

# Good Technical Debt

**Jon Thornton**

LeadDev NYC | March 13-14, 2023

A photograph of a desk completely overwhelmed by a chaotic mess of cables. In the background, a computer monitor with the brand name 'HANNspree' is visible. To the right, there are stacks of silver electronic components, possibly audio or video equipment. The floor in the foreground is also covered in a dense network of black, white, and red cables, some bundled together and others loose. A small figurine is perched on one of the equipment stacks. The overall scene conveys a sense of disarray and complexity.

# TECH DEBT





“Shipping first time code is like going into **debt**. A little debt speeds development so long as it is paid back promptly...”

— Ward Cunningham, 1992

# LOAN APPLICATION

## Personal Information

Name (Last)	PUBLIC	(First)	JOHN	(Middle Initial)		Home Telephone	1111 - 1111
Address (Mailing Address)	12345 MAIN STREET	(City)	ANYWHERE	(State)	22	Other Telephone	22 22 2222
E-Mail Address	JQPJQPJQP@JQPJQP	APPLICANT IS UNDER REVIEW					

## Services needed

UNDER REVIEW

## Current Income

High School Graduate Or General Education (GED) Test Passed? Yes No

Military (Most recent first)



# Agenda

1. Under-abstracting
2. Under-scaling
3. Throwaway code





EDIT

Home  
Page - Published



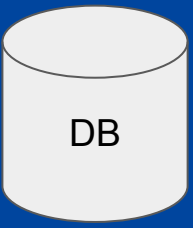
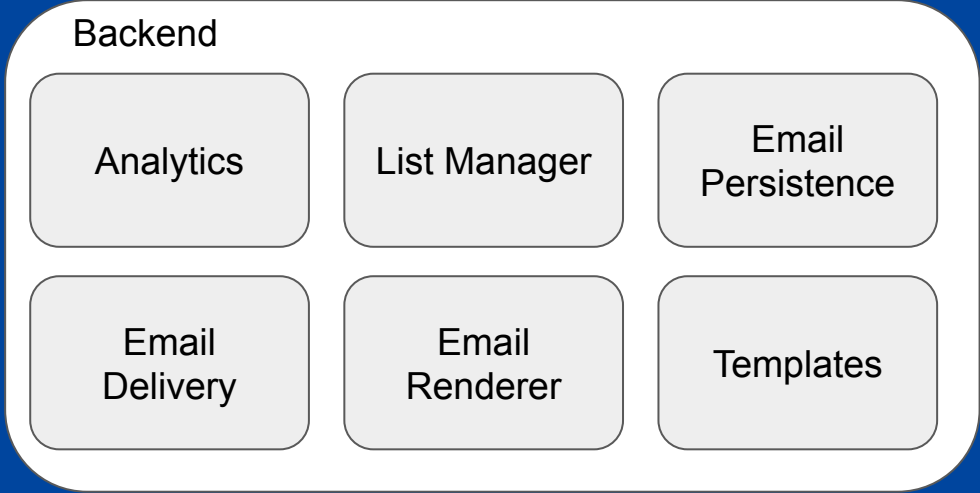
BRCH

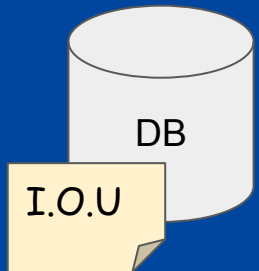
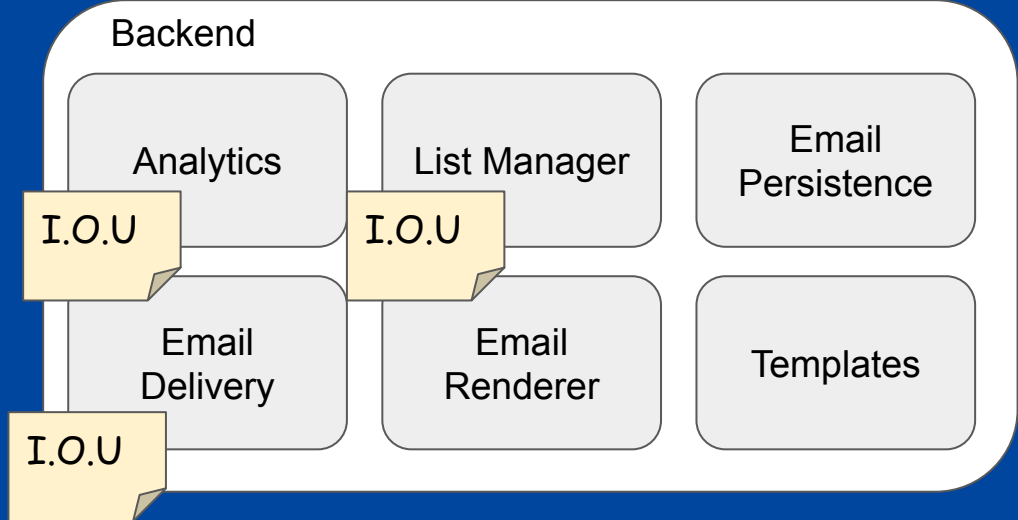
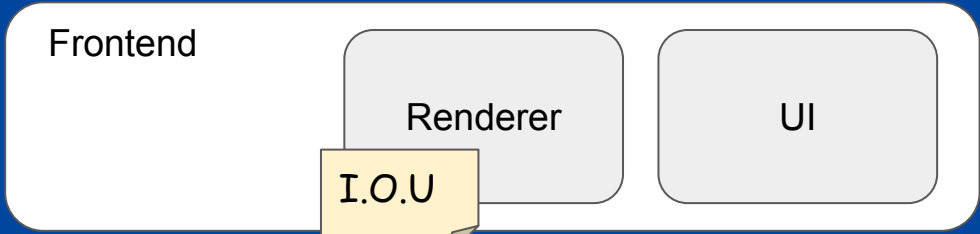
# Build your online presence.

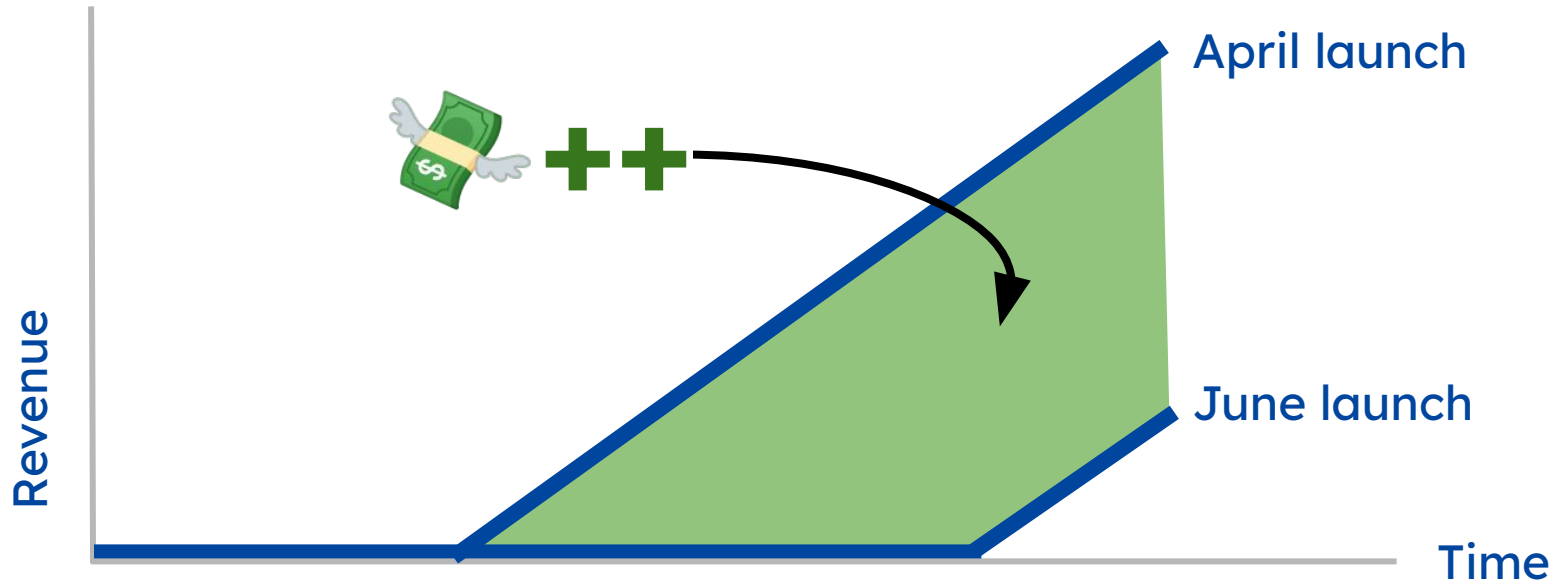
GET STARTED

Start your free website trial today.  
No credit card required.

