

Developing Startups for the Azure Cloud

Chad Michel

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Architect / Professional Services Lead

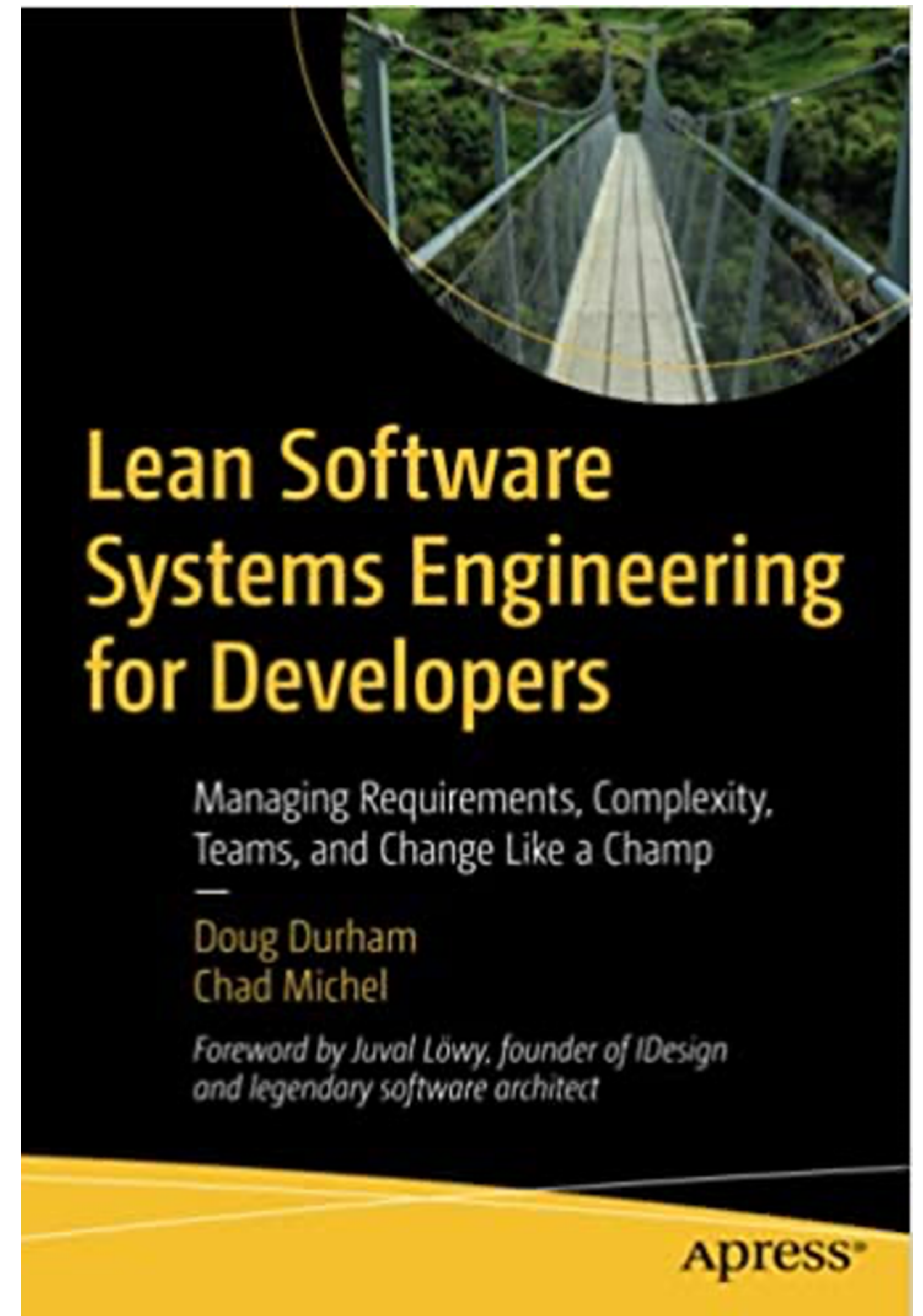
- UNL graduate
- Sr. Software Architect
- Don't Panic Labs
- Beehive
- CDN / eCommerce
- Lifelong Nebraskan
- Wife and 2 kids
- Many startups



Lean Software Systems Engineering for Developers

Managing Requirements, Complexity, Teams, and Change Like a Champ

- Doug Durham
- Chad Michel



Developing Startups for the Azure Cloud

“We learn from failure, not from success.”

Van Helsing

Bram Stroker, Dracula

Startup / Innovation project

Challenges

- Resource constrained
 - Budget
- Minimal specialization in staff
 - Many hats
- Limited customers
 - Hard to get meaningful metrics

