want to have advanced features, they should probably be in an "Advanced" menu, similar to Google.

**Keep Your Interface Clean for Consumers**
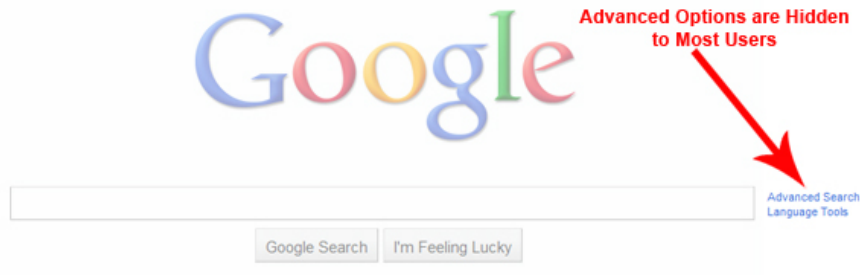


# 4. No User Engagement Opportunities

## Static Content = Less User Interactions

If you are currently providing maps as static images or maps without on-hover interaction, you are losing out on a significant amount of user engagement.

## On-Hover Mouseovers Provide the Most Engaging Browsing Experience

Interactive advertising research[4] has shown that content with on-hover / mouseover interactivity has much higher user engagement rates.

## Search Capabilities Provide Efficient Navigation to Advanced Users

What is the navigation efficiency of your current mapping system? If a user wants to visualize a segment of the data, how many steps are required to achieve this task? By improving the search capabilities of the map interface, users will increase their engagement because they have an efficient route to the information they are looking for.[5]

**Use On-Hover and Search to Increase User Engagement**

Footnotes:
1. Shurman, Eric, Brutlag, Jake (2009),"The User and Business Impact of Server Delays, Additional Bytes, and HTTP Chunking in Web Search."*O'Reilly Web Performance and Operations Conference.*
2. Nielsen, Jakob (1993),"Response Times: The 3 Important Limits."Usability Engineering.
3. Zwicky, Richard (2008), "Search Engine Referal Rates by Page in SERPS."
4. Rosenkrans,Ginger (2009),"The Creativeness and Effectiveness of Online Rich Media Advertising",*Journal of Interactive Advertising*, Vol 9 No 2, 18-31.
5. Wang, Yen (2007) "Web Structure Reorganization to Improve Web Navigation Efficiency." *11th Pacific-Asia Conference on Information Systems*, 411-422.