

# LEAN CIVIC TECH

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*@abhinemani | CAPP 30130 | University of Chicago*



## AGENDA

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- Case study: healthcare.gov
- Waterfall v Agile (Lean)
- Key takeaways from *The Lean Startup*
- Lean (civic tech) metrics
- Case study: LA's Dashboard
- Tools and resources to quickly launch a civic app

# CIVIC TECH: KEYS TO SUCCESS

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## *Empathy*

- Build with, not for
- Talk to users
- Understand behavior
- Learn what's out there

## *Lean*

- It's more than just a technical process
- Expect failure
- Only build what's necessary
- Test, test, test

## *Data*

- Data “lives” everywhere
- Be ready to scrape
- Open data is your friend
- ETLs are your best friend

## *Users*

- ~~If you build it they will come~~
- Listen and learn
- Define metrics
- Find partners

## *Sustainability*

- Consider your options: startup, open source, non-profit, academic, etc
- Tech -> Policy
- Expect to train everyone
- Document everything

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MARCH 10, 2014

Ukraine's Future / Minimum-Wage Wars / Wes Anderson

# TIME

## CODE RED

Inside the nightmare launch of HealthCare.gov  
and the team that figured out how to fix it

BY STEVEN BRILL



time.com

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“

The preferred method for implementing large technology projects in Washington is to write the plans up front, break them into increasingly detailed specifications, then build what the specifications call for. It's often called the waterfall method, because on a timeline the project cascades from planning, at the top left of the chart, down to implementation, on the bottom right.