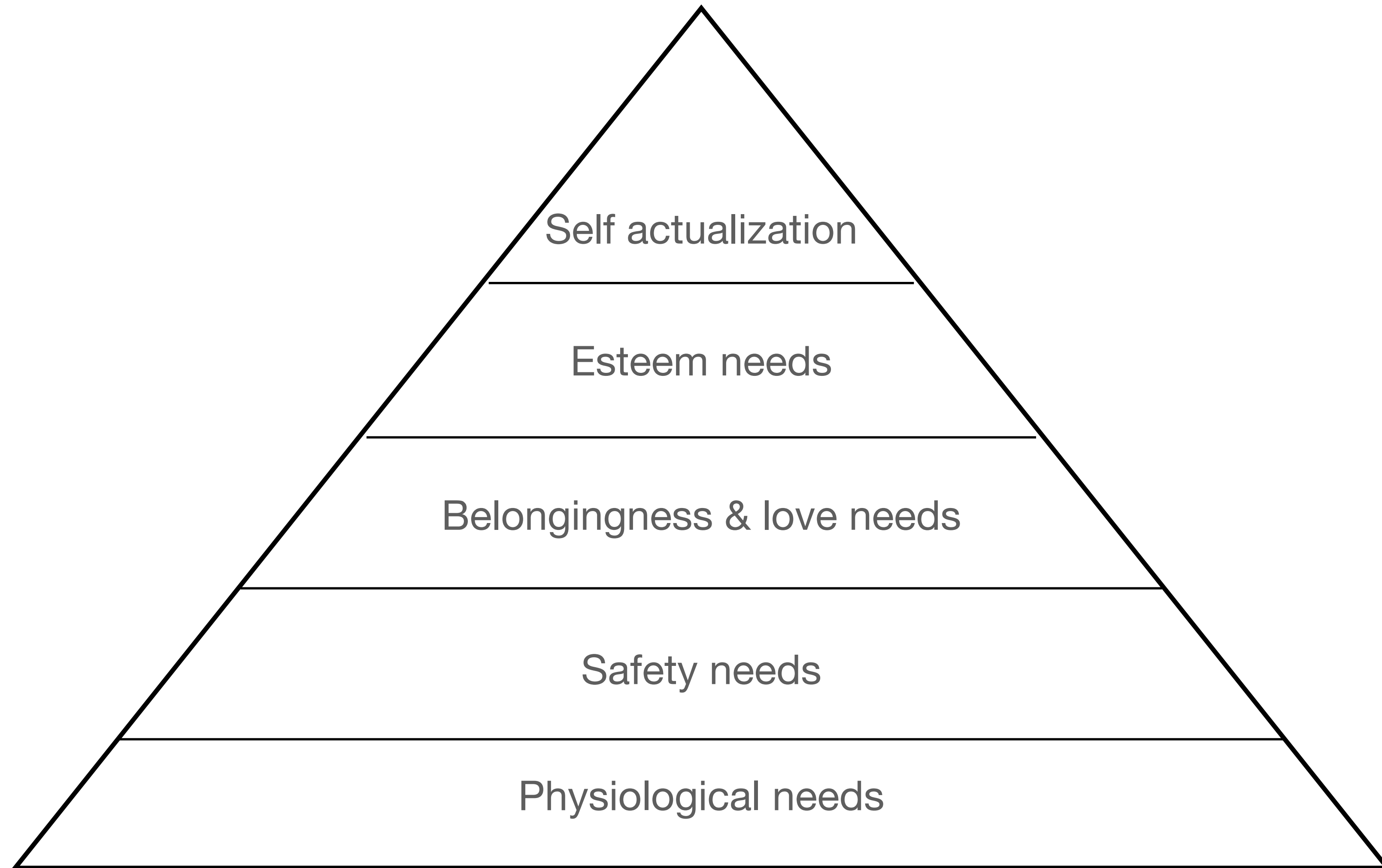
Startup / Innovation project

Advantages

- Focus
 - Only one project
- Less customers
 - Easier to communicate
- Quick launch
 - Releases frequent

