



UTAH AGRC
Automated Geographic Reference Center

GIS Thinking Beyond the Map



Matt Peters
Greg Bunce



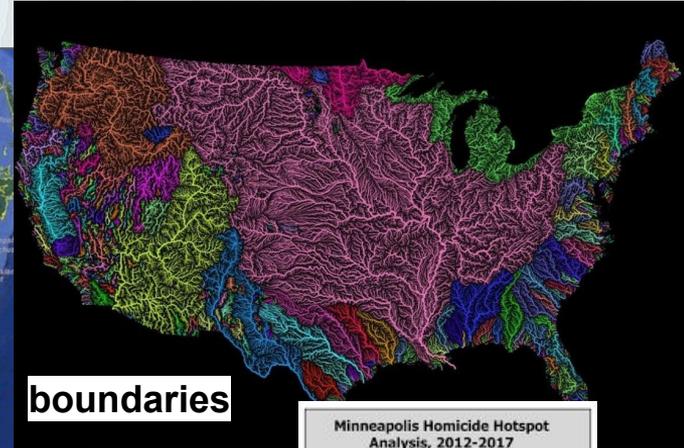
GIS: Thinking Beyond the Map



patterns



scale

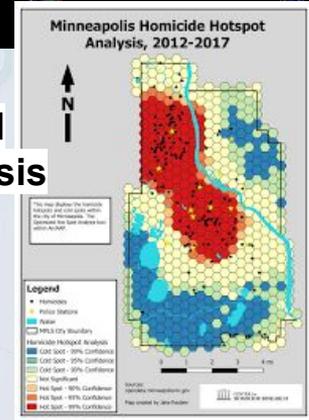


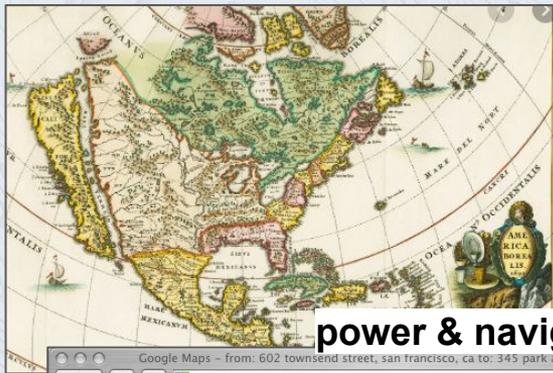
boundaries



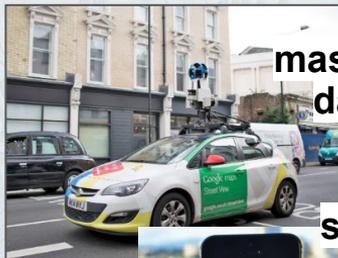
telling a narrative

visual analysis





power & navigation



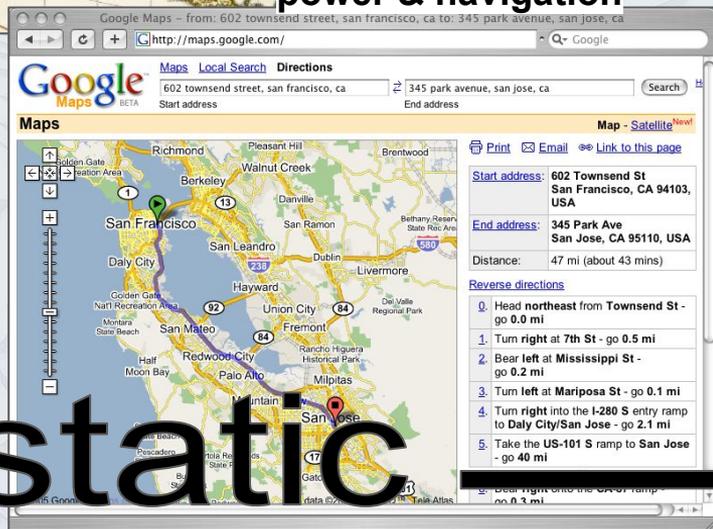
massive data collection

sensors



MACHINE LEARNING

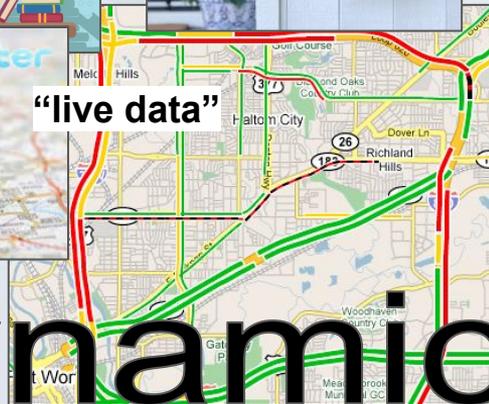
machine learning



crowdsourcing



"live data"



static

dynamic





“The world’s most valuable resource is no longer oil, but data”

The Economist (2017)

GIS: Thinking Beyond the Map



geospatial data



“95% of the consumers of whatever we create will not be GIS specialists”

Ed Parsons



Today, the use of geospatial information has expanded into almost every market and institution around the globe.



Geospatial data has become an integral element in how companies and organizations conduct business throughout the world.

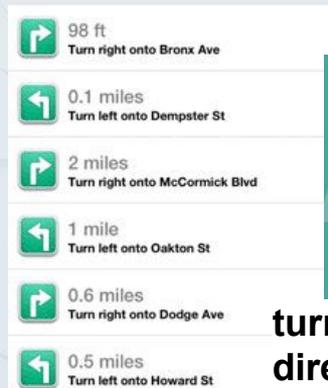




call routing



what's on my ballot?