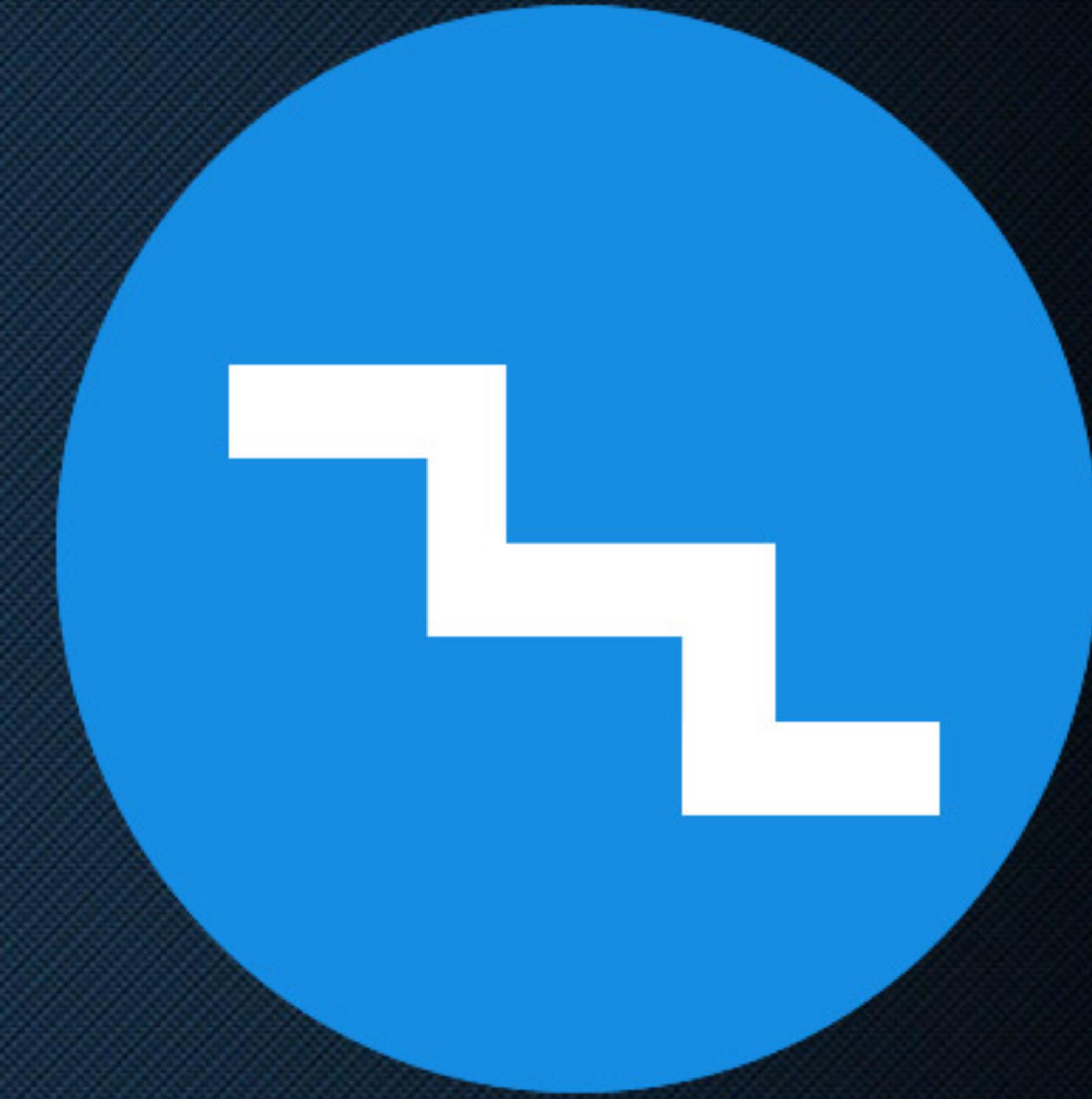
-Clay Shirky

# Software Development Methodologies



Agile

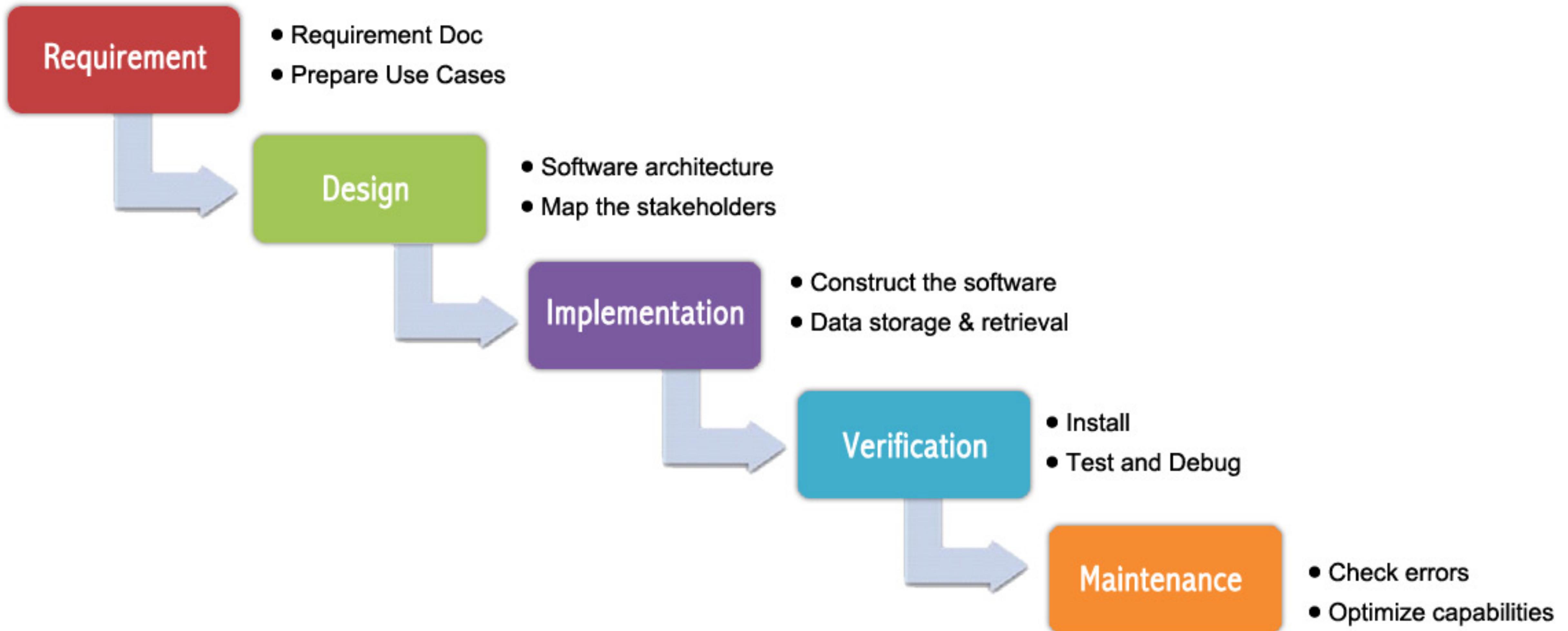
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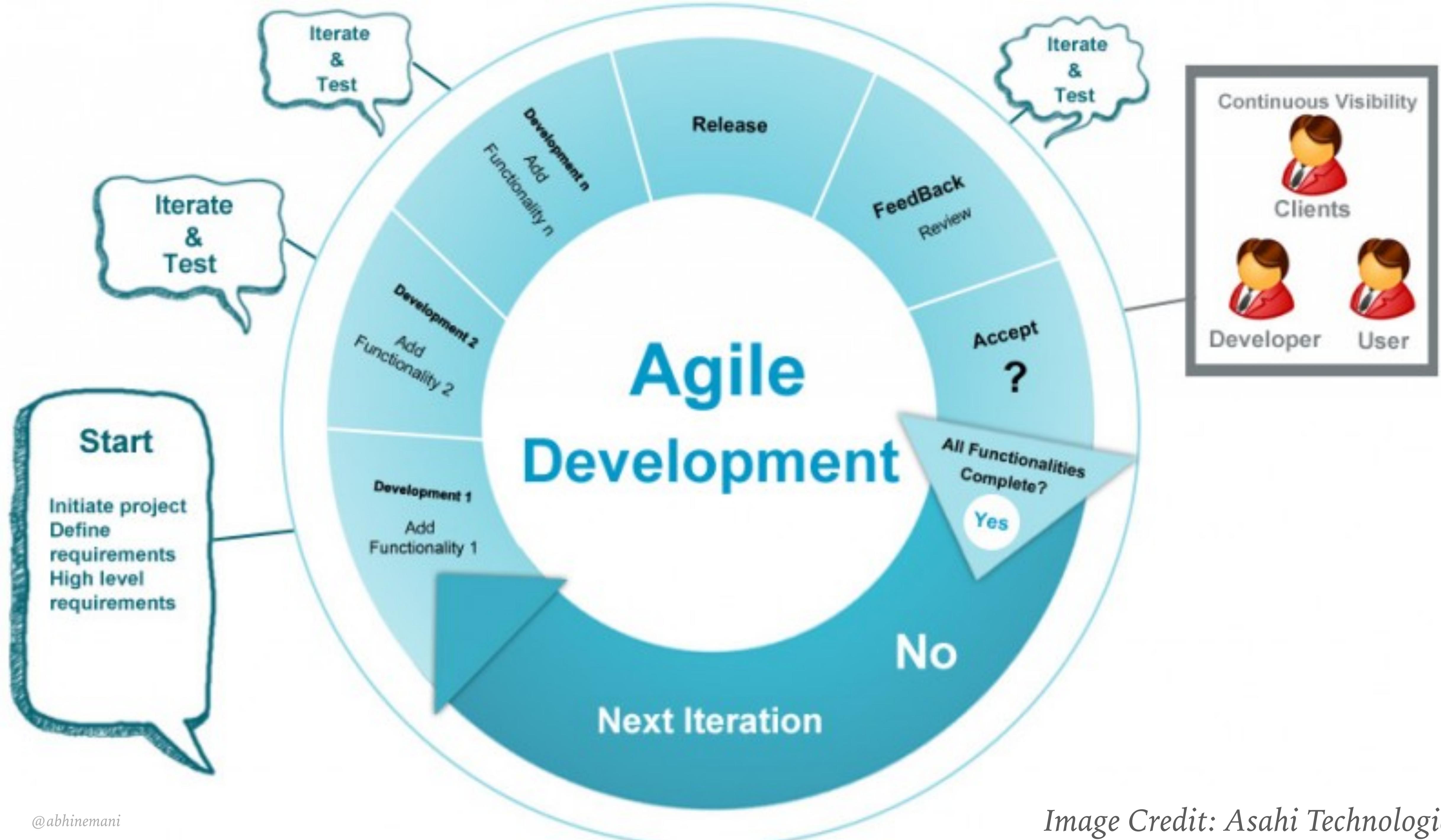


Waterfall

*Image Credit: Asahi Technologies*

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*“A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty.” - Eric Ries, The Lean Startup*

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**GOVERNMENT OPERATES UNDER  
CONDITIONS OF EXTREME UNCERTAINTY.  
SO GOVERNMENT, LIKE A STARTUP,  
SHOULD BE LEAN.**



There's much more...