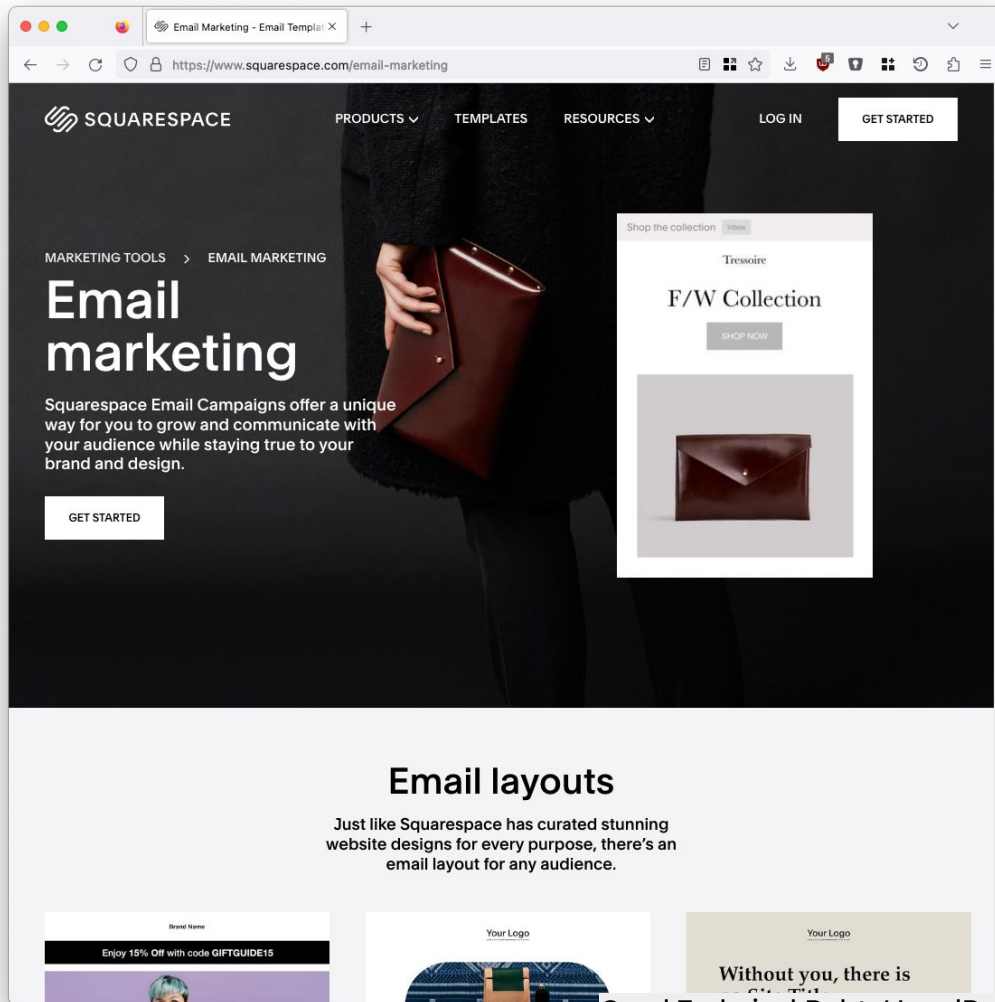












MARKETING TOOLS > EMAIL MARKETING

# Email marketing

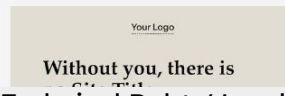
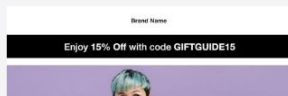
Squarespace Email Campaigns offer a unique way for you to grow and communicate with your audience while staying true to your brand and design.

GET STARTED



## Email layouts

Just like Squarespace has curated stunning website designs for every purpose, there's an email layout for any audience.



# Cut the right corners: the difference between good and bad debt



VS



# Good tech debt: Under-abstracting by hardcoding





Squarespace Campaigns

https://newsletters-prod.squarespace.com/config/marketing/campaigns

Marketing

- Email Campaigns **Create**
- Drafts
- Scheduled 0
- Sent 47
- Automations 4
- Mailing Lists
- Sender Profiles

# Whether you have 10 subscribers or 10,000, we have a plan for you.

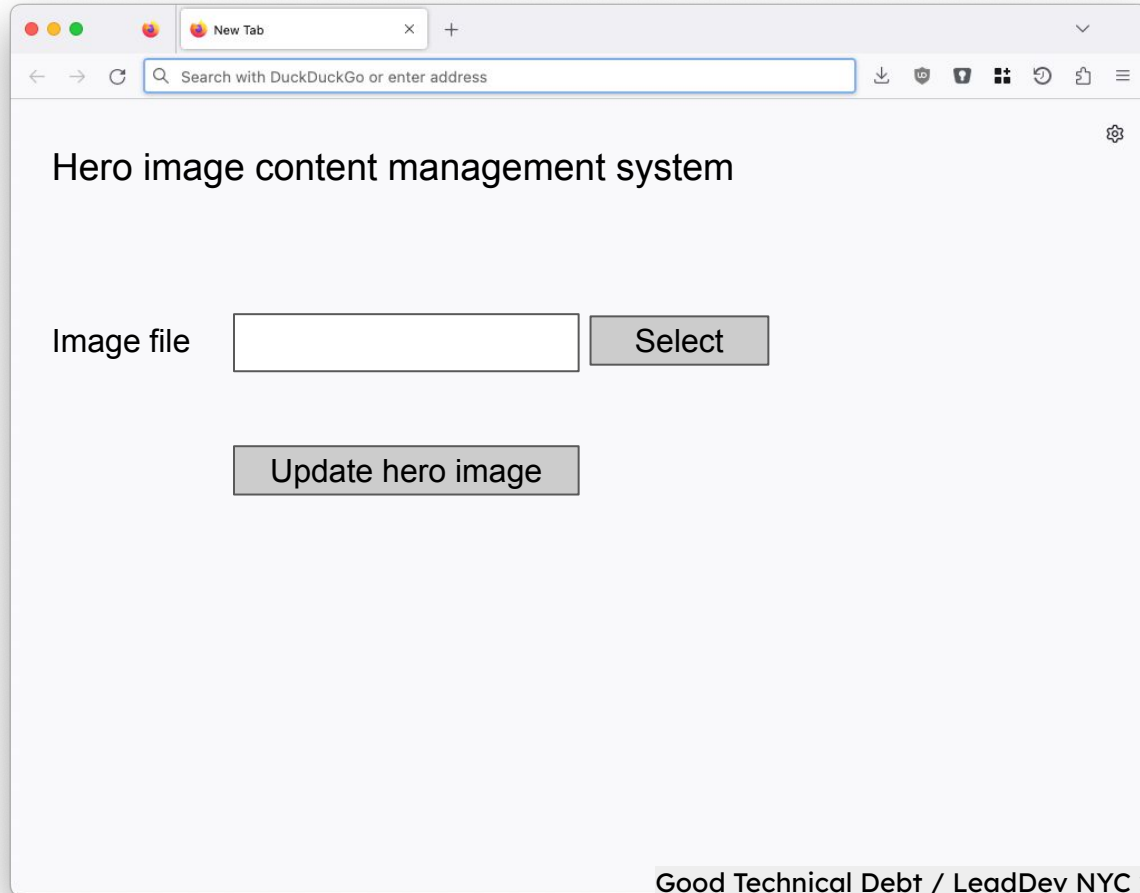
[SELECT A PLAN ->](#)

### Last Campaign Performance

Metric	Count	Percentage
Delivered	1	100%
Opened	1	100%
Clicked	0	0%

Squarespace Internal Site  
Email Campaigns is comped for this site.

