ORY / summit-22

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Building Applications in the Cloud

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01

What are my options

- Custom Code
- Third-Party Code
  - Commercial Code
  - Open Source
- SaaS

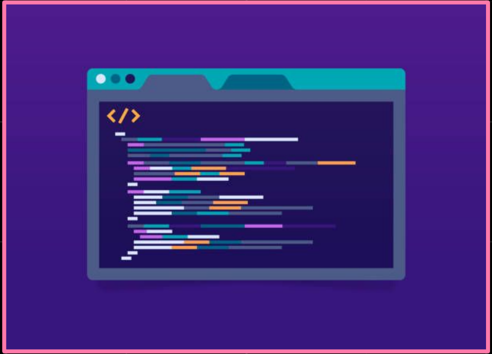
Custom and Third-Party code is self-hosted

SaaS is hosted by SaaS provider

02

Custom Code

- Every line of code is a liability
- What the code does for you is an asset
- Does the expected financial return from the custom code justify the cost to build and maintain?

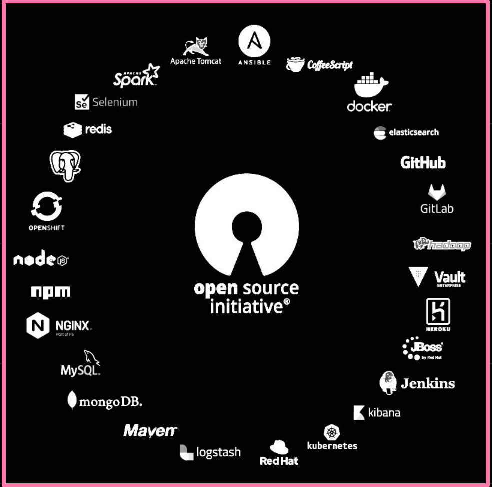


Commercial Code

- Purchase price and maintenance cost
- Responsiveness of provider to support needs
- In-house staff requirements
    - Training
    - Vendor relationship
    - Release tracking and integration
    - Refactor in-house code as commercial code is updated and interfaces change

04 Open Source

- Rich selection of functions and tools
- Heavily used and well supported OSS can equal or surpass quality of Commercial Code
- Pay CLOSE attention to License Terms. Avoid GPL3 unless you have good (expensive) Attornies!
- Use automated security tools to keep track of versions and CVEs, and update/patch quickly.



05

Saas

- Outsourced functionality
- Best-of-breed providers deliver high quality, well-maintained, secure services
- Look for SaaS providers whose corporate reputation is on the line
- Verify compliance certifications!
- Understand pricing and tiering to avoid unpleasant surprises
- Quality of API documentation is a key indicator.

06

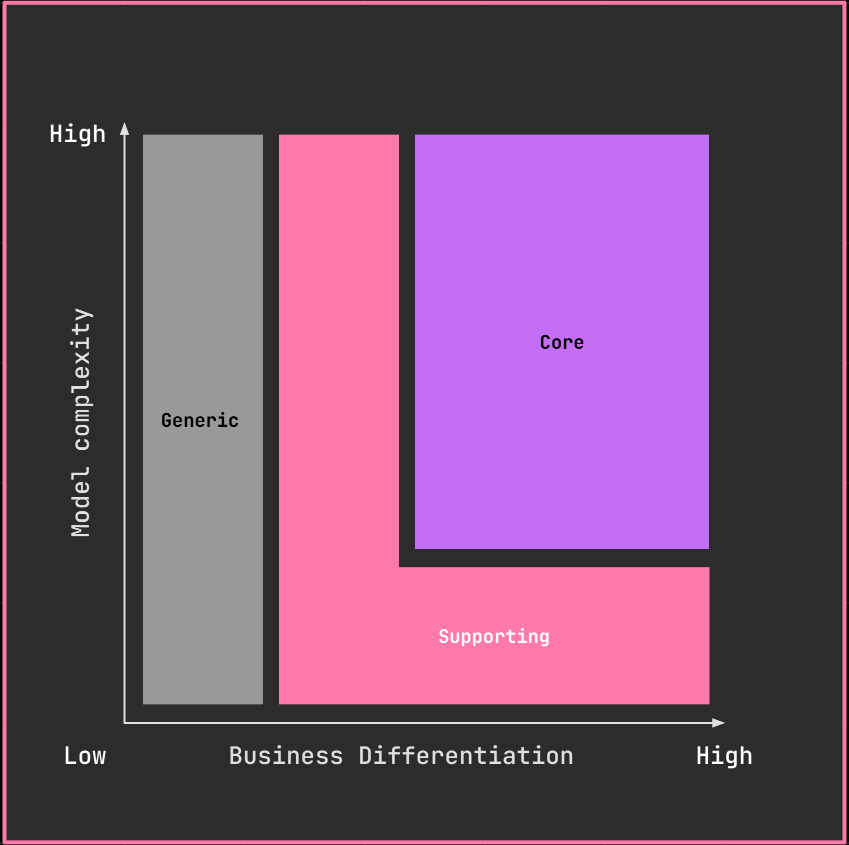
Domain-Driven Design

A useful framework for making decisions on how to source software

Three subdomains:

- Core - What makes your product special and makes you money
- Supporting - Needed to support core functionality
- Generic - Needed, but not specific to your product

Context distillation



08

Core

- Software that directly makes money for your company
- Custom code for unique features and functions
- Engineering resources must be explicitly allocated to ongoing code maintenance or tech debt will kill the product
- Build/CI system must have aggressive security scanning and testing, as there is no outside review of good security practices

09

Supporting

- Software that enables your core software to function well
- Examples
  - Database (Oracle, CockroachDB, Postgres)
- Third-Party Code can serve well here, both Open Source and Commercial
  - Commercial costs more, but provider is responsible for maintenance
  - OSS costs less up front, but cost for maintenance is problematic
  - Managed services also an option (RDS, Aurora, BigTable)
- Engineering resources must be explicitly allocated to maintaining the supporting code, and keeping up with revisions/upgrades/patches
- Strong relationships with the creators/maintainers of the code is important

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Generic

- Software that is common across multiple functions

- Examples
  - Operating Systems
  - CI/CD
  - Authentication
  - Security

- SaaS can be particularly valuable for Generic functions

- SaaS provider handles patching/updating/securing

- Ensure that the SaaS provider’s survival depends on delivering high-quality, secure systems!

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How to choose?

Opportunity cost is the forgone benefit that would have been derived from an option not chosen.

To properly evaluate opportunity costs, the costs and benefits of every option available must be considered and weighed against the others.

Key Aspects of Opportunity Cost for Software

1. Build Time
2. Customization
3. Maintenance
4. Scalability
5. Cost - soft cost and hard cost
6. Security
7. Customer Support

Opportunity Cost Matrix

	Custom	Commercial	OSS	SaaS
Build Time	High	Low	Med	Low
Customization	High	Low	Med	Low
Maintenance	High	Med	Med	Low
Scalability	High	Med	High	Low
Cost-Hard	Low	High	Low	Med
Cost-Soft	High	Med	Med	Low
Security	High	Med	High	Low
Cust Support	High	Med	High	Med

Summary

- Core: Custom Code or carefully selected OSS
- Supporting: Commercial, OSS, or SaaS
- Generic: SaaS