# KEYS TO LEAN (CIVIC) TECH

- Concierge “technology”
- Technology is expensive, especially in government
- Fake it, until you make it
- MVP & Iterate
  - Start with the minimally viable product (MVP)
  - Always be learning
  - Build. Measure. Learn.
- Pivots
  - Expect to fail (and make sure everyone knows it)
- Avoid “vanity metrics”
  - Measure what matters
  - Good metrics assess impact (which is hard)



# DENVER'S PEAK ACADEMY

- Trains and collaborates with government employees to improve the customer and employee experience
- Housed in the budget office
  - Puts a focus on impact: savings
- Nearly every agency has participated
  - Mayor participated, giving an entire week to be trained, setting an example
- How they evaluate the program: savings, people trained, and agencies involved



# LEAN METRICS FOR PIRATES

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*And how to use them in civic tech*

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# AARRR – DAVE MCLURE

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- Acquisition
  - User comes
- Activation
  - User doesn't leave
- Retention
  - User comes back
- Referral
  - User tells people
- Revenue
  - User gives you “money”



# AARRR – DAVE MCLURE

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- Acquisition
  - Direct marketing
- Activation
  - Good product
- Retention
  - Email / message
- Referral
  - Viral marketing
- Revenue
  - Impact?
    - Example: Cost savings, program enrollment, time saved
    - Impact metrics should match or could inform policy



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# CASE STUDY: LA DASHBOARD

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DWP Call Wait...

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CONFERENCE  
OF MAYORS



THE U.S.  
CONFERENCE  
OF MAYORS

THE U.S.  
CONFERENCE  
OF MAYORS



THE U.S.  
CONFERENCE  
OF MAYORS

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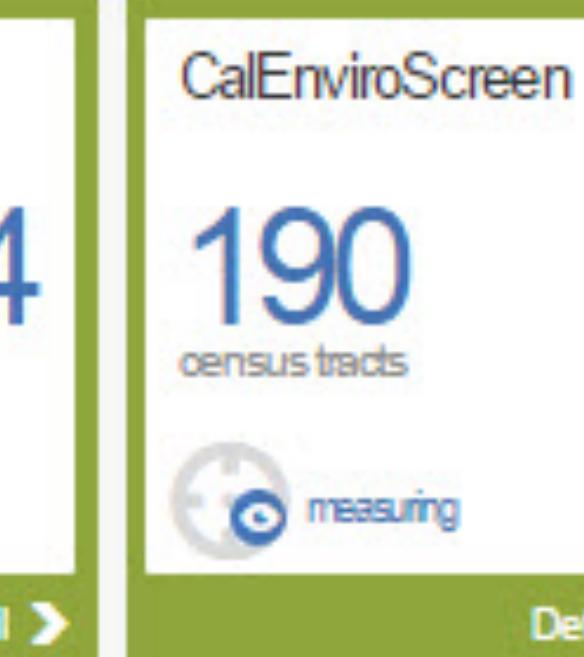
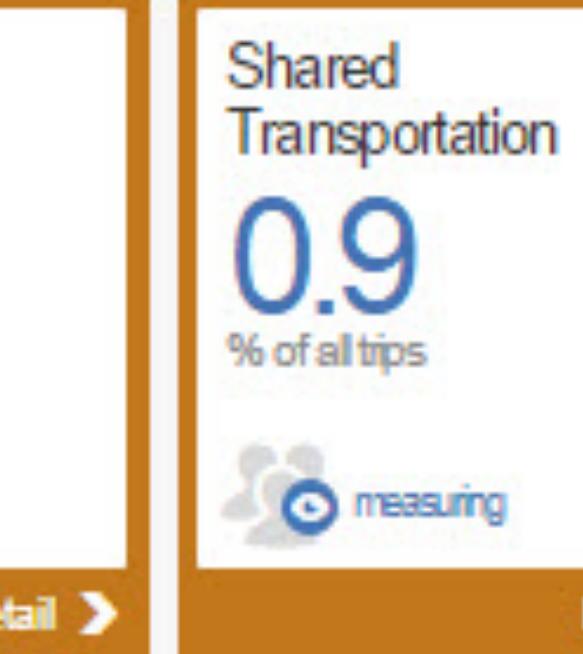
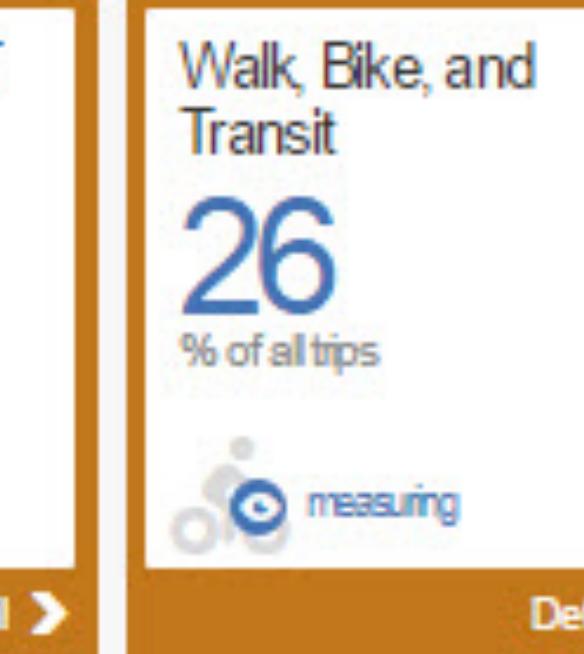
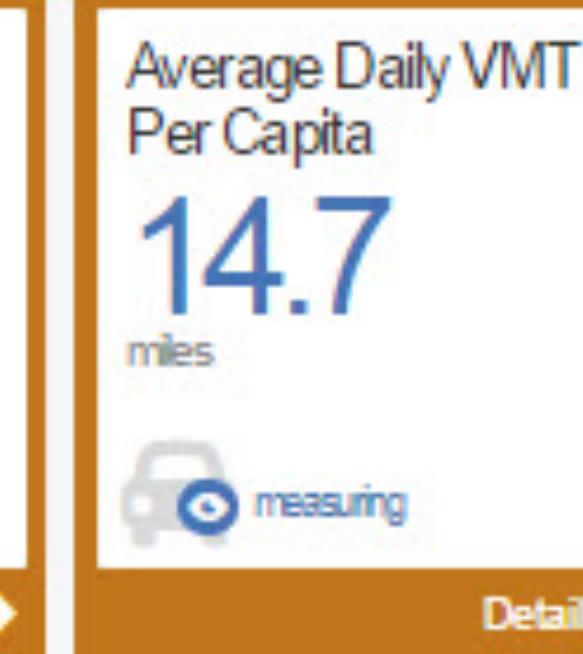
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MPL



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# LIVABLE CITY



DWP CALL CENTER AVERAGE WAIT TIME = 10 MINUTES (TARGET IS 3 MINUTES)



GALLONS OF WATER PER CAPITA USED DAILY = 136 GALLONS (TARGET IS 117)



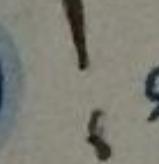
LIBRARY WEB TRAFFIC = 1,954,808 VISITORS IN AUGUST (2% DECREASE FROM JULY)



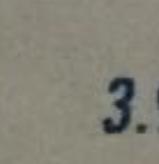
NUMBER OF GREAT STREETS CULTURAL / ART EVENTS = 3 IN THE MONTH OF OCT.



