A Competitive Analysis of

OPEN WEB MAPPING TECHNOLOGIES

BACKGROUND

d3

Jump

Leaflet

Nokia

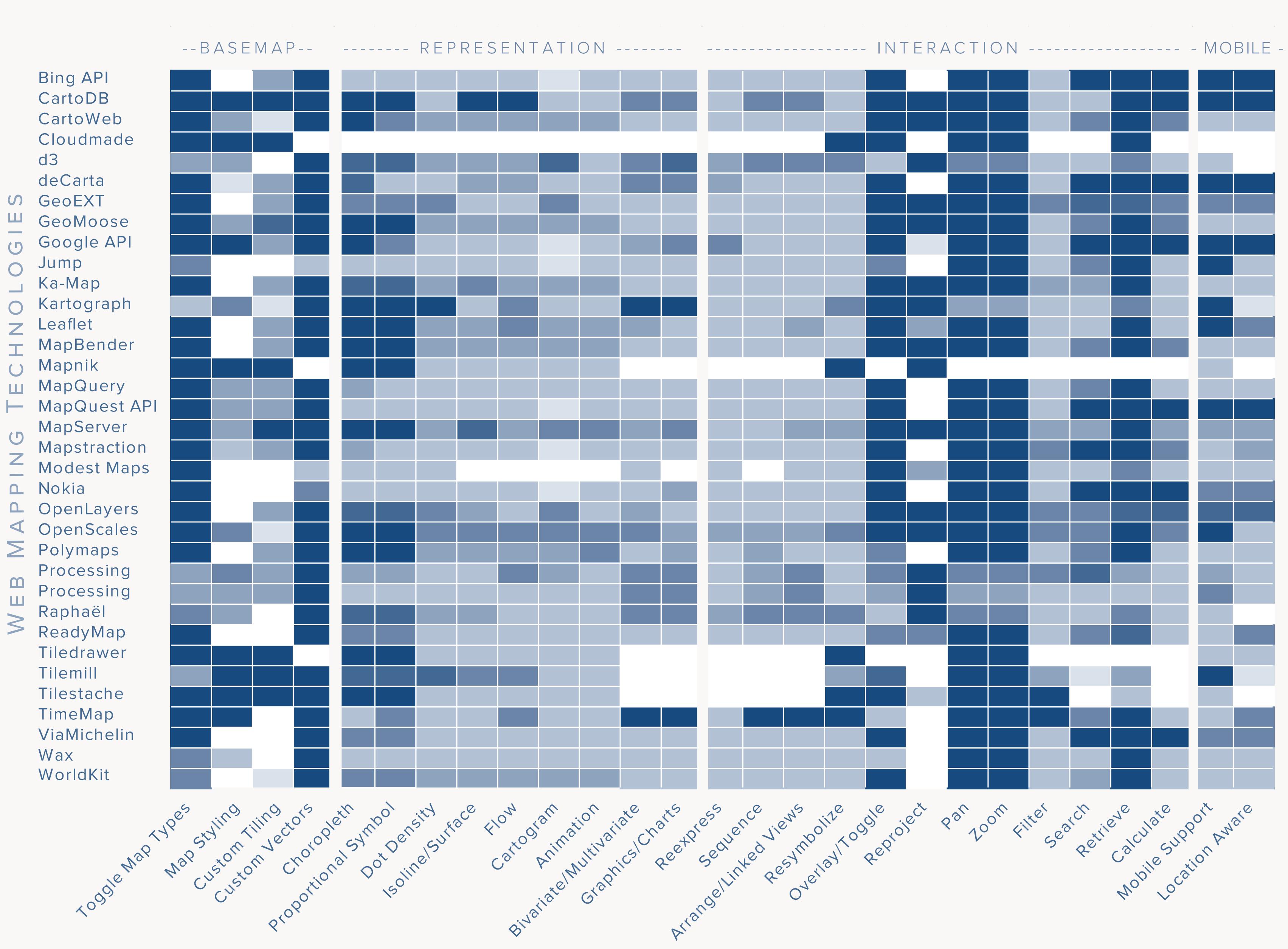
Wax

The technical practice of web mapping has recently shift away from the use of a single, proprietary technology towards decentralized, open solutions using web standards.

SNAPSHOT OF WEB MAPPING OPTIONS

This matrix is the result of a competitive analysis study of available open source mapping solutions completed by two independent coders in the summer of 2012.