turn-by-turn directions



online tax rates





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Alexa...



What's the weather today?

Where's my order?

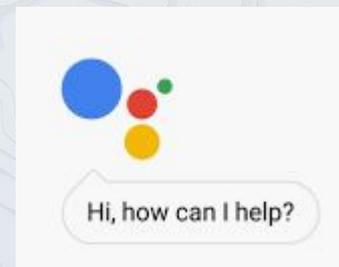
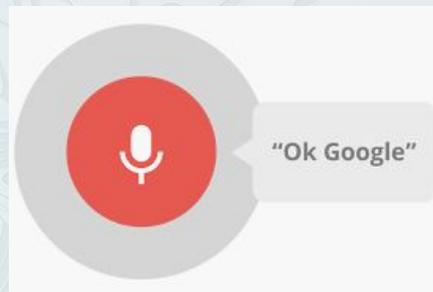
What's the air quality today?



real-time location

location-aware searches

contextual follow-up questions

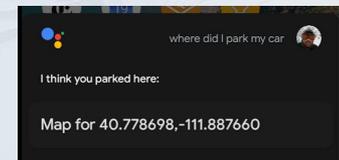


Okay, Google...

Where am I?

Where did I park my car?

Where is the closest transit stop?





more location-aware voice skills

current location
average commutes
jurisdiction boundaries
political boundaries
local services
voting information
crime data
demographics
health data
property data



“Am I in a safe area right now?”

“Describe the characteristics of current location?”

“When is the next election, and what’s on my ballot?”

“Do I have enough time to sip my coffee this morning, or do need to take it on the run?”

“What day is garbage pickup at my current location?”

“Are there any health concerns or outbreaks near me?”





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Artificial Intelligence and
Machine-Learning data