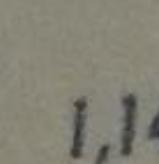
NUMBER OF COLLISIONS = 36,874 YTD (3.1% INCREASE FROM 2013)



932 LANE MILES PAVED FYTD = 38% OF FY GOAL



3.9 SIDEWALK MILES REPAIRED FY13-14 (NO SIDEWALK CONSTRUCTION THIS FY)



1,140 LED LIGHT REPLACEMENTS FYTD = 15% OF 7,500 LED LIGHT TARGET



\$3 BILLION = MONEY RAISED FOR MTA PROJECTS



76.40% DIVERSION RATE FY 13-14 (NO CHANGE FOR LAST THREE FY'S)

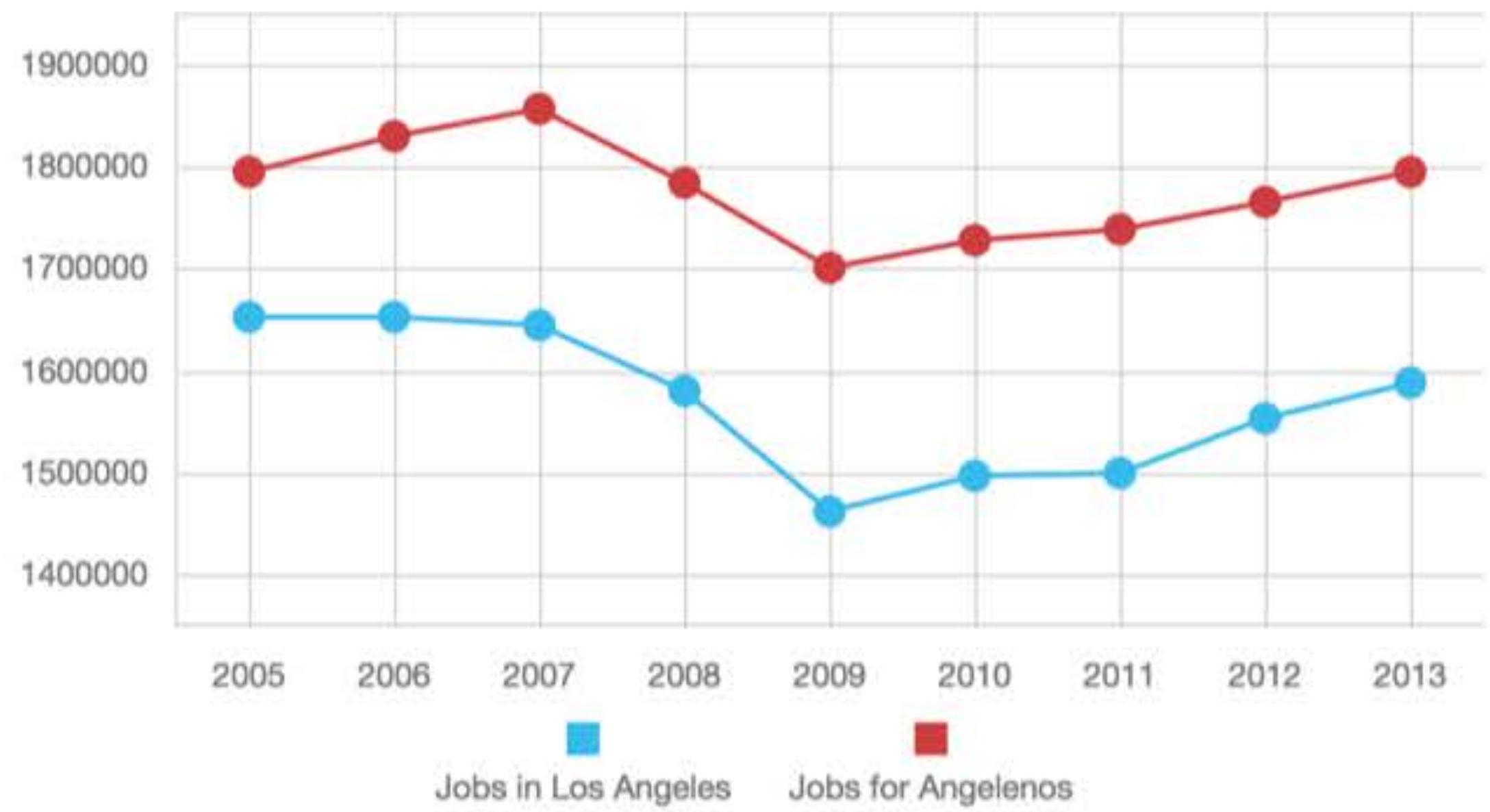


87.7 MILES OF MTA RAIL NETWORK  
3,700 MILES OF MTA BUS NETWORK (BOTH METRO & METRO CONTRACTED LINES)