FUNCTIONAL REQUIREMENTS

RESEARCH OBJECTIVES

This research intended to critically compare a suite of related mapping applications according to their relative merits. We wanted to:

- 1. IDENTIFY the variety of open web mapping technologies currently available
- 2. ORGANIZE them into a consistent and logical framework based on their intended purpose and structure
- 3. COMPARE them according to the *functionality* they support to recommend how to best to make use of them

METHODS

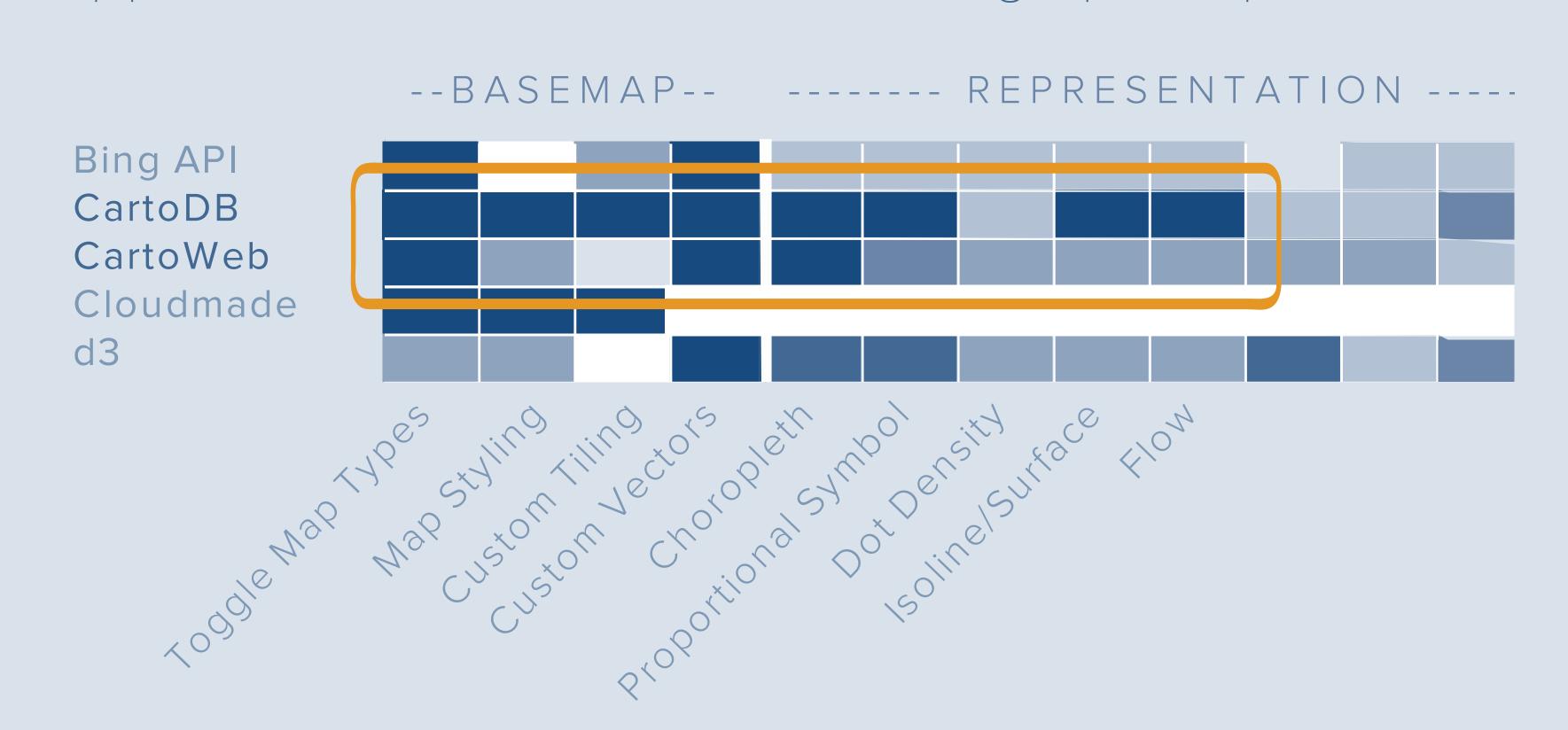
We used a competitive analysis study to produce results encoded within the matrix above.