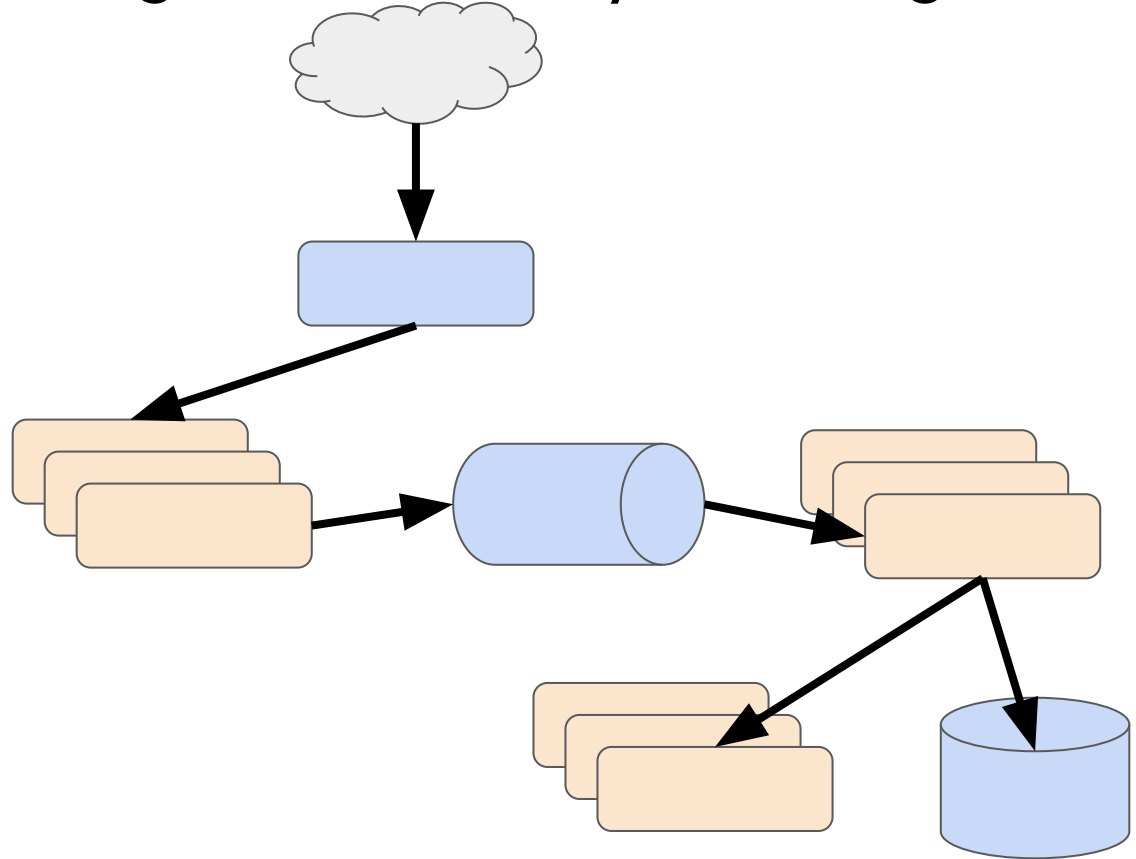
# Simple Content Management System (CMS) mockup



# Figurative CMS system diagram

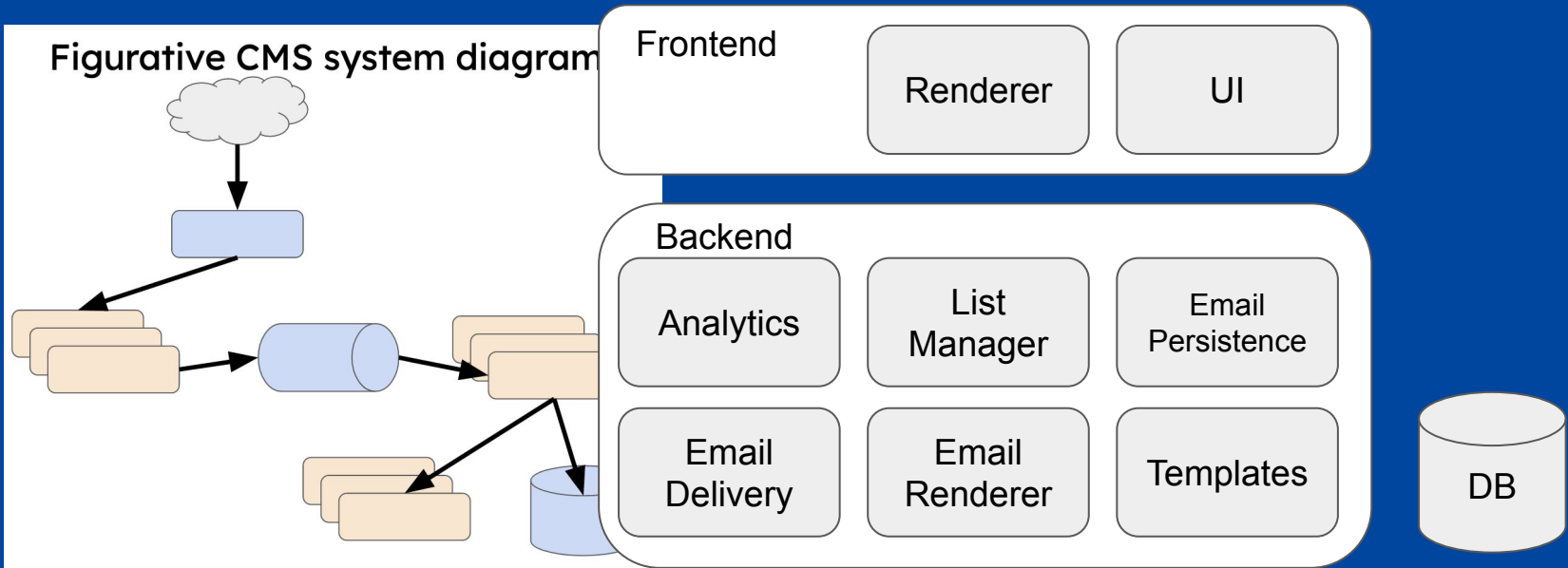
## Content management system requirements

- Backend REST APIs
- Frontend (React?)
- File upload validation
- Image storage
- Authentication
- Permissions
- Logs, metrics, and alerting
- Runbooks
- Tests
- Error handling





# Figurative CMS system diagram





**Jeremy D. Miller**

@jeremydmiller · [Follow](#)



Reminder, any extensibility point that's never used isn't just wasted effort, it's likely to also get in your way as well