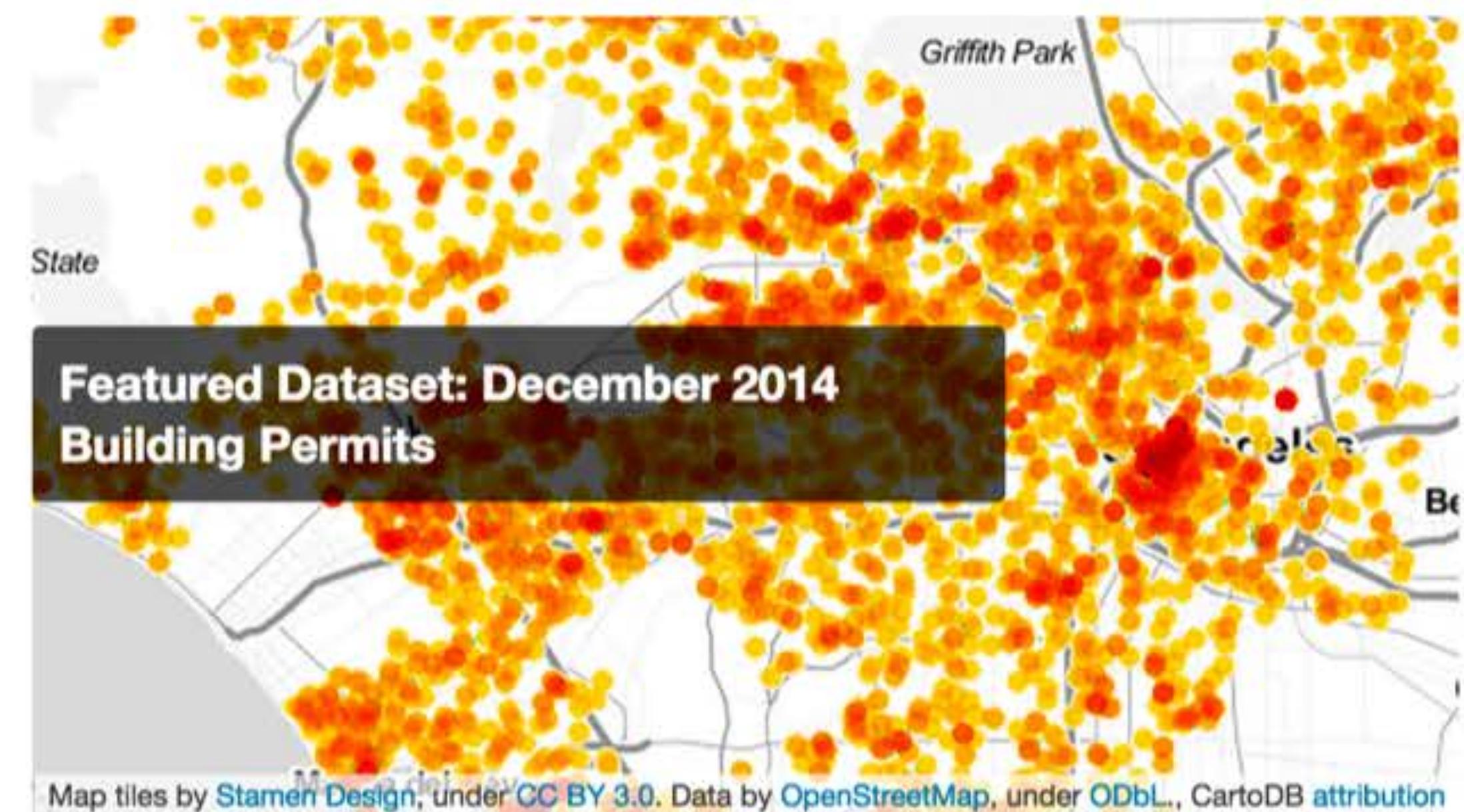


5.5% DECREASE IN WEEKDAY TRANSIT BOARDINGS (TARGET IS 2% INCREASE PER YEAR)

## Job Growth



## Building Permits



## Municipal Water Use

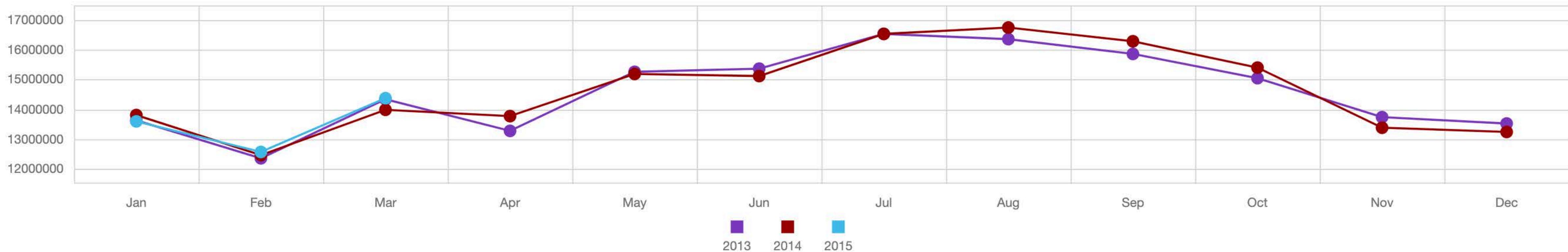


### Goals for Improvement

- Low-Flow Faucets and Toilets
- Turf Removal
- Building Retrofits
- City Hall Chiller Retrofit
- Energy and Water Building Dashboard

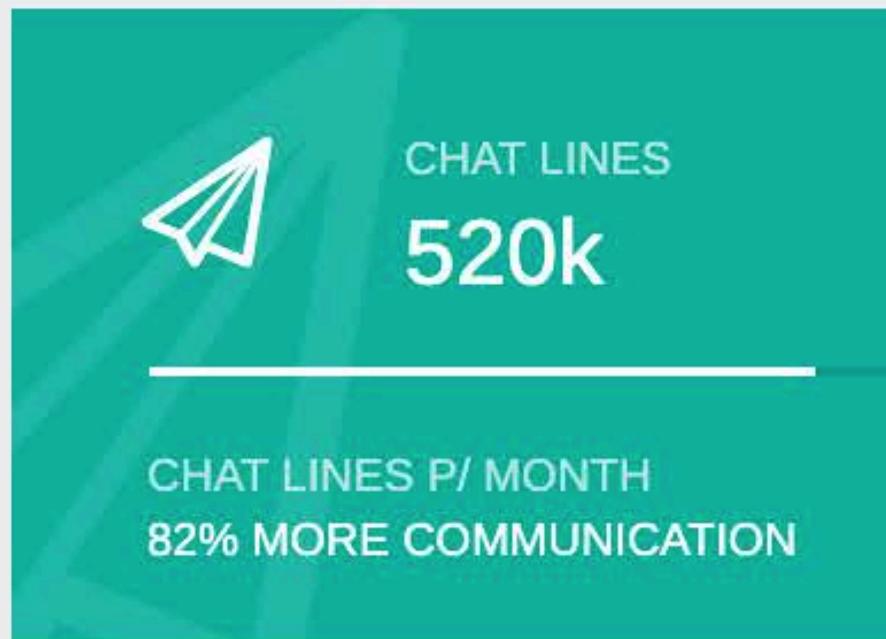
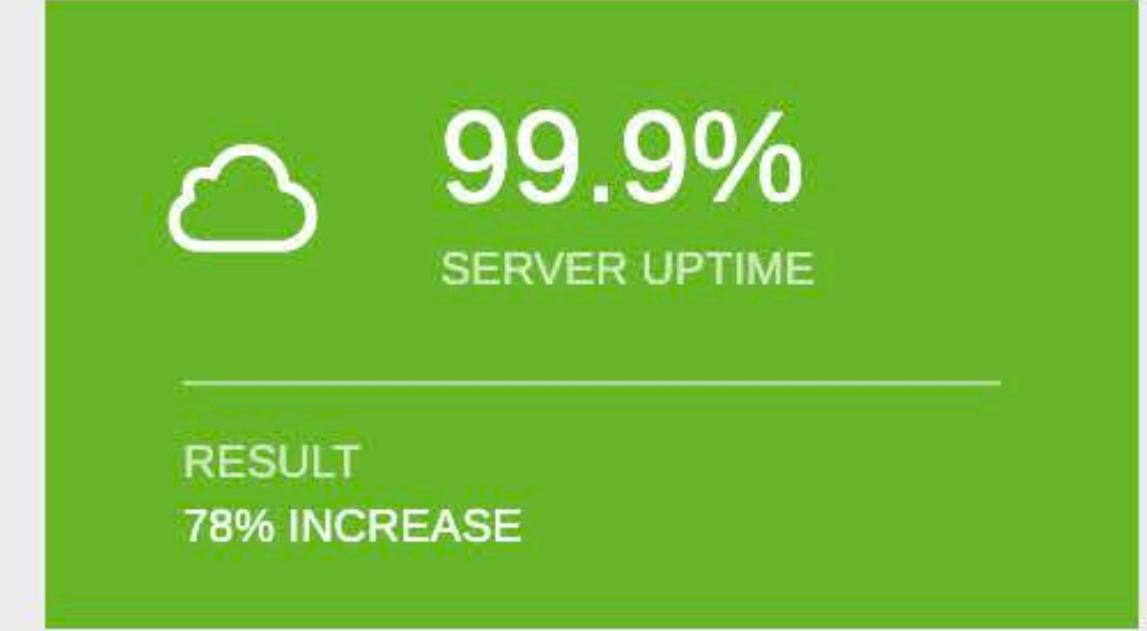
## Deep Dive: GSD