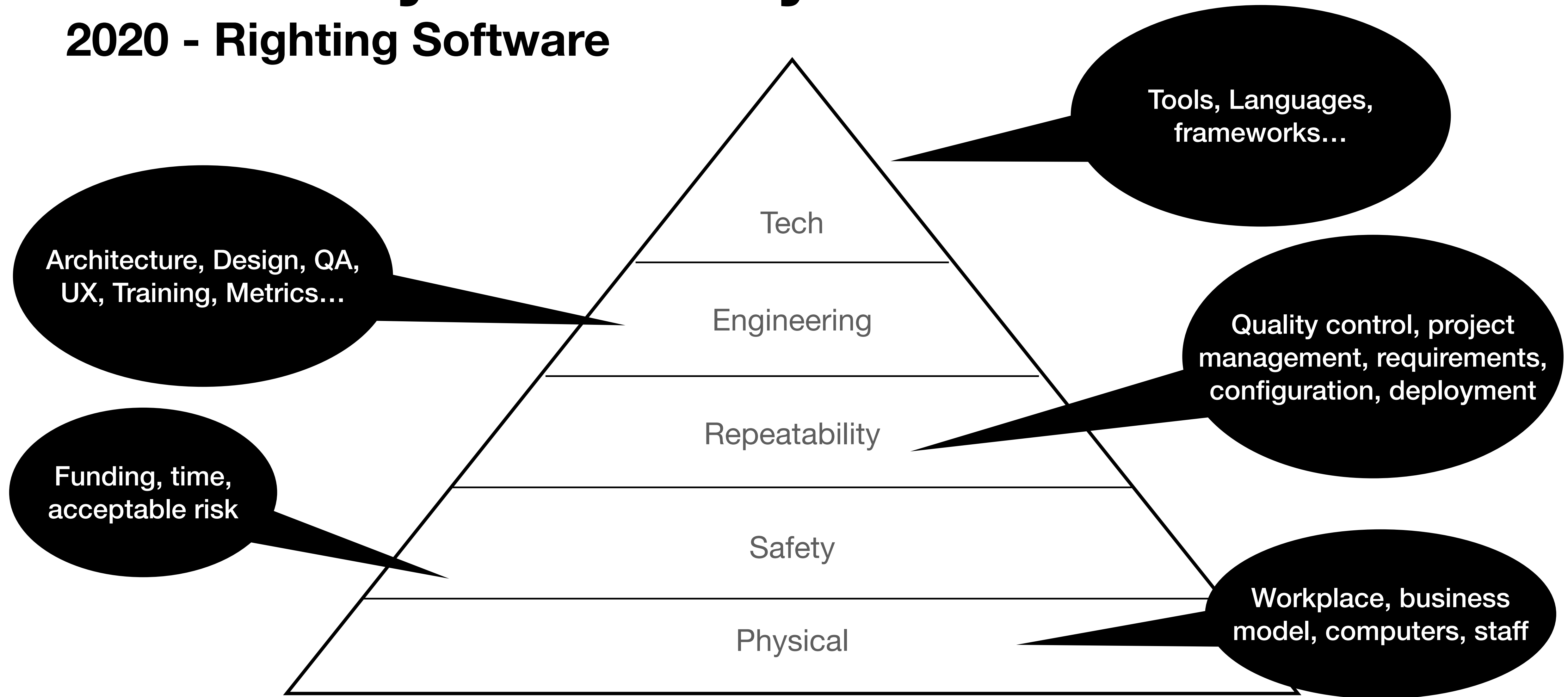
Abraham Maslov - Hierarchy of Needs

1943



Juval Lowy - Hierarchy of Needs

2020 - Righting Software



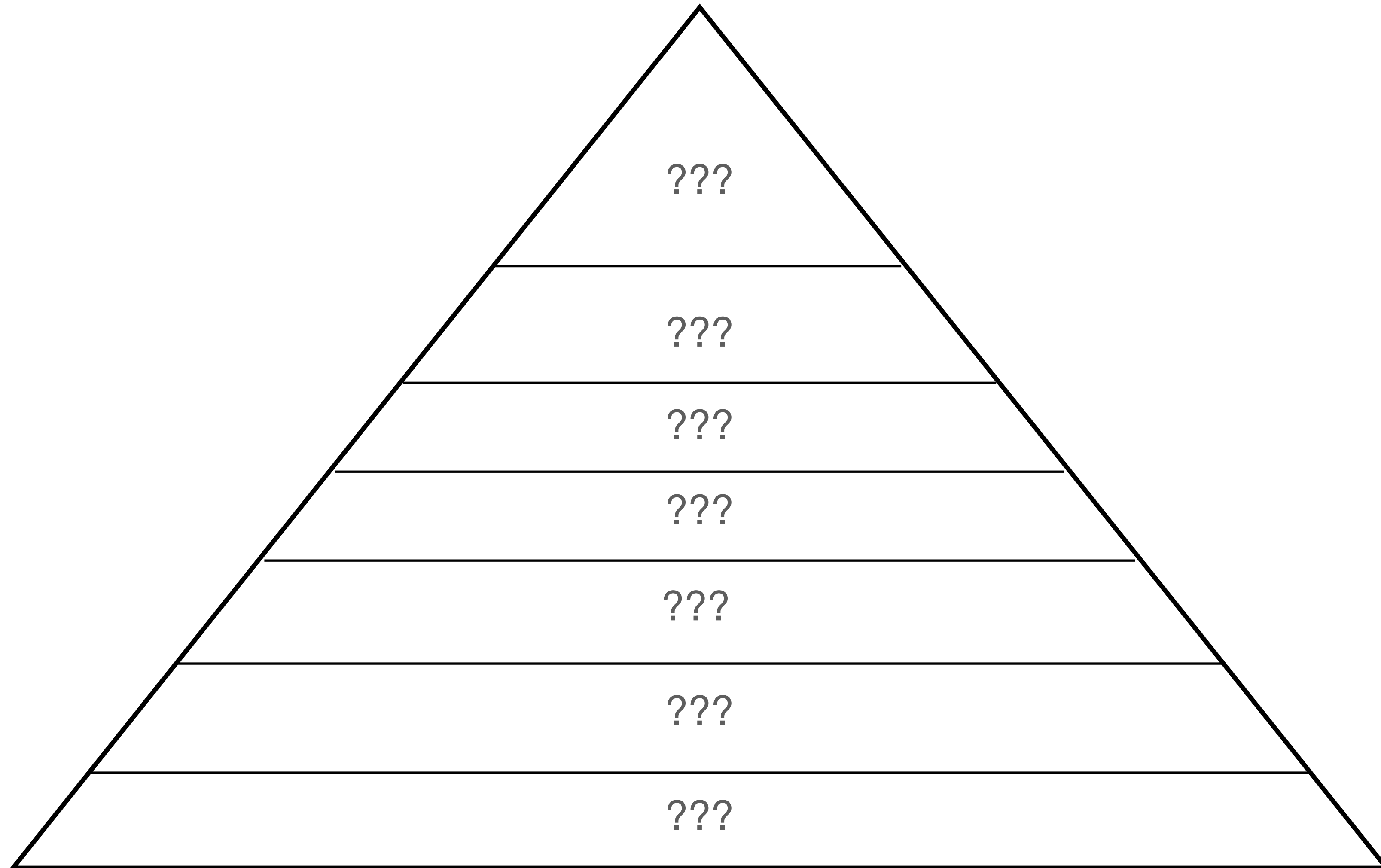
Cloud Needs

- Varies a lot based upon team
- Software development vs Software Integration
- Low code vs build it all
- Varies by software needs
 - Forms over data