← ? →
super cool creepy

**“How should I prepare for
Max’s birthday party
tomorrow?”**

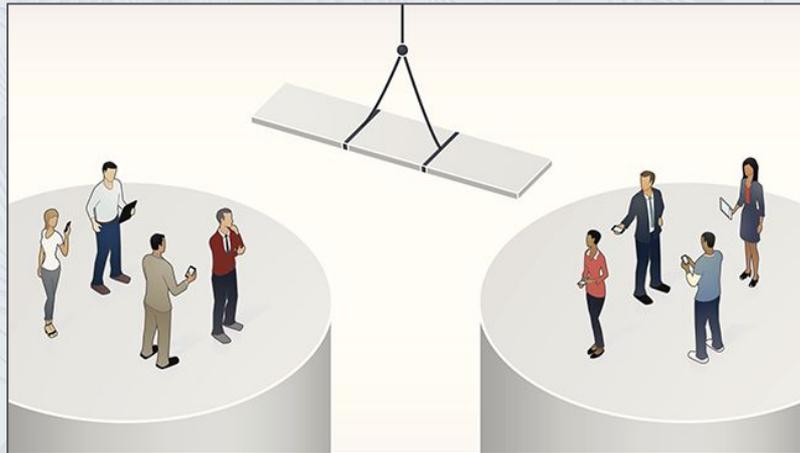
“Tomorrow at Sugarhouse Park it will be sunny in the afternoon, but there are plenty of shade trees and a pavilion. Expect rain in the morning so bring an umbrella, but there are also pavilions for shelter. The park has restrooms. There is also a half marathon scheduled, affecting that area, and it might affect your route.”

“How will you be commuting there?”





Bridging GIS and IT



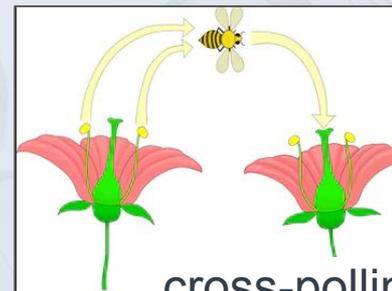
uniform web standards



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one cog in the
IT ecosystem

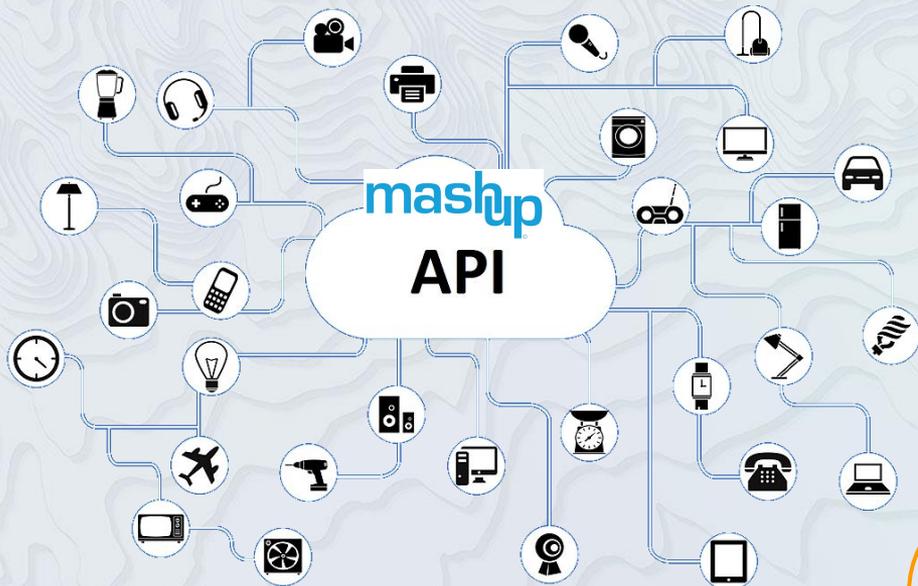


cross-pollination

cross-sector coordination



Application Programming Interfaces (APIs)



IT ecosystem

geospatial

Standardizing web services
and APIs



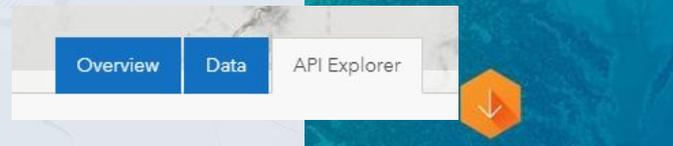
Open Data API Explorer



data accessibility

ArcGIS Open Data

Connecting Citizens and Businesses
to Your Authoritative Data





GIS: Thinking Beyond the Map

coordination and partnerships

How do we fit into the larger picture of shared resources and data?



cross-sector coordination
public-private partnerships
agency partnerships



free-ish



Sharing services and APIs



decentralized data



vulnerability of external dependencies



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