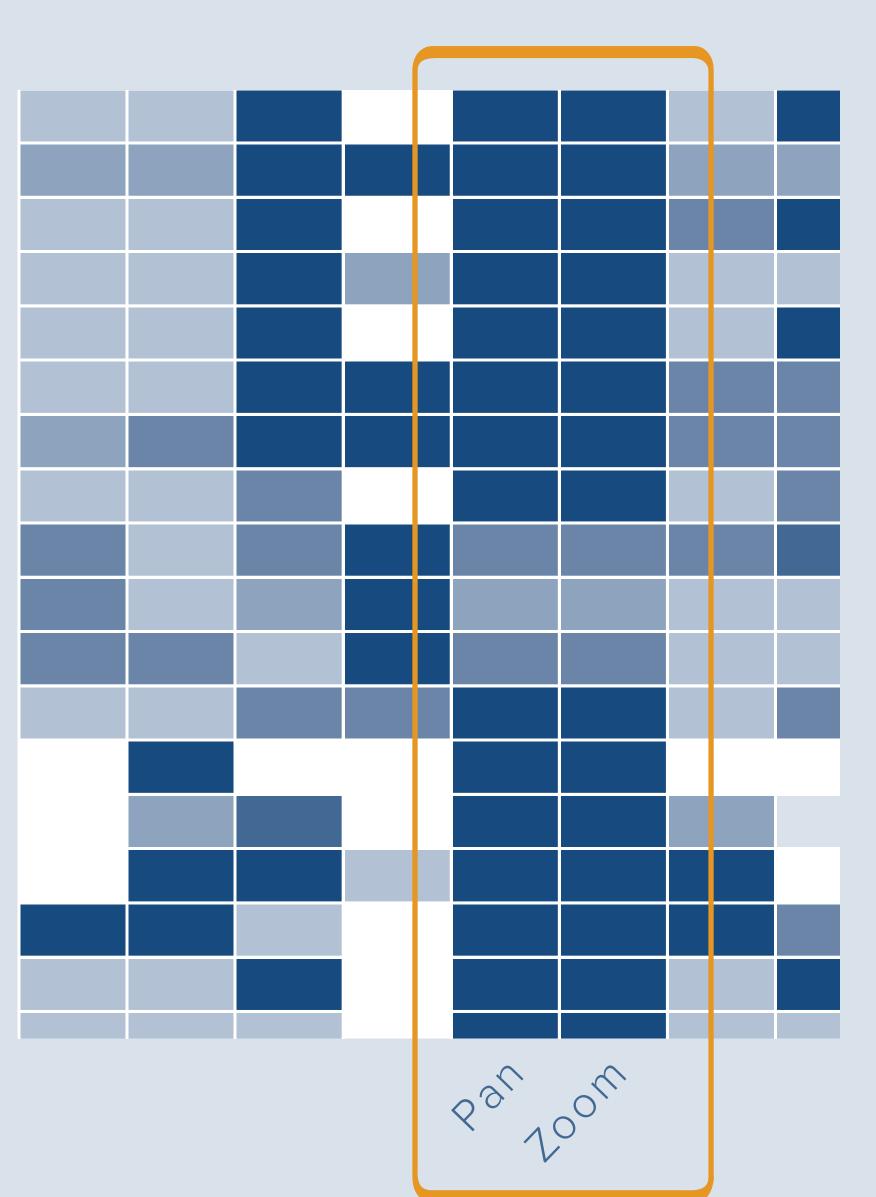
We accomplished this by:

- 1. GATHERING as many web mapping options as possible
- 2. EVALUATING each according to 27 functional requirements identified as relevant to web mapping and **ORGANIZE** results into categories of representation and interaction
- 3. Performing a CONTENT ANALYSIS using the twenty-seven part coding scheme by 2 independent coders and comparing results
- Each mapping solution was coded according to a four part scheme from *natively* supported to not possible.

INTERPRETING THE MATRIX

HORIZONTALLY, the matrix visualization reveals variation between specialist technologies designed to support a small set of functions and multi-purpose technologies that support numerous functions, although perhaps not as well.





technologies, such as:

VERTICALLY, the matrix visualization reveals widely supported features and functionality in contemporary web mapping technologies:

- imagery basemaps
- custom overlays/toggling
- panning/zooming
- advanced thematic
- representation cartographic interaction

We can also identify functionality with the greatest variation across

- basemap styling
- tile rendering dynamic reprojection
- Basemap styling and tile rendering can be explained by the inclusion of custom rendering services in the study. An overall lack of support for dynamic reprojection of maps can be explained by a widespread dependence upon tiled basemaps using cylindrical projections.

This analysis allows us to determine mapping solutions that support the graphic encoding of information and the ability for the user to manipulate the representation.

Results from this study contributed to:

- a subsequent survey of web mapping specialists
- the selection of 4 web mapping solutions for a diary/mapping study
- updated and informed curriculum for advanced cartography courses