Cloud Needs - Assumption for activity

- Development team
- Building software to run natively in the cloud

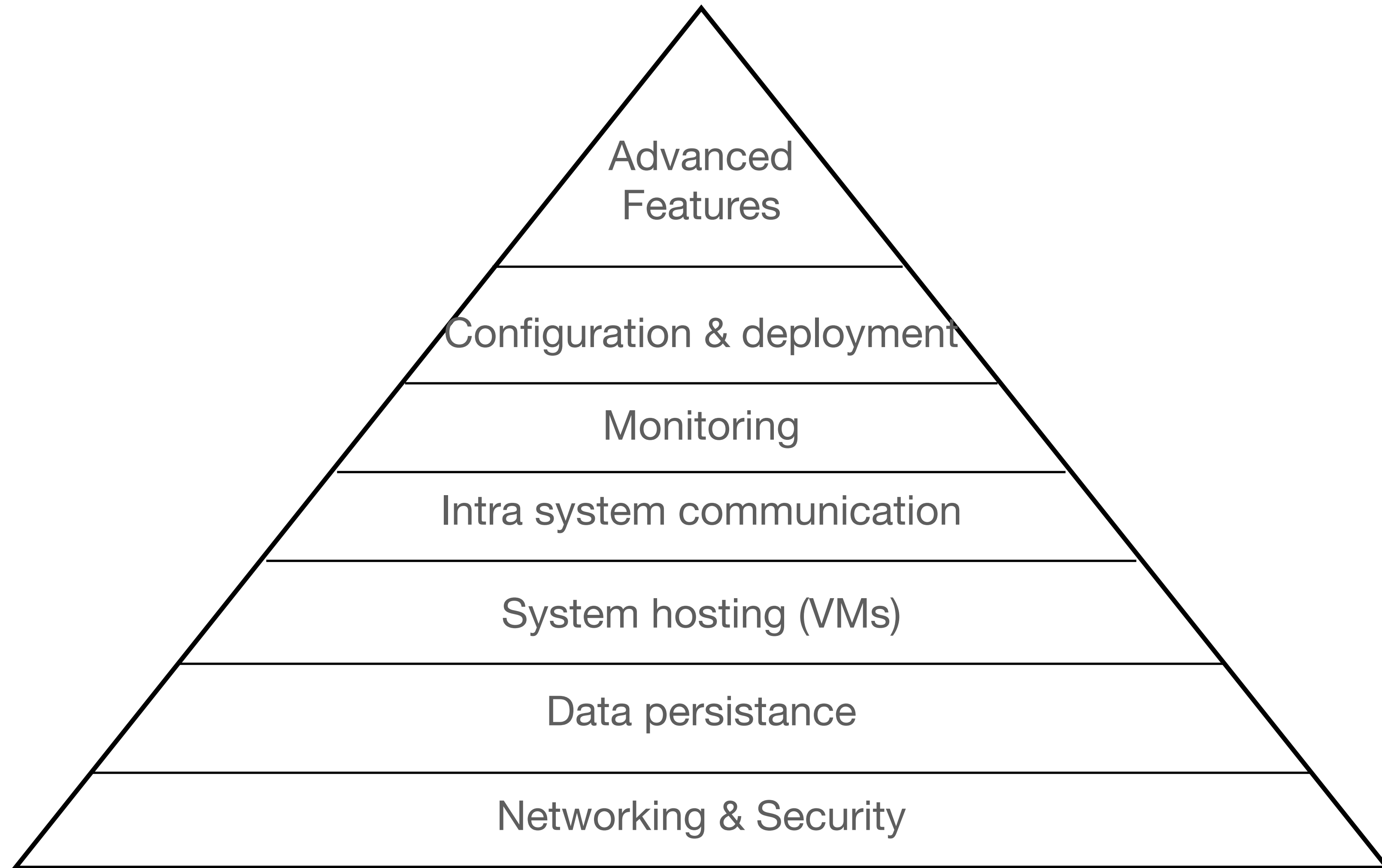
What do you need from a cloud provider?



