

---

# Using Istio/Envoy for Network Request Caching

Zach Arnold, Thing Doer for Ygrene Energy Fund

---

# The section you'll skip on YouTube.

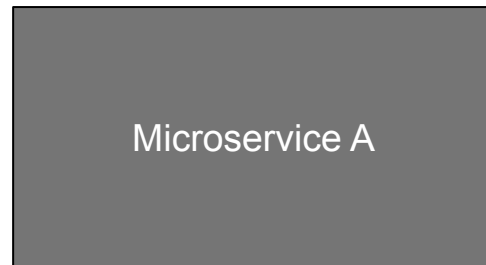
- Ygrene Energy Fund is a PACE Financing provider
  - Means **we love earth** and only finance projects that keep the earth a “thing” in the future
  - Means property owners don't need a line of credit to get financing, they can pay via property tax
  - Means Ygrene is incredibly stable since taxes always get paid (we gon' be here a while)
- PACE is good for Earth, Property Owners and Investors

It's also the word “energy” spelled backwards. So...you know...that's a thing.



# The humble microservice

- Theoretically great with absolutely no drawbacks
  - Loose coupling
  - Independent management
  - All the other stuff that we say we love



(not an artist's rendition of a microservice)

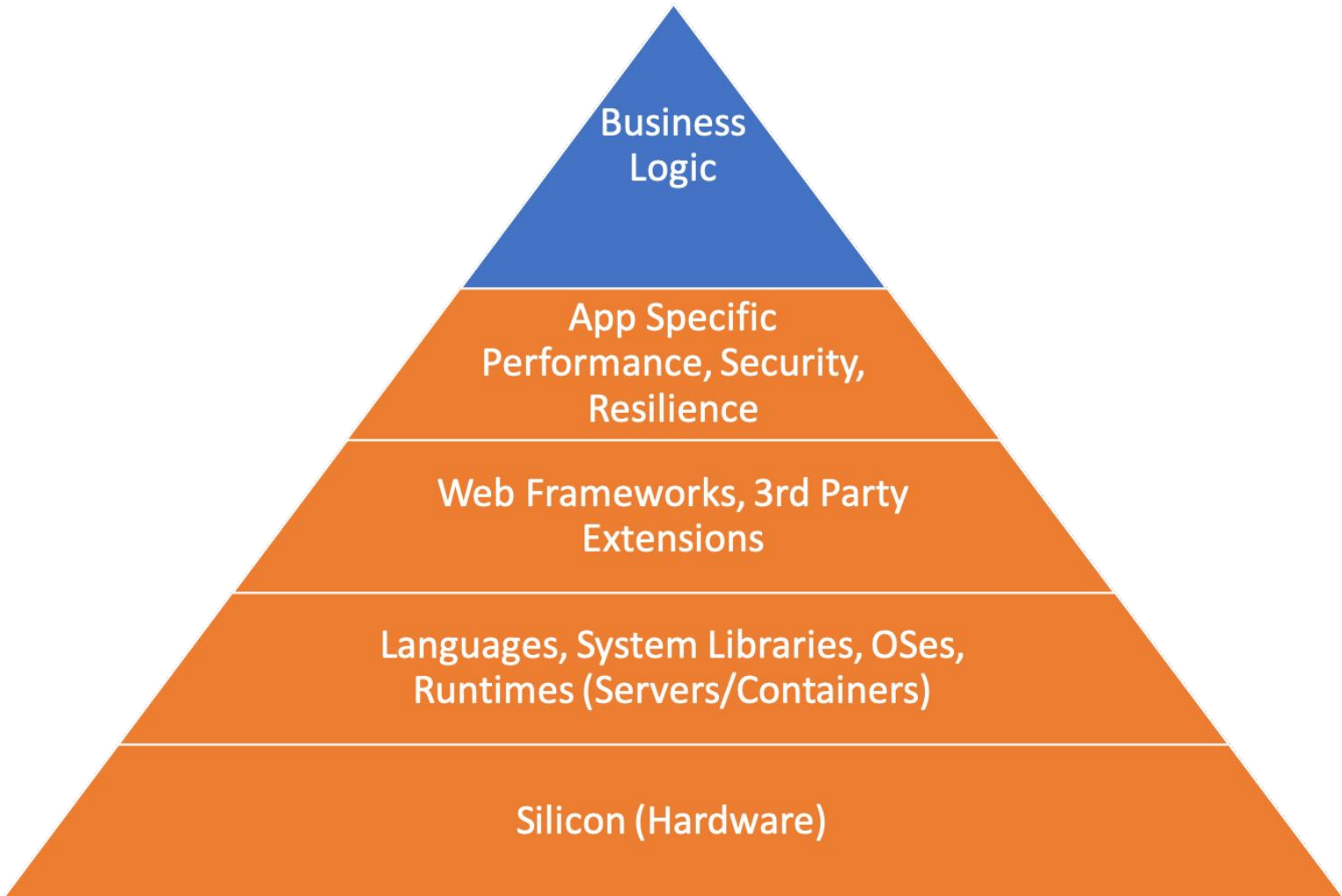
# But...(at least for Ygrene)