### Municipal Electricity Use



# V1 WAS FULL OF LOTS OF EVERYTHING

*But that's not what anyone wanted.  
And so: Pivot.*



**to do list**  
**Tasks**

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- Web Design
- Slicing
- WooCommerce
- Programming
- SEO Optimize

Add task...

08 March

Fight against malnutrition  
Aga Khan Bloomberg,  
economic independence  
inspire breakthroughs  
benefit civil.

RETWEET

“

“As you consider building your own minimum viable product, let this simple rule suffice: remove any feature, process, or effort that does not contribute directly to the learning you seek.”

-Eric Ries



“SIMPLE, BEAUTIFUL, AND EASY TO USE”

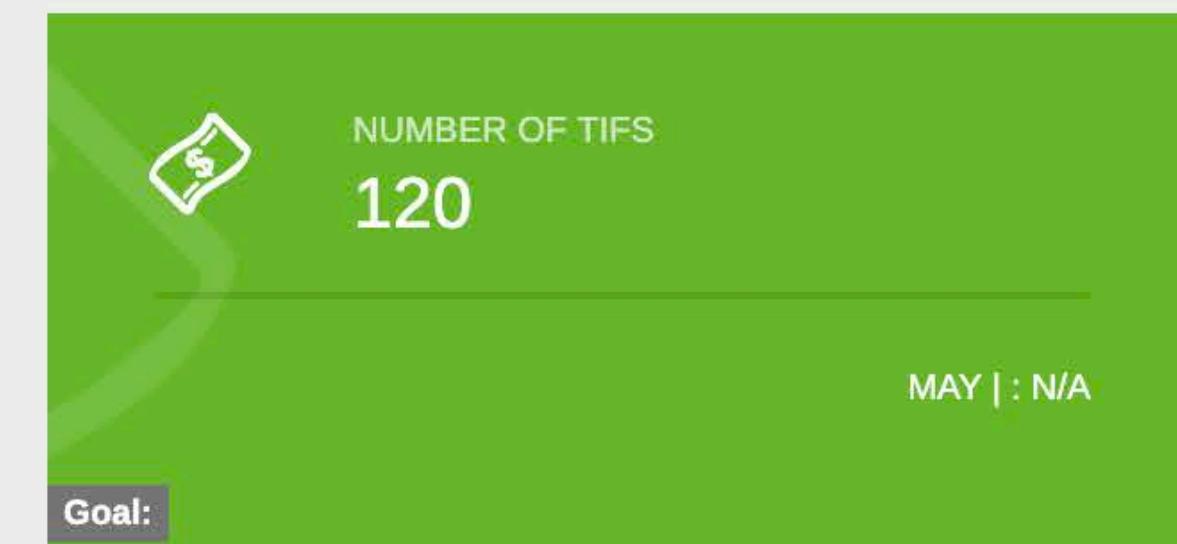
*Less was more.*



# BENEFITS / DRAWBACKS

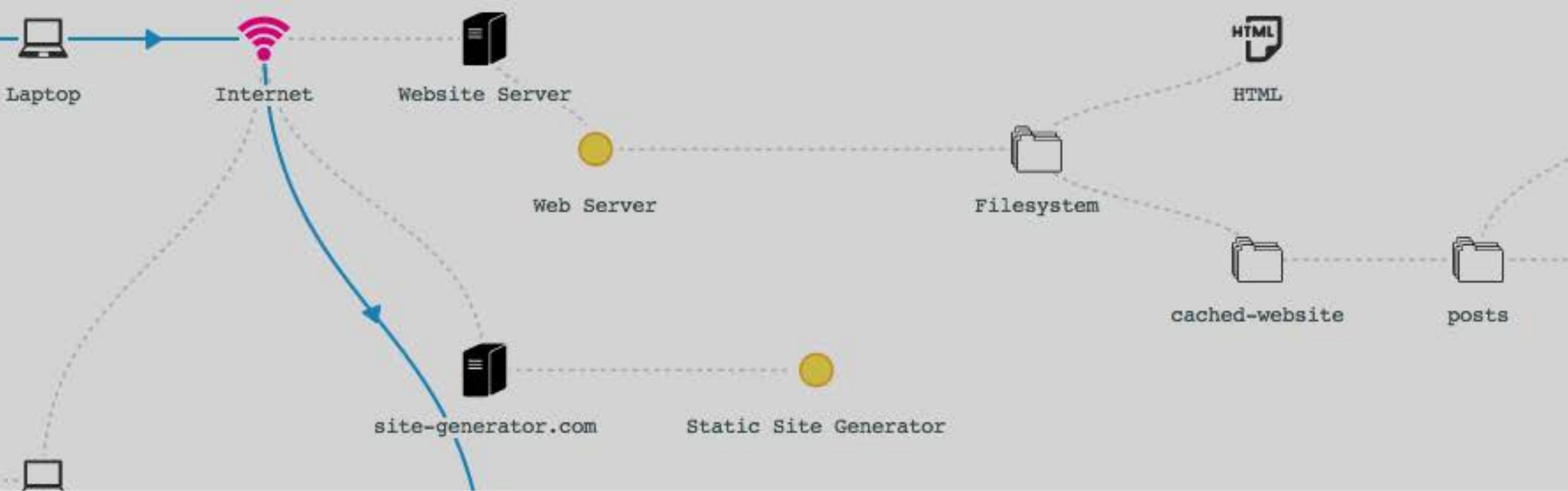
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- Benefits
  - No database; Google Spreadsheets powered
    - Revision history
    - Feels like Excel
  - No login
    - Relies on existing g-suite account
  - Relies on very common javascript library: JQuery
    - Only needs one more script to function
  - Usage mirrors Jekyll
- Drawbacks
  - No approval / workflow / management
  - Data has to be public
  - No file storage
    - Images must be stored elsewhere
  - Individual sheets/documents needed for each page



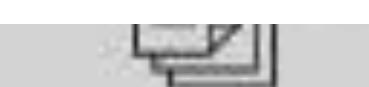
# “SO CAN YOU MAKE MORE?”