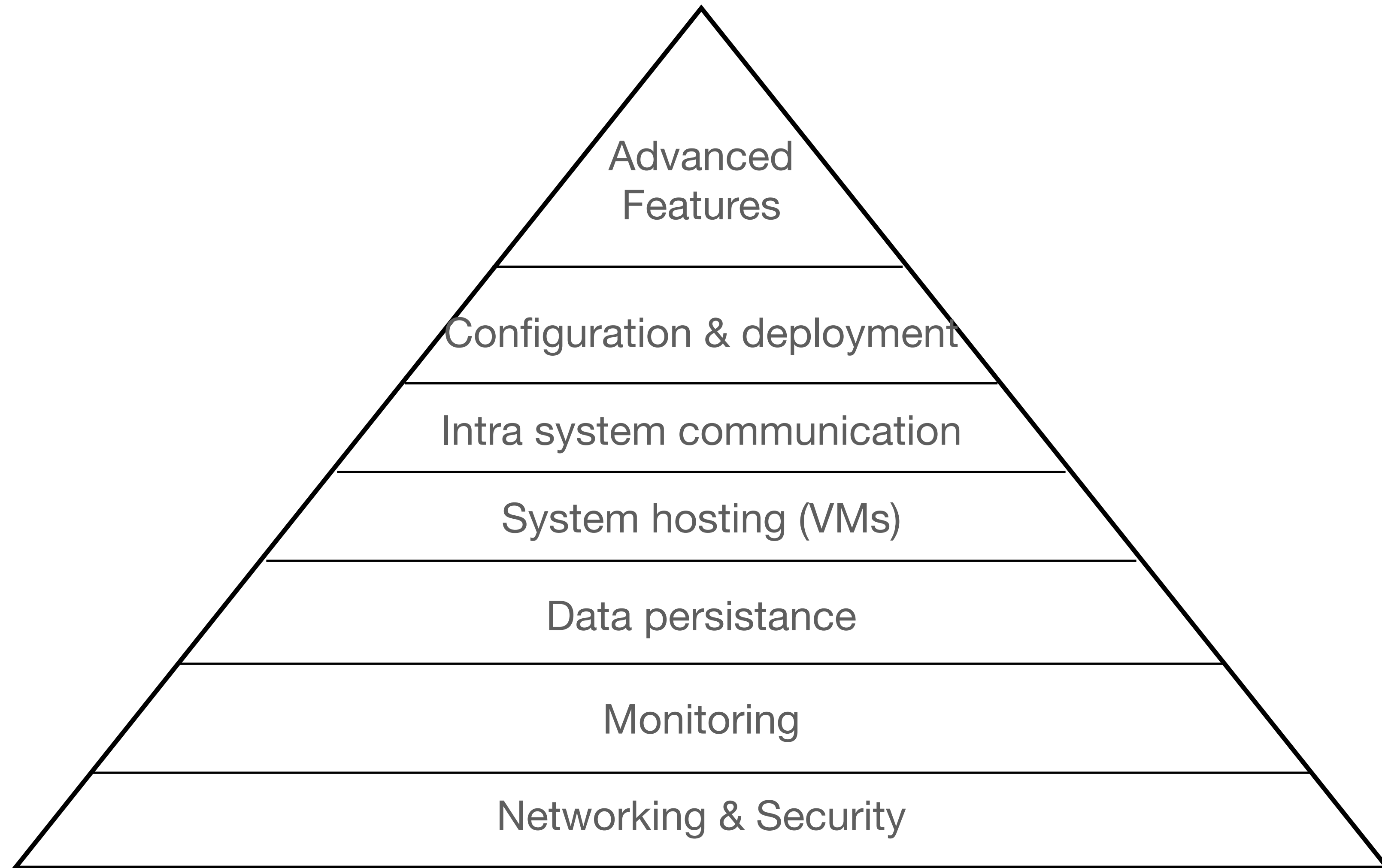
What do you need from a cloud provider?

- Security
- Notifications
- Networking
- Data persistence
- Intra system communication (queues)
- Configuration management
- Deployment management
- Video hosting
- Monitoring
- Hosting / VMs
- Web sockets

What do you need from a cloud provider?



What do you need from a cloud provider?



Azure Cloud and your needs

Startup mindset

- Networking and Security
- Monitoring
- Data Persistence
- System Hosting
- Intra system communication
- Configuration and Deployment
- Advanced Features

Networking and Security

- Application Gateway
- DDos Protection
- Load Balancer
- CDN
- VPN
- DNS
- Azure Frontdoor
- Key Vault
- Traffic Manager

Networking and Security

Startup Focus

- Application Gateway
- DDos Protection
- Load Balancer
- **CDN**
- VPN
- DNS
- **Azure Frontdoor**
- **Key Vault**
- Traffic Manager

Monitoring

- Application Insights

Data Persistence

- Blob storage
- Table storage
- SQL Azure
- PostgreSQL
- MySQL
- Cosmos DB

Data Persistence

Startup Focused

- **Blob storage**
- Table storage
- **SQL Azure**
- PostgreSQL
- MySQL
- *Cosmos DB*

Compute / System Hosting

- VMs
- App Services
- Function Apps

Compute / System Hosting

Startup Focus

- VMs
- App Services
- **Function Apps**

Intra system communication

- Storage Queue
- Service Bus
- Logic Apps

Intra system communication

Startup Focus

- **Storage Queue**
- **Service Bus**
- Logic Apps

Configuration and Deployment

- Azure Dev Ops
- Github
-

Configuration and Deployment

- Azure Dev Ops
- Github

Configuration and Deployment

Startup Focus

- **Azure Dev Ops**
- Github
-

Advanced Features

- Video
- Notifications
-

Advanced Features

Start Focus

- Video
- Notifications
- **Might have to use other service providers**
 - **AWS - SNS / SES**
 - **Twilio / Sendgrid**
 - **Vimeo**