10:42 AM · Feb 20, 2015



113

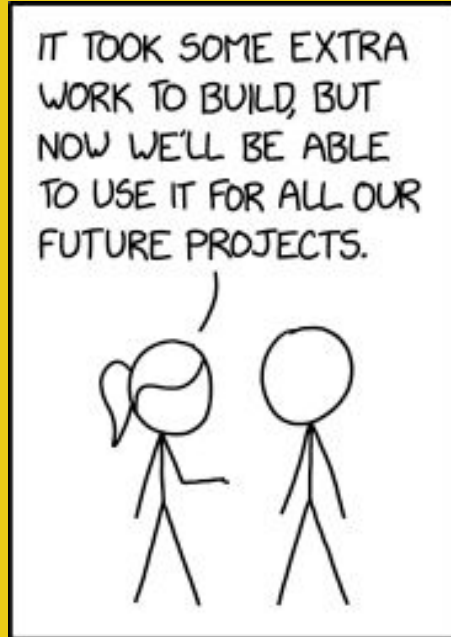


Copy link

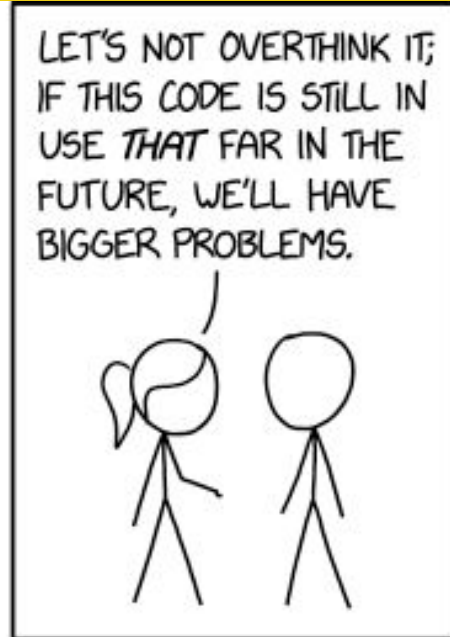
[Read 8 replies](#)



# You aren't gonna need it (YAGNI)



HOW TO ENSURE YOUR CODE IS NEVER REUSED



HOW TO ENSURE YOUR CODE LIVES FOREVER



```
if (Date.now() >= NEW_CONTENT_DATE) {  
    return 'new-content.png'  
} else {  
    return 'old-content.png'  
}
```

# Under-abstracting by hardcoding

Does it help us YAGNI?

Is Git an acceptable UI?

Is the build and deploy  
pipeline fast?



**“If it hurts, do it more frequently, and bring the pain forward.”**

- Write tests
- Document things
- Keep the build fast
- Finish migrations
- Have good alerting

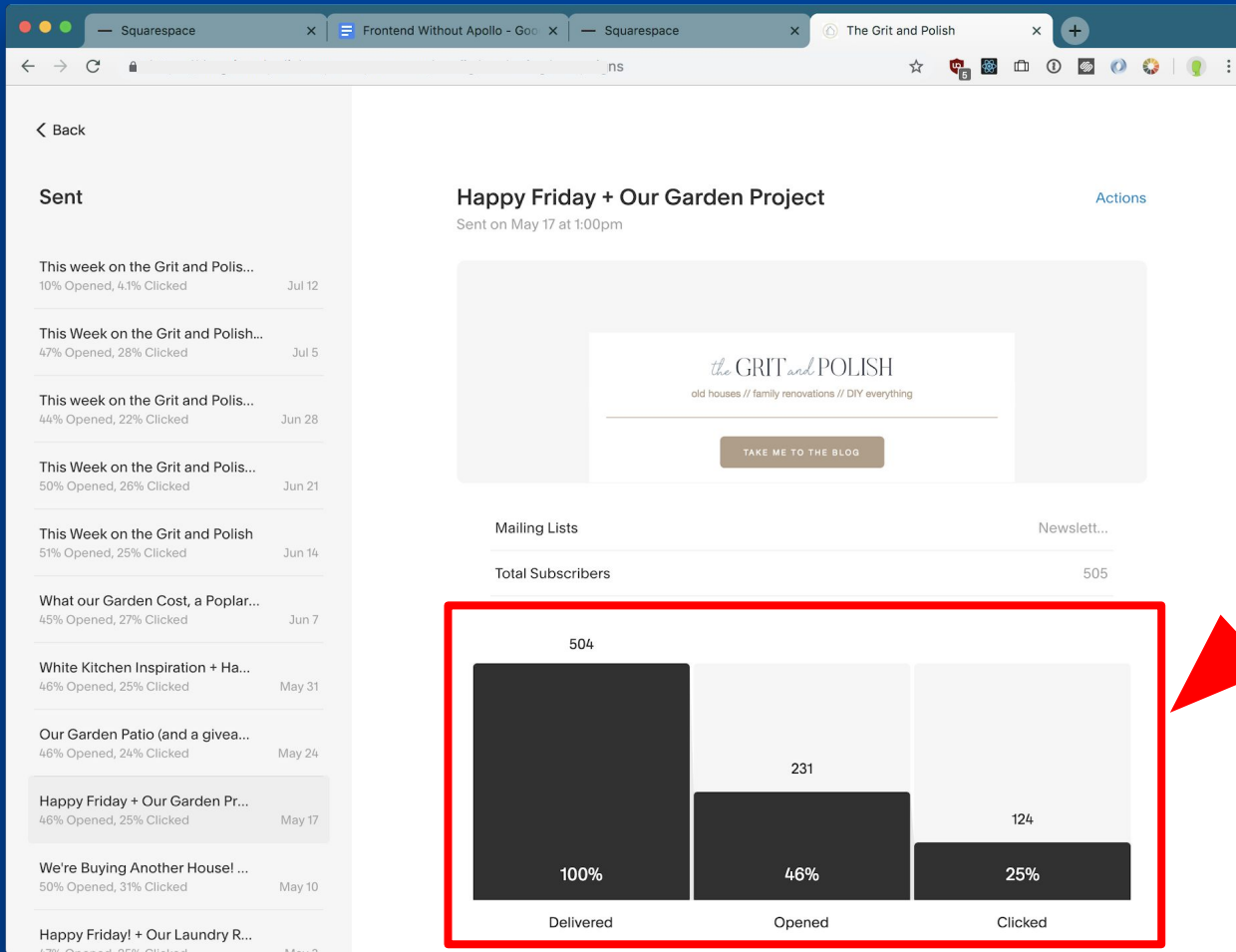
**— Jez Humble**

*Continuous Delivery: Reliable Software Releases  
Through Build, Test, and Deployment Automation*  
2010

# Good tech debt: Under-scaling







CAMP-4761

As a user, maybe this  
will work?



13

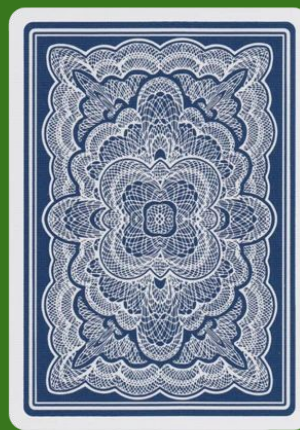
“A great decision is the result of a good process, and that process must include an attempt to accurately represent our own state of knowledge. That state of knowledge, in turn, is some variation of ‘I’m not sure’.”

— Annie Duke  
*Thinking In Bets*  
2018





36%

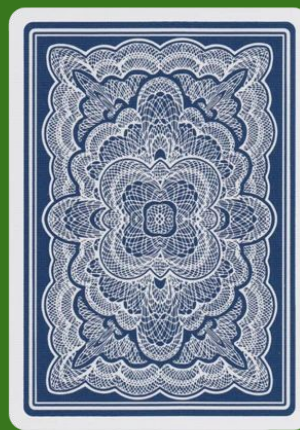


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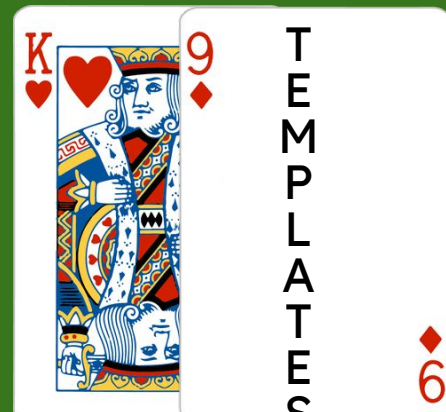




36%



64%





```
return {  
  messageCount: db.countMessagesWithoutCaching(),  
  deliveredCount: db.countDeliveredWithoutCaching(),  
  openedCount: db.countOpenedWithoutCaching(),  
}
```