*After the MVP, the challenge was building for scale.*



# JEKYLL

*Multi-page websites sans database: <https://jekyllrb.com/>*



Templates



Filesystem



about.html

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Branch: master ▾

[bradley-tower / \\_posts / 2015-06-28-mobi.html](#)

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 Abhi Nemani switched ownership

926ba1d on Oct 23, 2015

[0 contributors](#)

12 lines (12 sloc) | 253 Bytes

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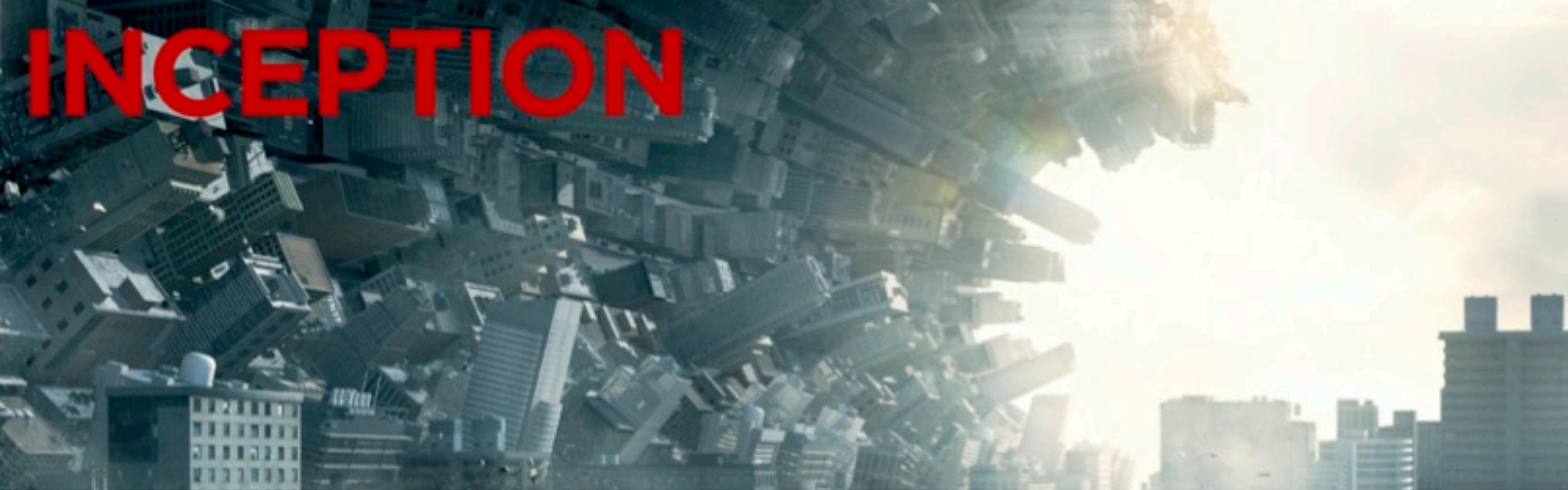
```
1 ---  
2 layout: post  
3 title: "MOBI"  
4 date: 2015-06-28 08:12:25  
5 categories: mayor  
6 gdoc: 1_jkX0g0_jdskSpFve8xQqw9e1UAsiYD-lYWsi01uj0w  
7 permalink: MOBI  
8 ---  
9 {% include viz/web.html %}  
10 {% contentfor bottom %}  
11     {% include viz/mobi-stat.html %}  
12 {% endcontentfor %}
```

# Homelessness

## Veteran Homeless LA Monthly Housed



# INCEPTION



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# INCEPTION

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# RISKS / GOALS / ANTI-GOALS

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# RISKS & ANTI-GOALS

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- Risks
  - Business risks
  - Technical risks
  - Legal / policy risks
- Anti-goals
  - What is out of scope?
  - What should we **\*not\*** worry about?