Designing for the Azure Cloud

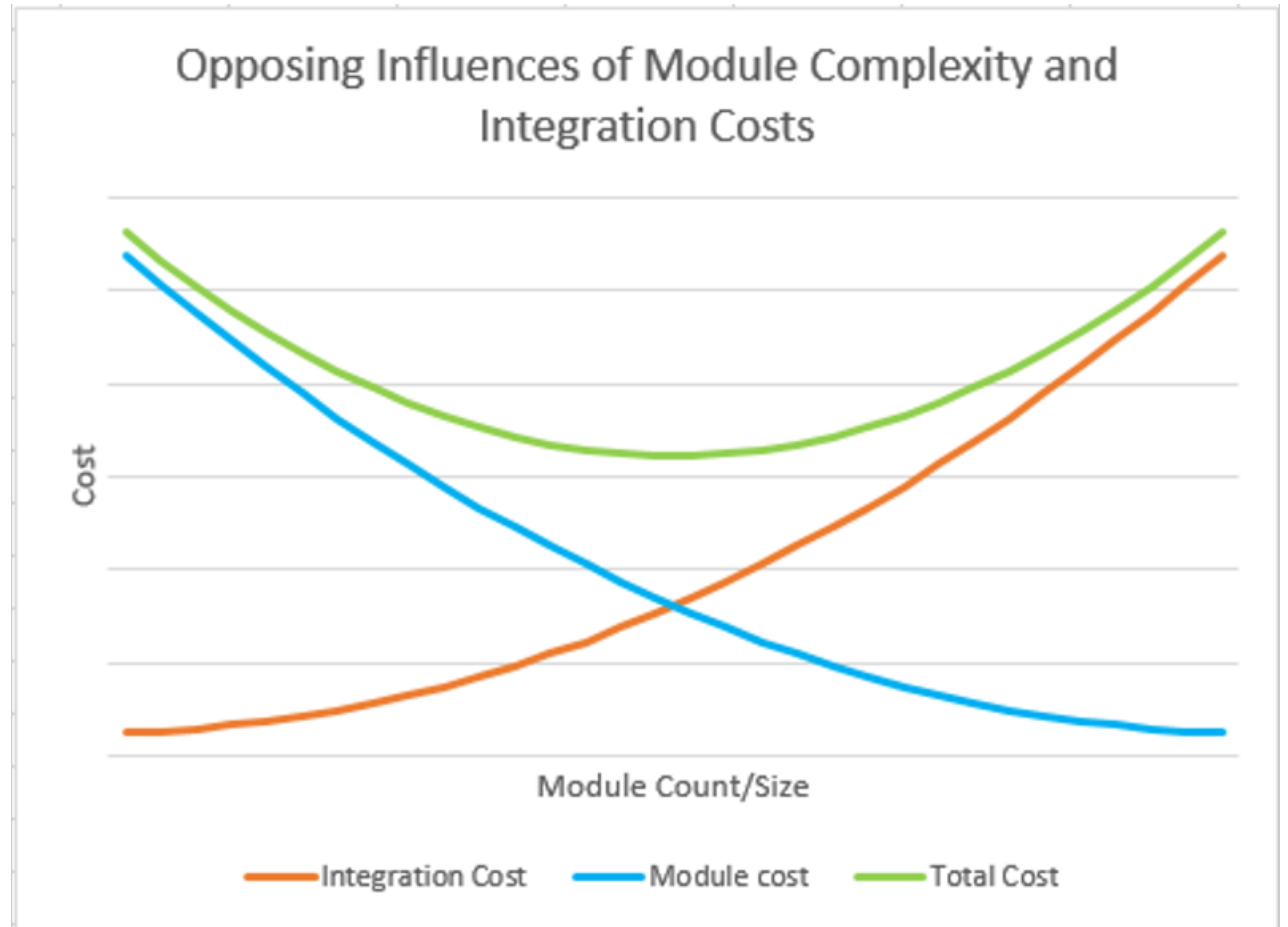
- More important to have a good system design
- Cloud components don't matter as much
- Lean on PaaS if you can
 - Makes it harder to move to other platforms

Think Independent

- Independent services that can evolve without drastically affecting other services
- Design for change

Balance

- More services = more to deploy
- More services = more to integrate



Balance

Startup Focus

- Build layers / services in your code
- Deploy more monolithic for MVP
 - Break apart as necessary
 - One function deployment instead of 4

Startup / Innovation project

Challenges

- Resource constrained —> Use per request services (Azure Functions)
 - Budget
- Minimal specialization in staff —> Minimize technology
 - Many hats
- Limited customers —> Deploy quickly
 - Hard to get meaningful metrics