# Good tech debt: Under-scaling

Test the limits

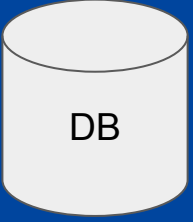
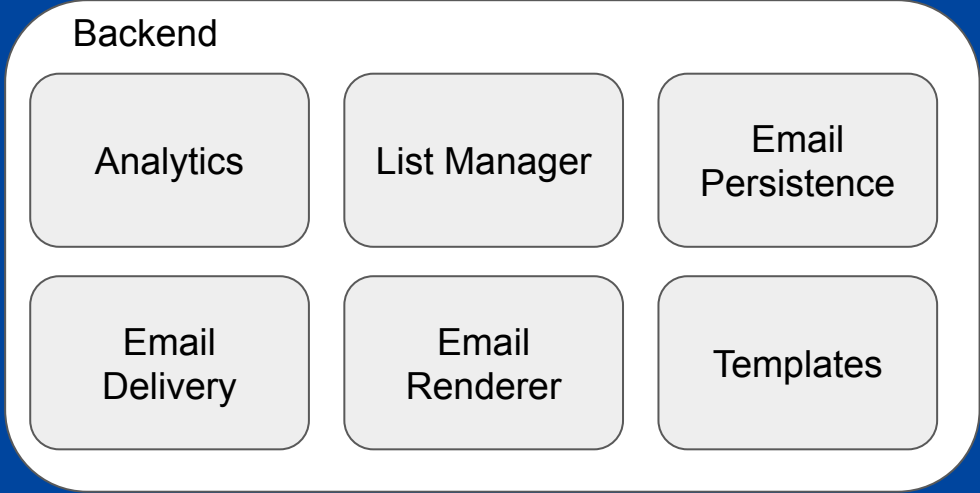
A+ observability