- It carries cost
  - Adding network hops
  - Complex debugging scenarios
  - Authz/authn
  - Version coordination
  - Management burden for 3rd party deps
  - ...I'm assuming many others

And we end up with this:



# My understanding of web based services



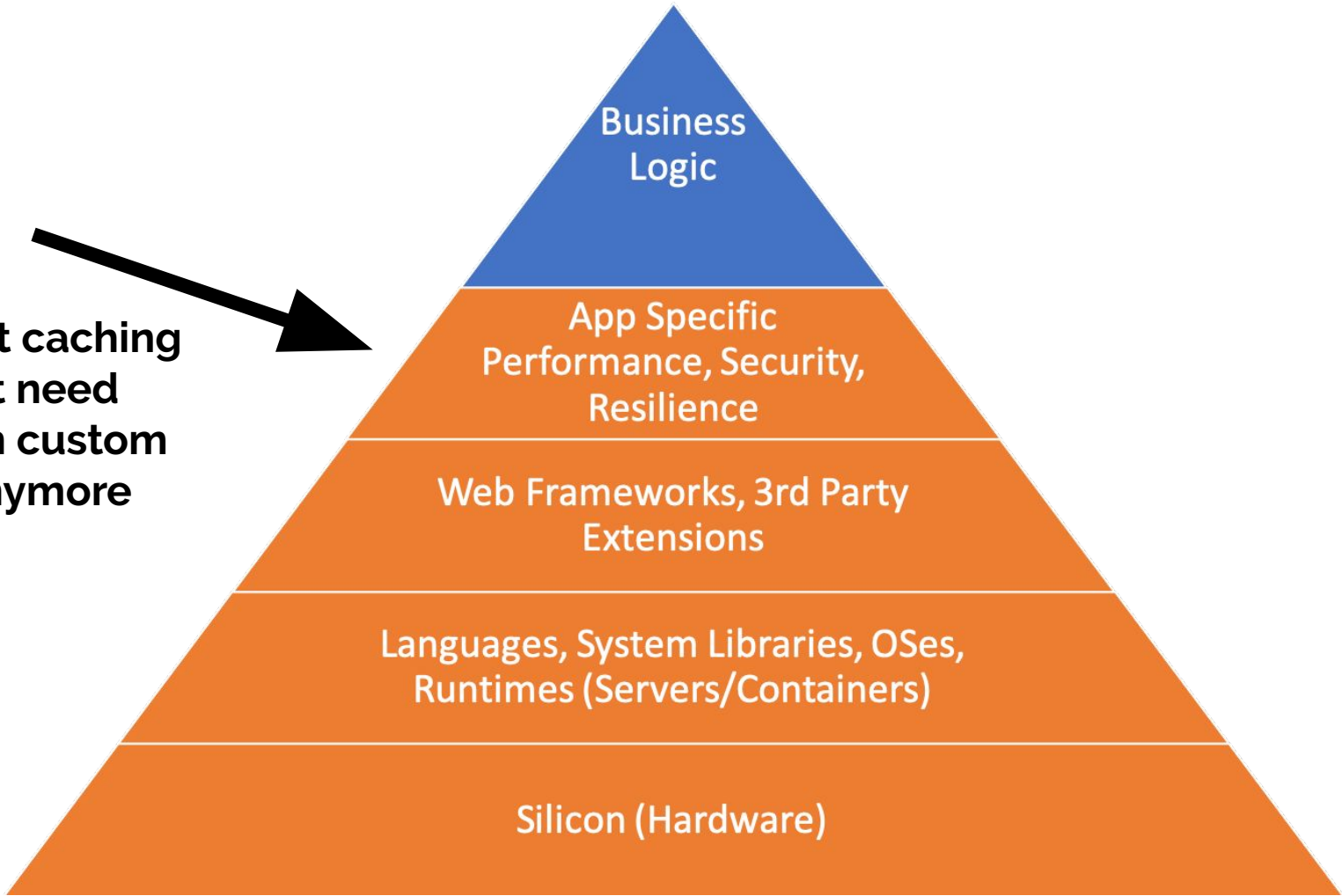
—

**“Ok, so what’s the point?”**



---

**Can a network tool like Istio handle  
this for us?**



**Request caching  
may not need  
our own custom  
logic anymore**

# Right Now Istio Handles:

- Request Routing
- Retries
- Fault Tolerance
- Authentication
- Authorization
- But not request caching (yet)

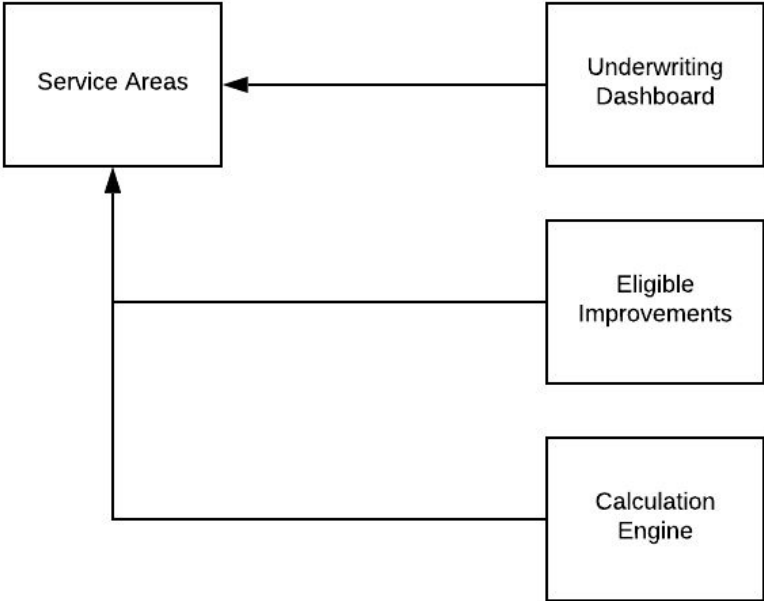
# Why would you care?

- By delegating requests to the network:
  - Cleaner code (focus on the business logic)
  - Smaller services
  - No duplication or added tools like Redis, EVcache, or Memcached

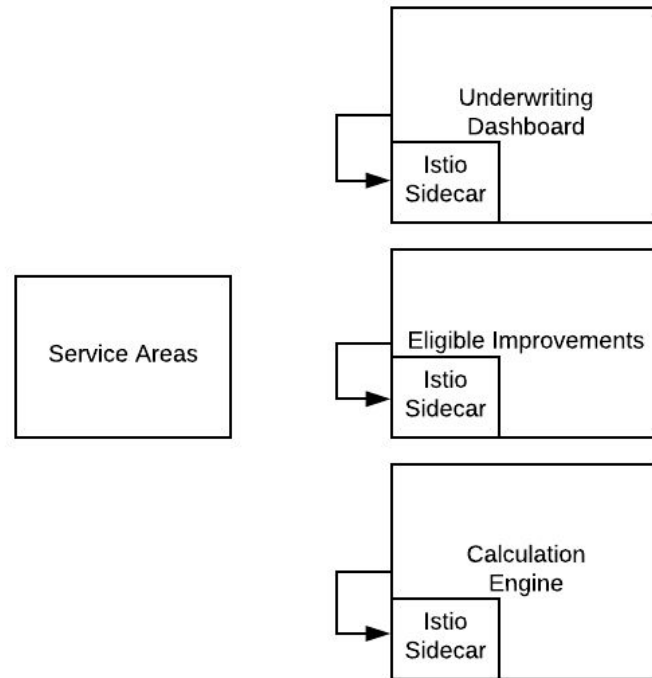
# Ok, how will it work?

- Right now Istio is a harness for Envoy and there is work ongoing around [response filters \(for caching\)](#)
  - <http://bit.ly/envoycaching>
- Once this is completed it will be upstreamed into Istio and configurable using the same Policy DSL that you may or may not already know and love
- It will likely have support for TTLs, L1, L2 caching and warming

# Practical Compelling Use Case



# Practical Compelling Use Case



---

---

# Stay tuned!

Zach Arnold, Thing Doer for Ygrene Energy Fund

---