Startup / Innovation project

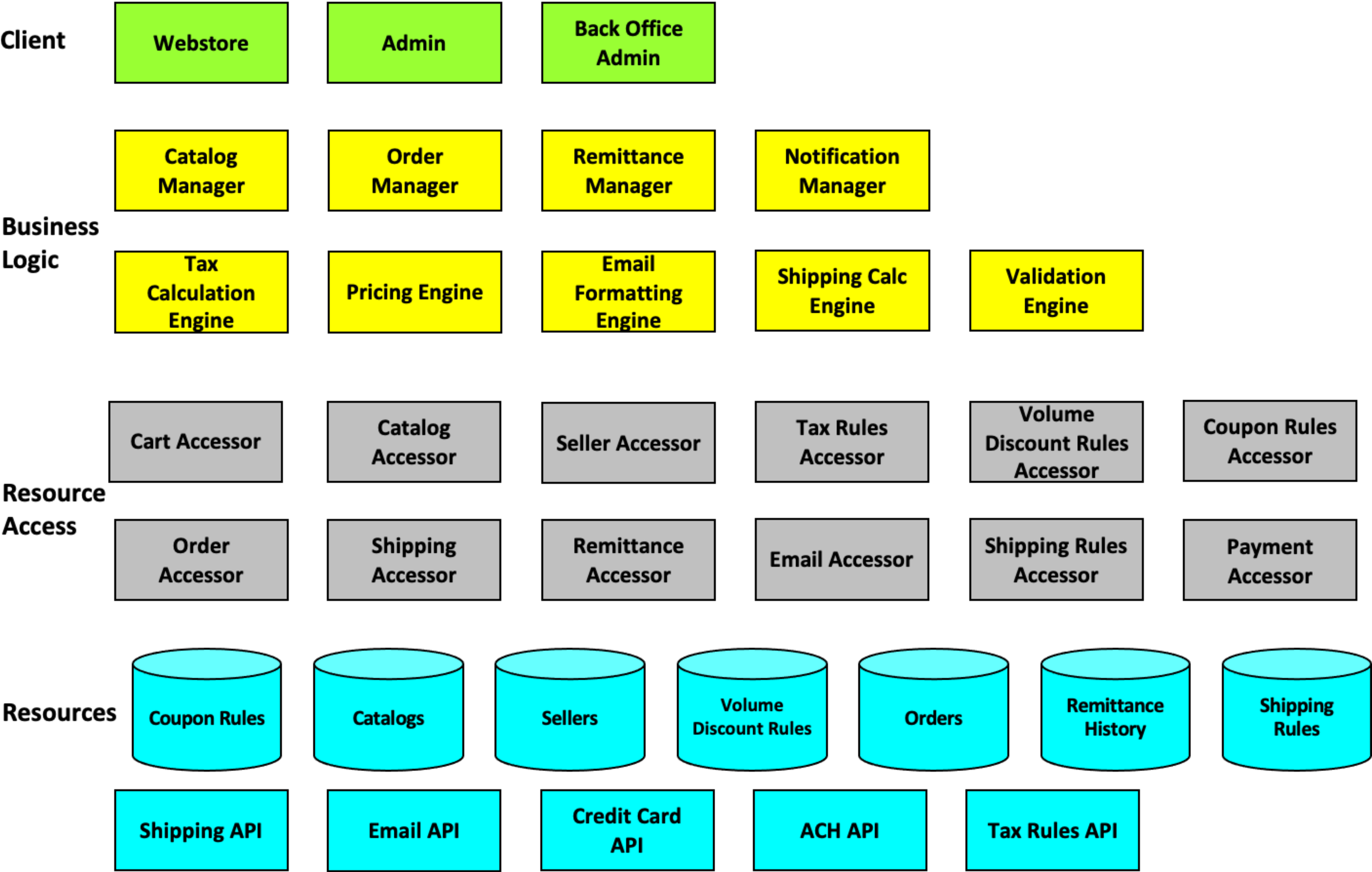
Advantages

- Focus —> Build what you need for MVP
 - Only one project
- Less customers —> Communicate early and often with customers
 - Easier to communicate
- Quick launch —> Get feedback. Look at telemetry
 - Releases frequent