Understand the  
path to scaling



Sometimes you  
get lucky





# Project Timeline

Frontend editor

Templates

Persistence

Backend rendering

Mailing lists

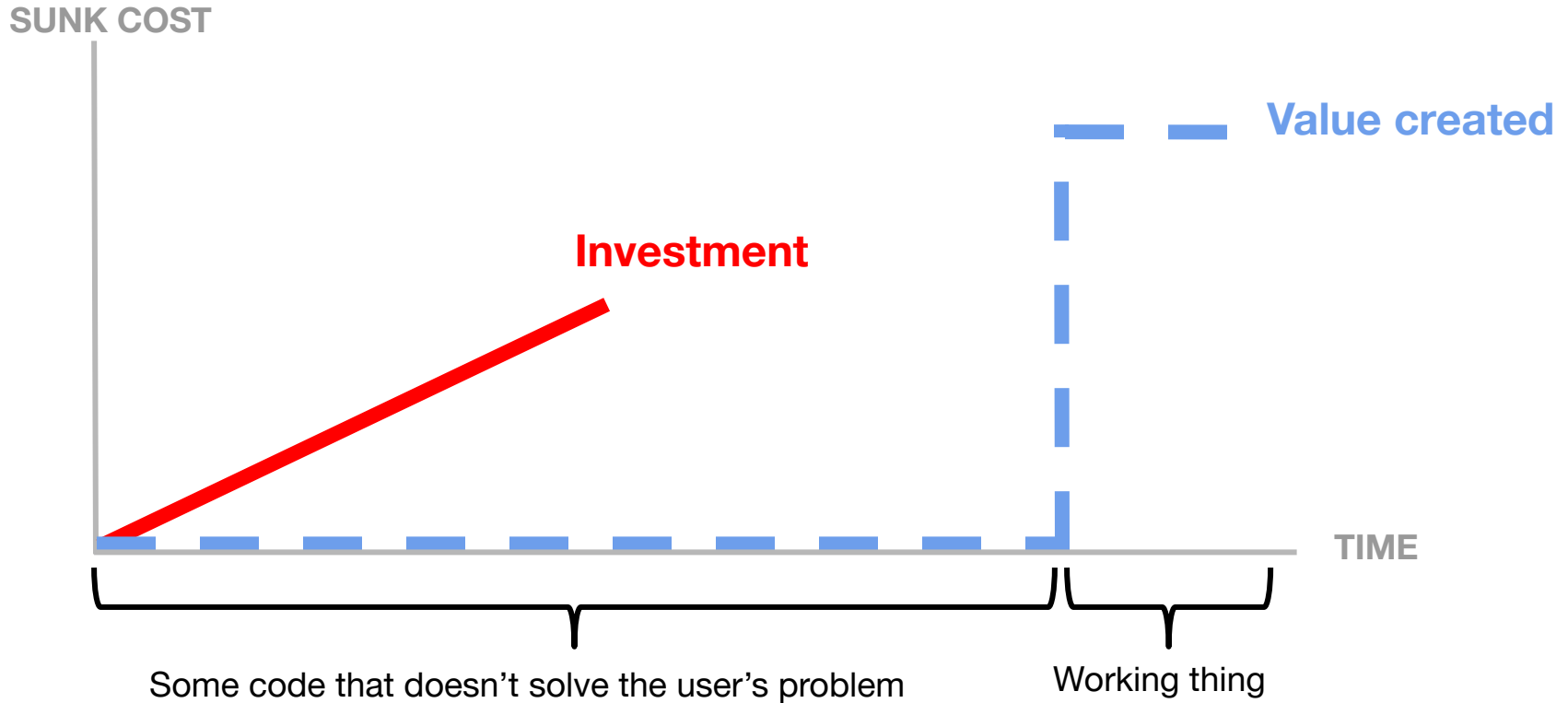
Email sender

Analytics

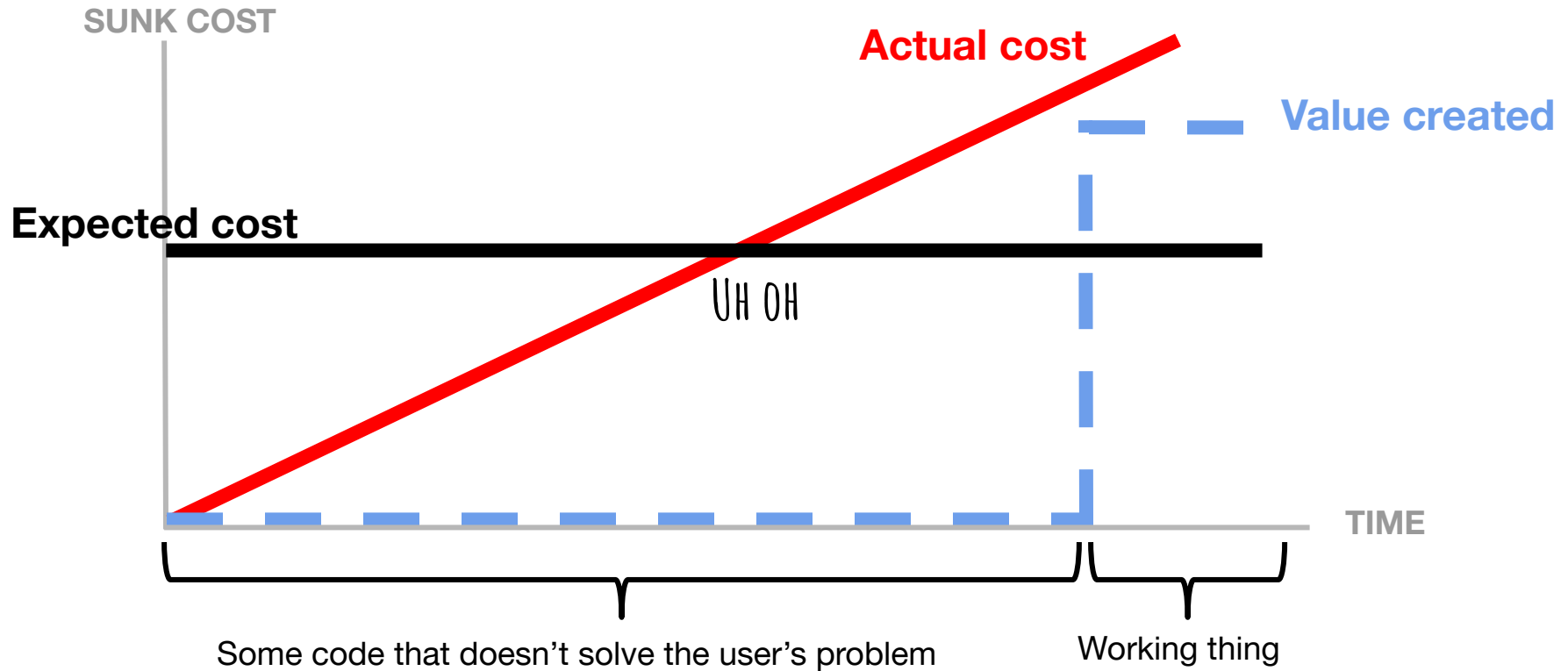
Time



# The waterfall trap



# The waterfall trap





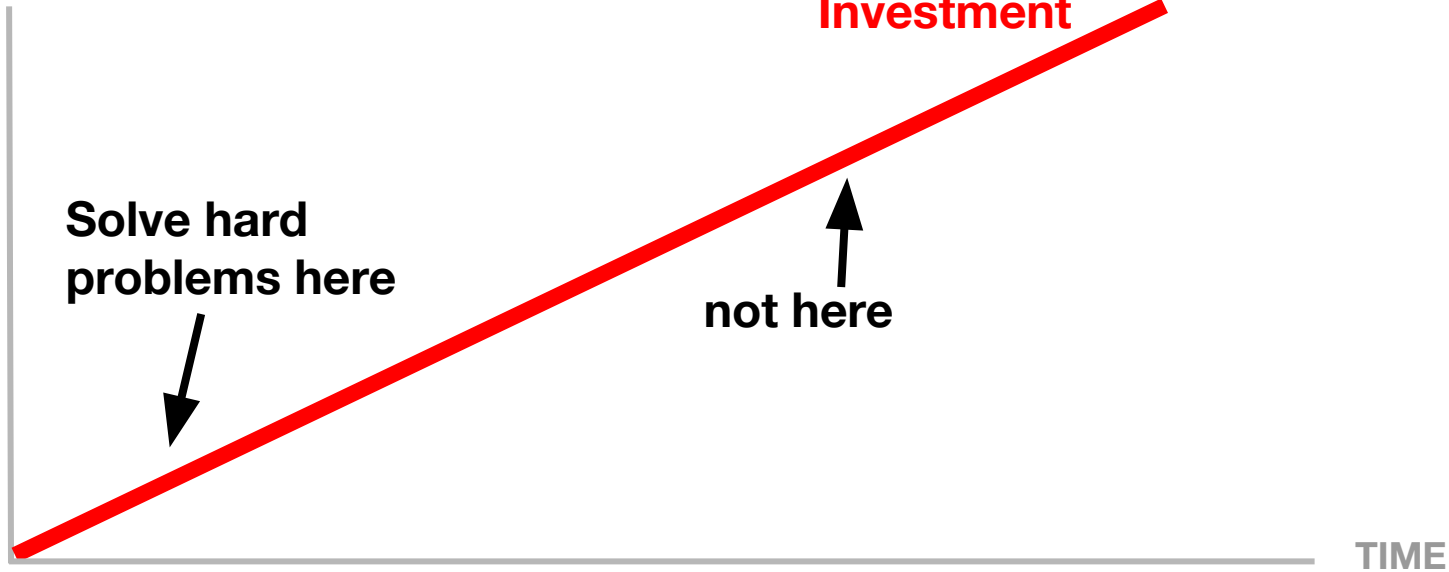


*Tackle the Monkey First*

**Astro Teller**

<https://x.company/blog/posts/tackle-the-monkey-first>  
2016

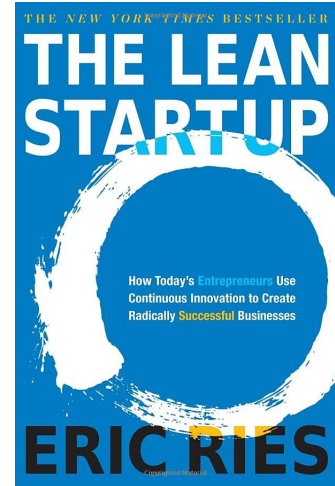
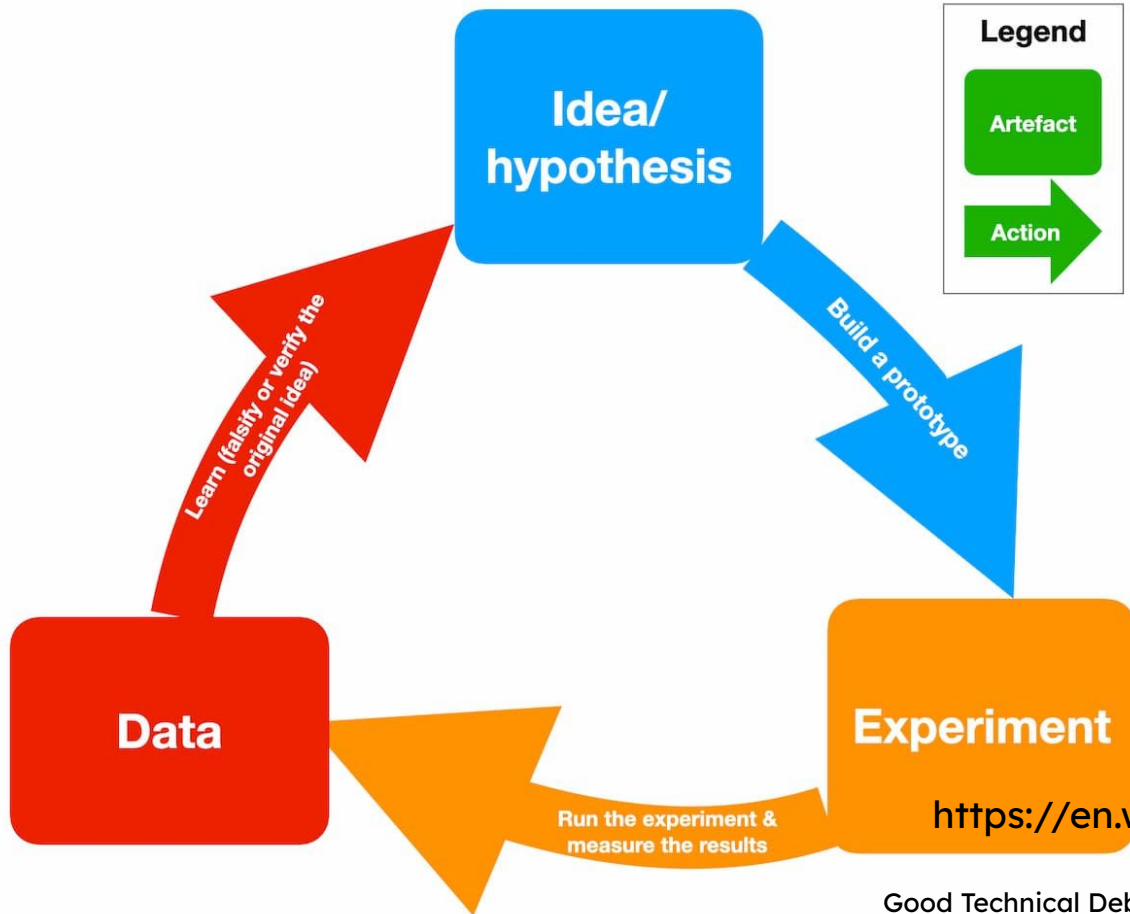
SUNK COST







# The Build-Measure-Learn Loop



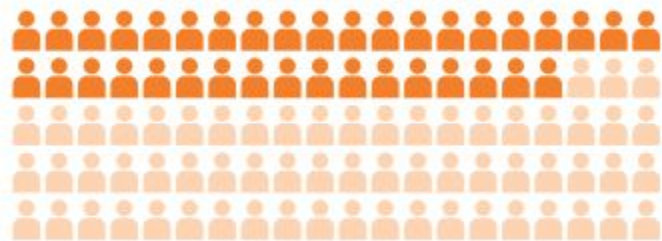
[https://en.wikipedia.org/wiki/Lean\\_startup](https://en.wikipedia.org/wiki/Lean_startup)