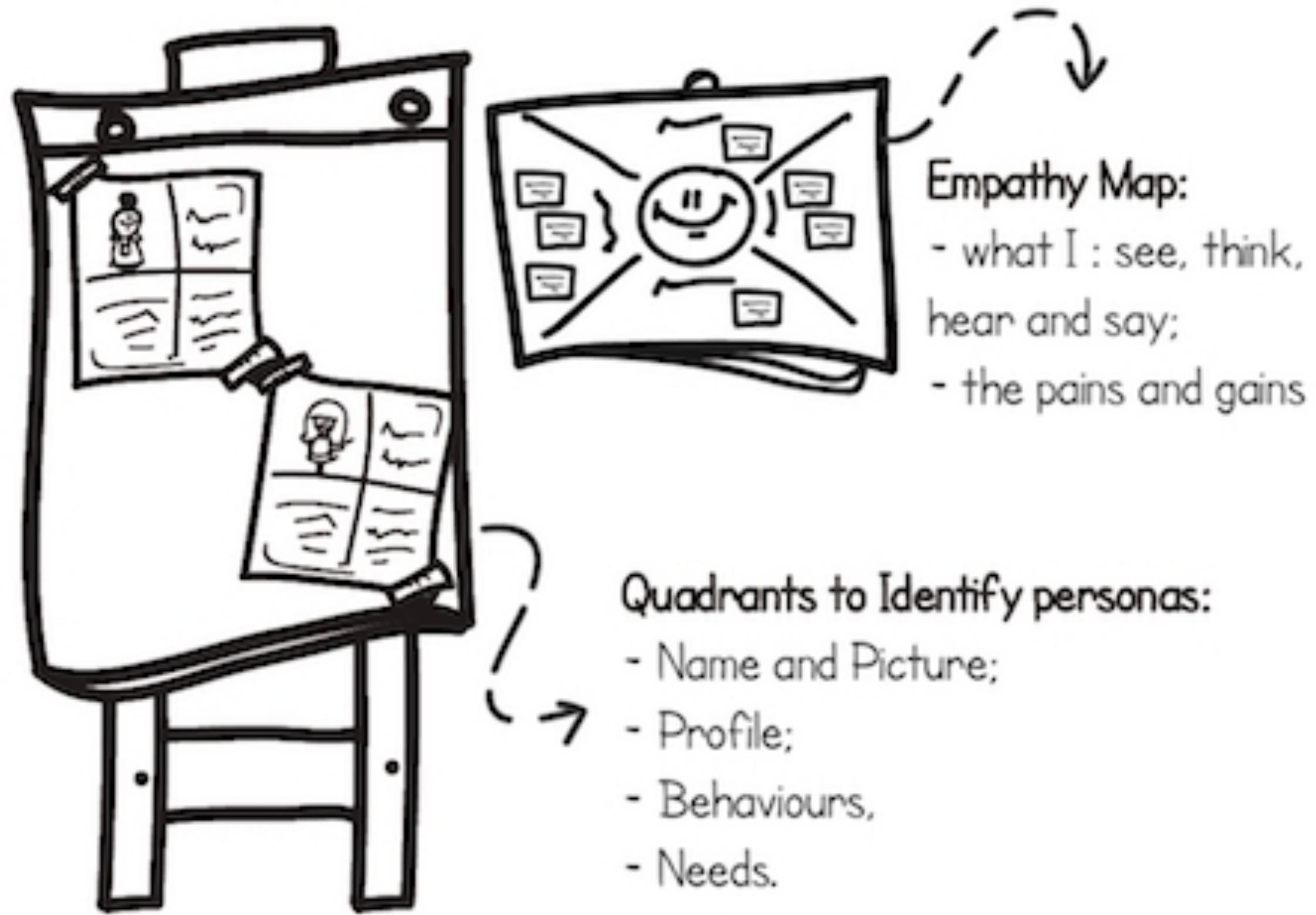


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# PERSONAS

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- Personas put your user research to work
- “Fake” identities to design your app for
- Make them as real as possible
  - Picture
  - Bio / personality
  - Goals / frustrations
- Resources
- <https://www.hubspot.com/make-my-persona>

# PERSONAS



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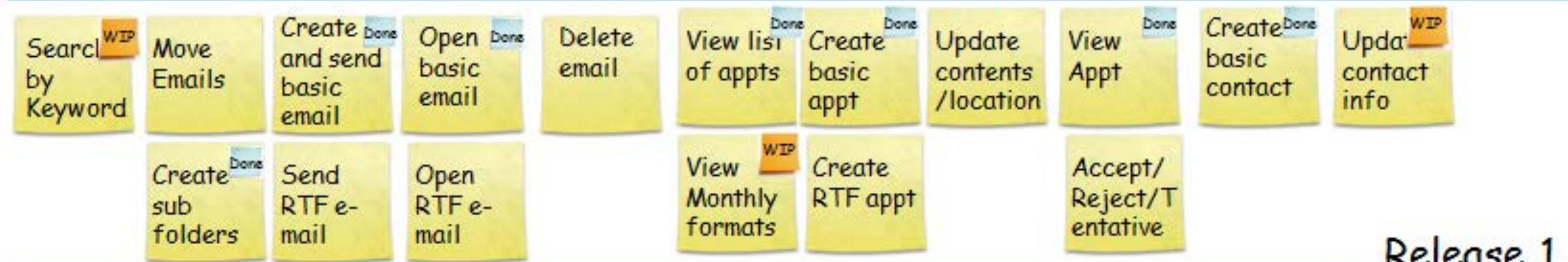
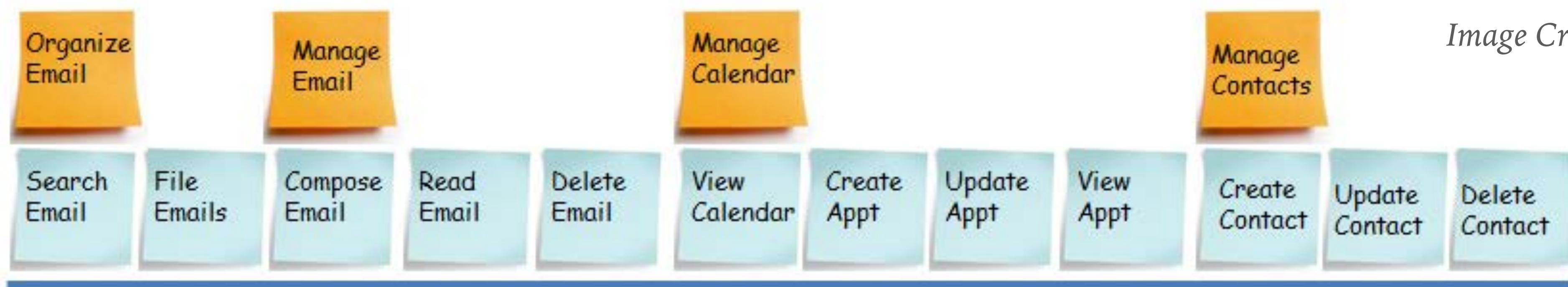
# USER STORIES

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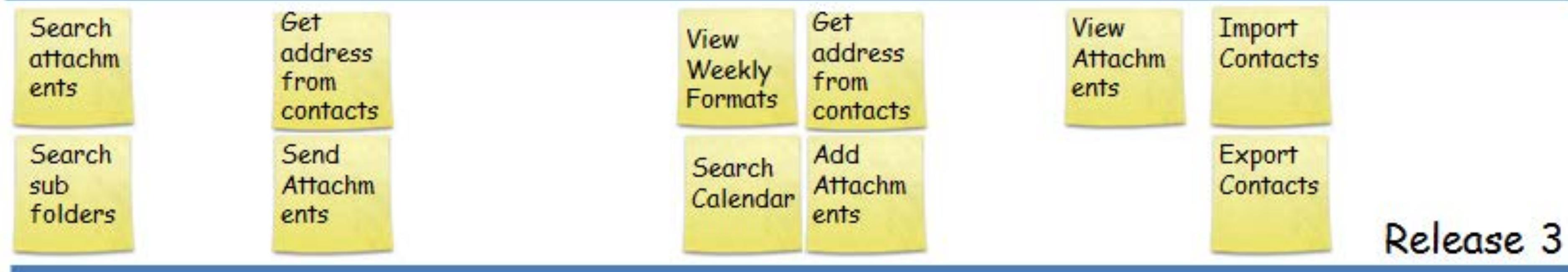
- What would each persona want to do?
- Start big and then break it up
  - Example
    - Sarah (Department head) updates Mayor on new monthly metric
      - Sarah creates account
      - Administrator authorizes account
      - Sarah logs into administrative view
      - Sarah changes metric
      - New metric approved by administrator
      - New metric published to publish dashboard
      - New metric(s) email generated for Mayor
        - Email edited by Sarah
        - Email approved by administrator
        - Email sent
      - New metric(s) text generated for Mayor
        - Text edited by Sarah
        - Email approved by administrator
        - Email sent
    - Then PRIORITIZE



Release 1



Release 2



Release 3

Image Credit: Code Like This

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MVP



Image Credit: InfoQ