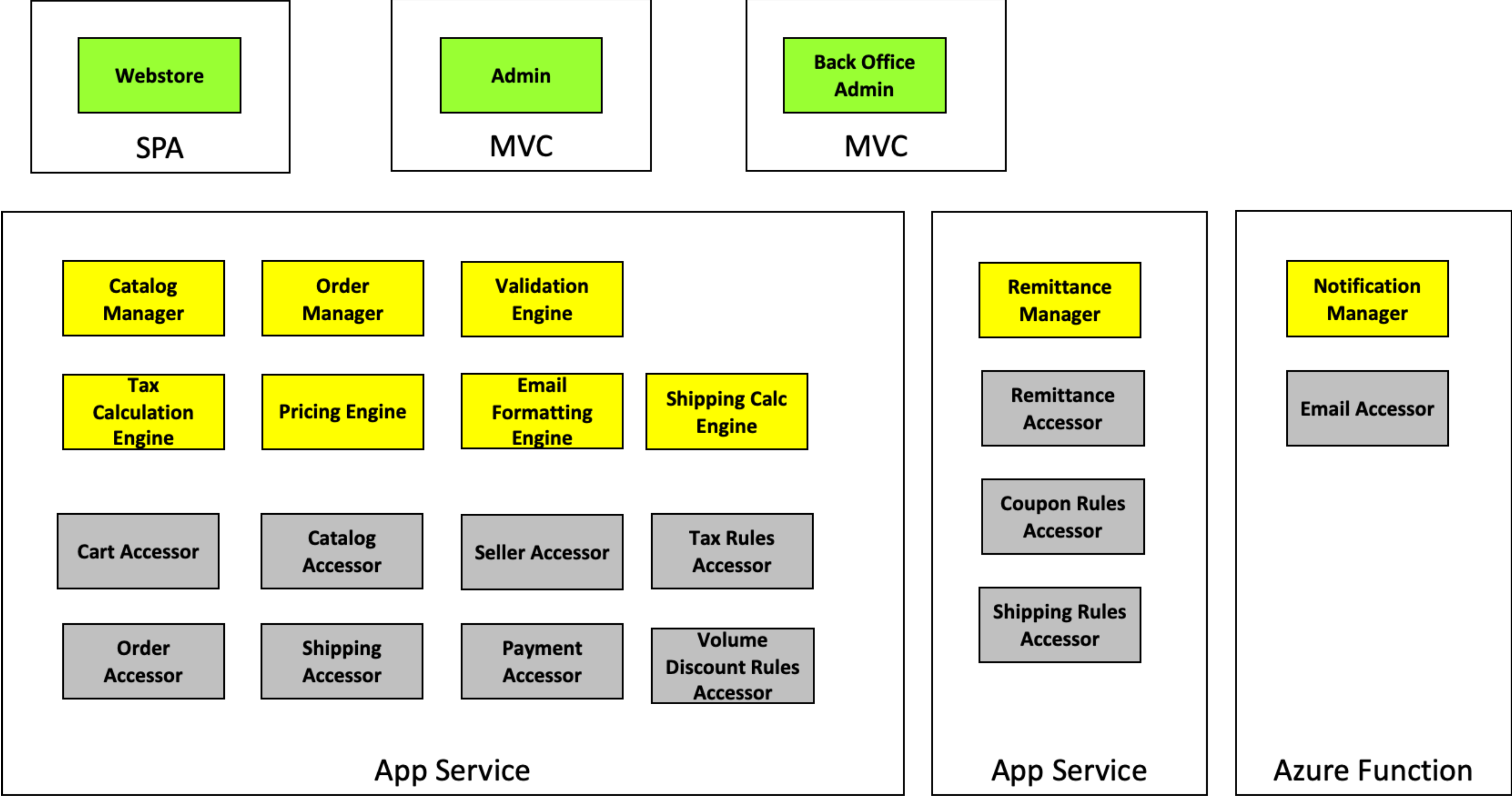
An example - eCommerce

- Startup change our eCommerce focus and hosting in Azure

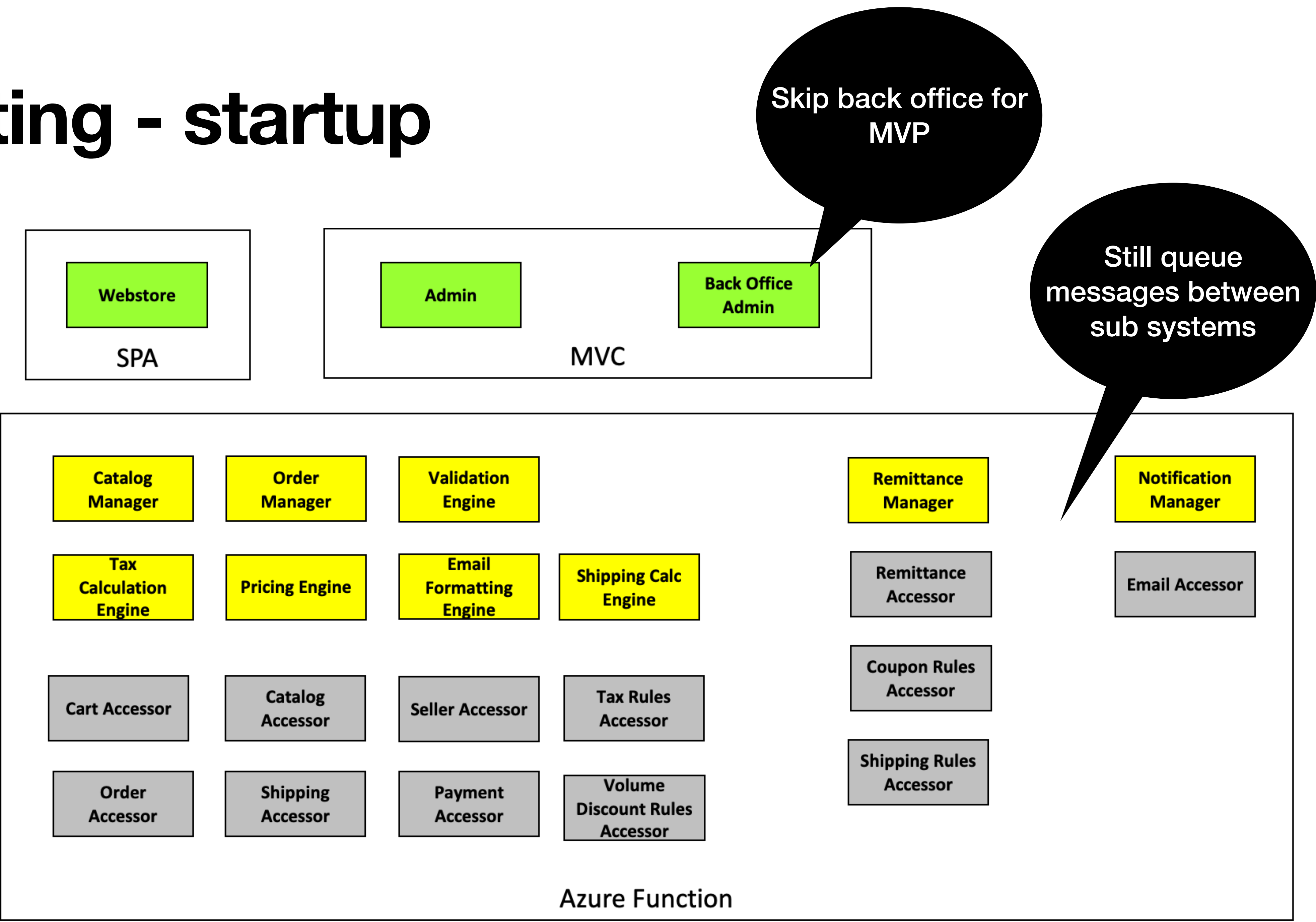
Services



Hosting - non startup



Hosting - startup



Final Notes

- Lean but engineered
- Fast but extendable

Thank you

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<https://github.com/chadmichel/HDC2021>