## What people say



**77%** of adults say they plan to visit the dentist within the next year.

## What people do



**37%** of adults actually visited the dentist within the last year.

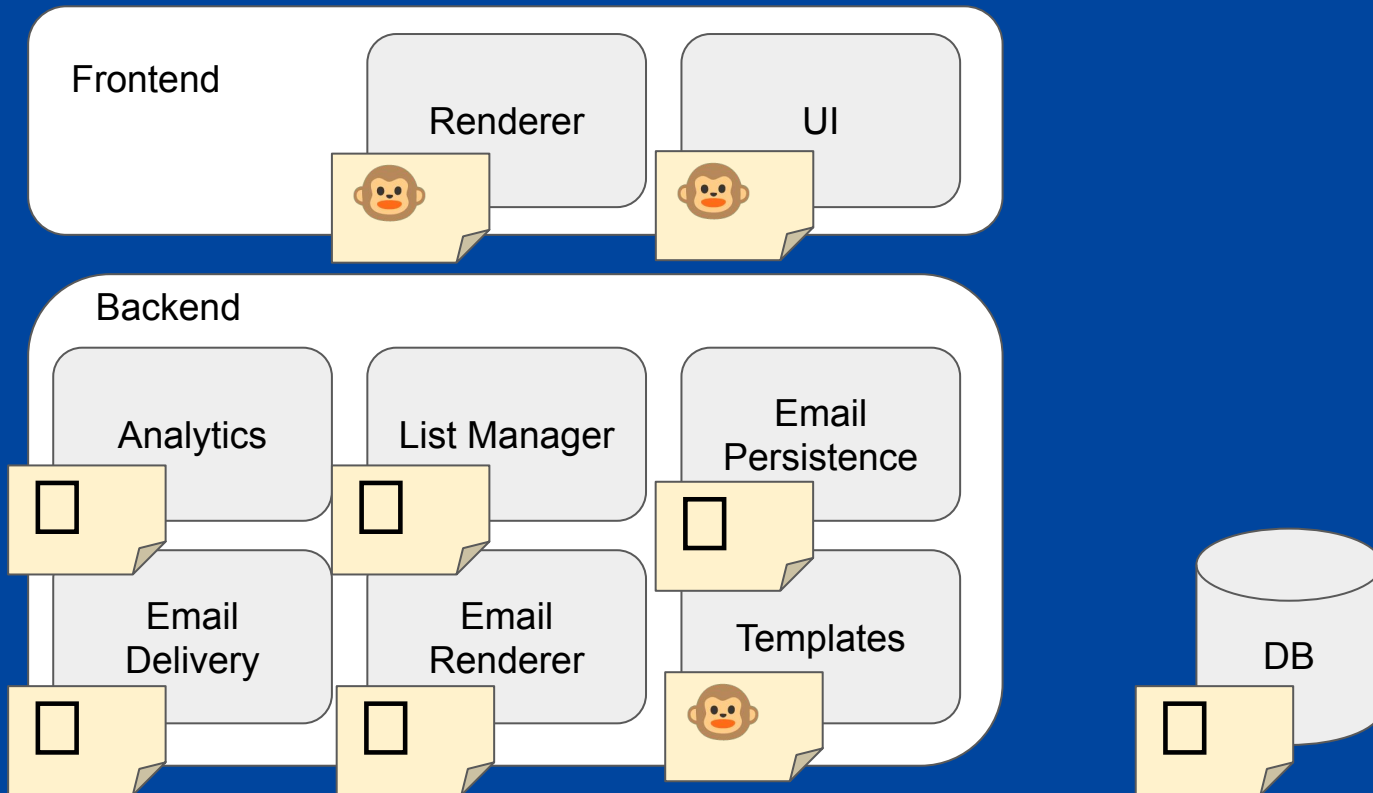
Chart: <https://bettertennessee.com/report-card-dental-health-in-tennessee/say-vs-do/>







# Identify the monkeys and pedestals



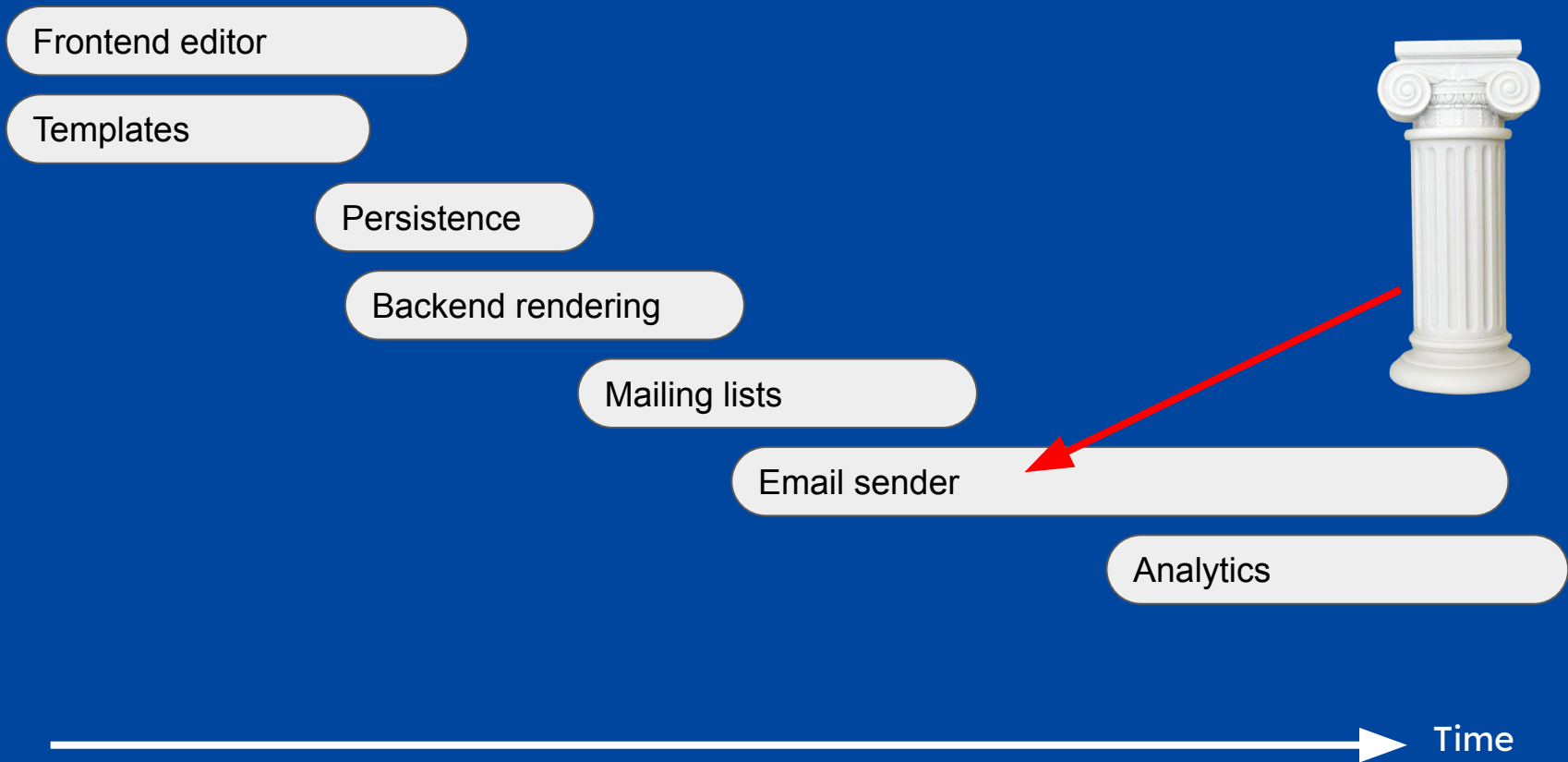
The screenshot displays the Squarespace Campaigns composer interface. The browser address bar shows the URL: <https://newsletters-prod.squarespace.com/config/marketing/campaigns/composer/5d2bd...>. The top navigation bar includes a 'Dashboard' link and tabs for 'Style' and 'Email'. The main canvas shows a newsletter design for 'The Neffs' with the following text elements:

- Header: **The Neffs**
- Text: Just wanted to
- Text: **SAY**
- Text: **THA**
- Text: **NKS**

A right-hand settings panel is open, titled 'Text'. It contains the following options:

- Padding: >
- COLORS
  - Text:  >
  - Background:  >
- GLOBAL STYLES
  - Font Pack: Heavy Sans >
  - Font Sizes: >
  - Link Color:  >
- Personalize your emails
  - Type "\*" to reveal a list of personalization options.

# Project Timeline





# Project Timeline

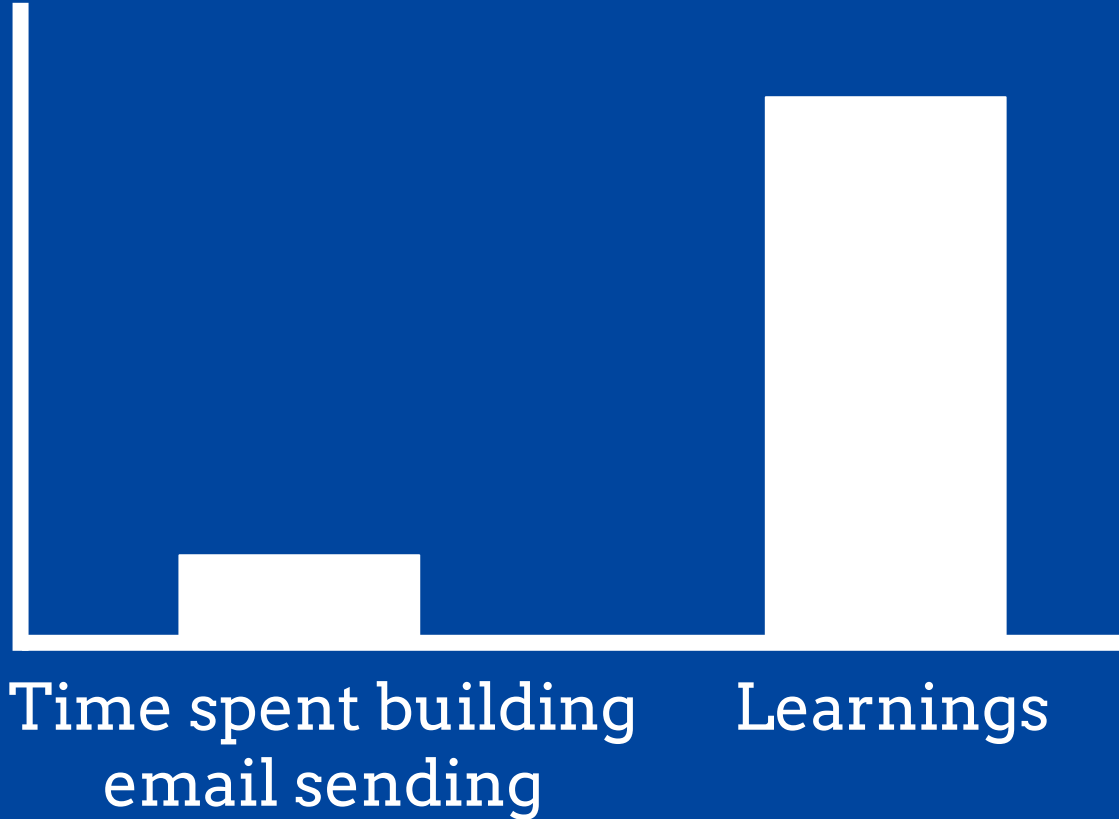






# Good tech debt: Throwaway code

```
sendNewsletter(newsletter) {  
    recipients = getUsersByGroups(newsletter.mailingLists)  
    for (recipient of recipients) {  
        sendEmailToRecipient(newsletter, recipient)  
    }  
}
```





## Throwaway code

Commit to an estimate

Design to throw away

Understand limitations

Tell everyone



# Not everyone can tell the difference





# Good tech debt is intentional

- Tell everyone
- Build to throw away
- Don't cut the wrong corners

# Good tech debt archetypes

- Under-abstracting
- Under-scaling
- Throwaway code

# Good tech debt motivations

- Solve hard problems first
- Think in bets
- You aren't gonna need it — YAGNI!

# References

<https://wiki.c2.com/?WardExplainsDebtMetaphor>

<https://wiki.c2.com/?YouArentGonnaNeedIt>

<https://martinfowler.com/bliki/Yagni.html>

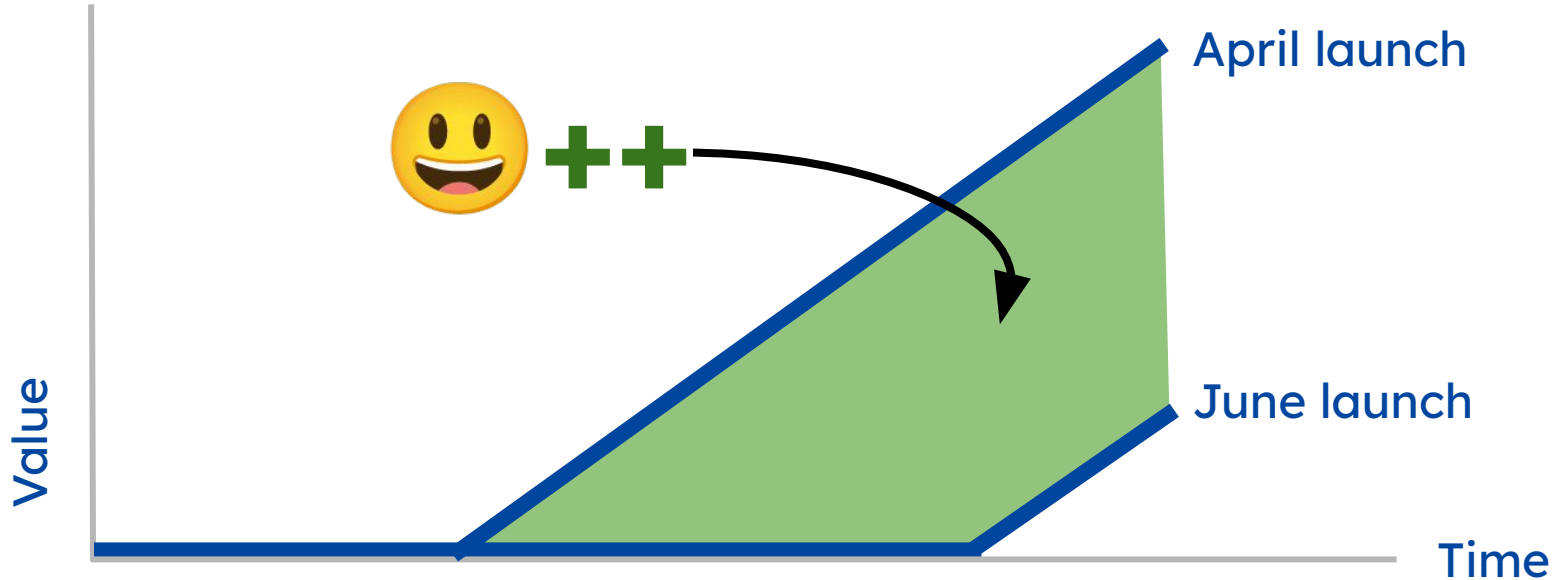
<https://continuousdelivery.com/>

<https://www.indiebound.org/book/9780735216372> (Thinking In Bets)

<https://x.company/blog/posts/tackle-the-monkey-first/>

<https://theleanstartup.com>

# Shipping sooner pays off forever





# Build less to achieve more

**The end | Thanks!**  
<https://jonthornton.com>