

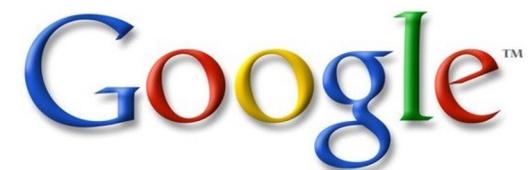
Engineering Your Organization: Services, Platforms, and Communities

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Background



STITCH FIX™

wework

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All organizations are wrong,
but some are useful.

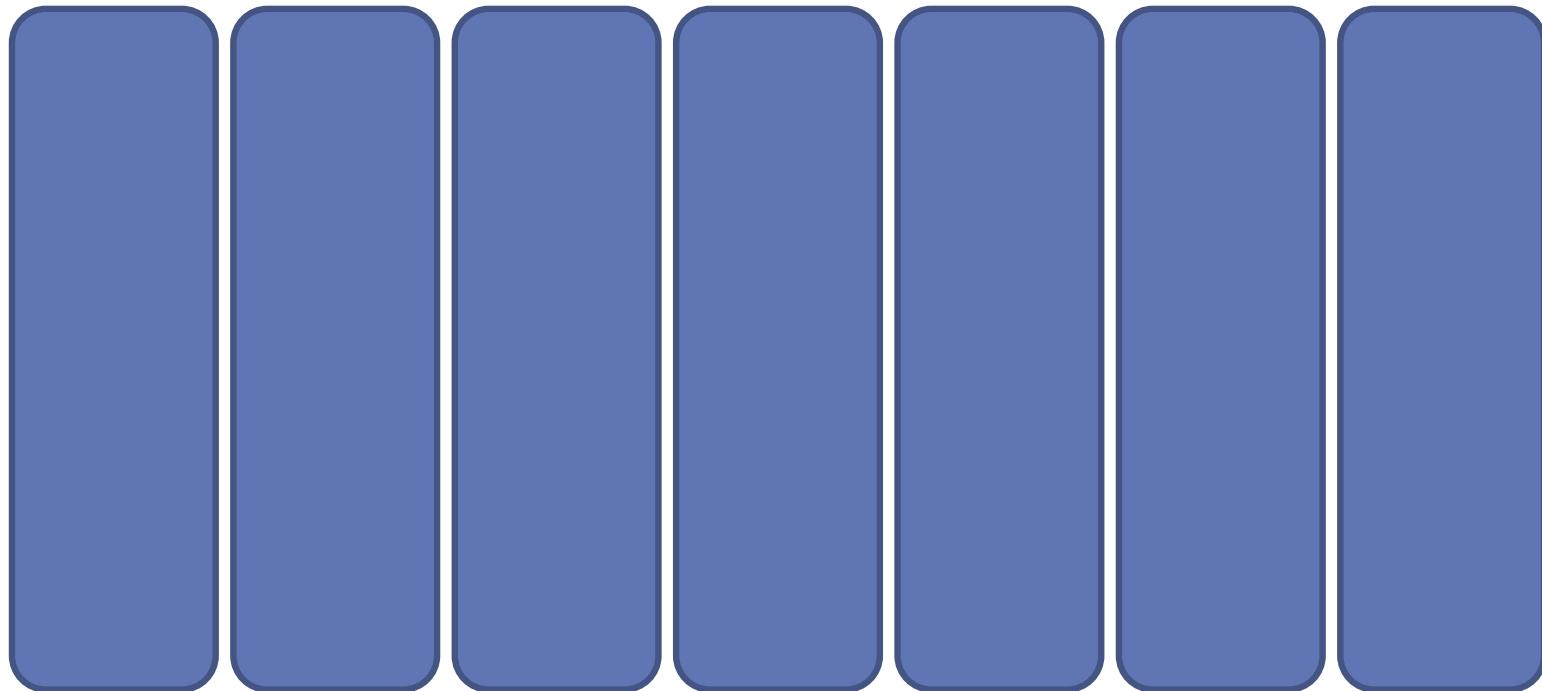
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Organizational Goals

- Sustainably deliver value
- Effectively leverage people, teams, and technology
- Continuously improve and adapt

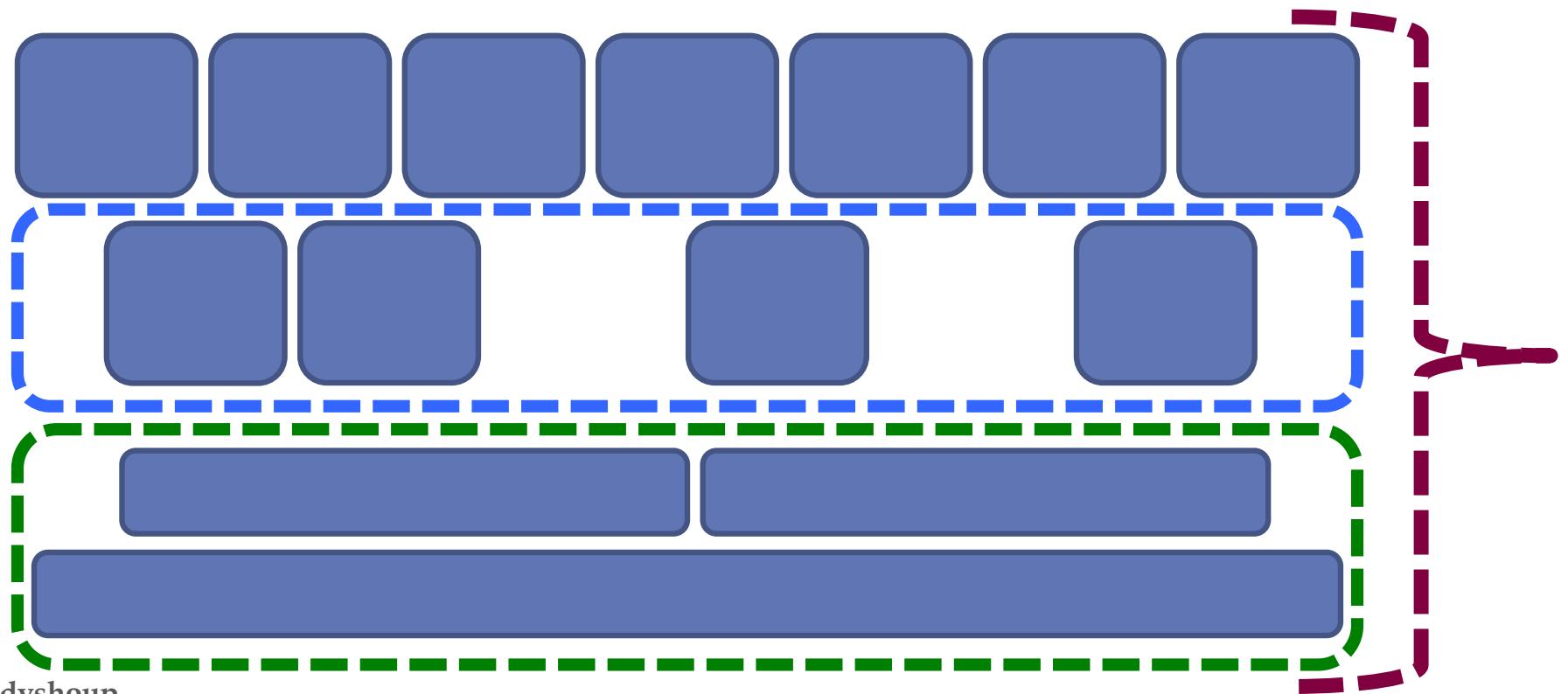
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Specialization and Sharing



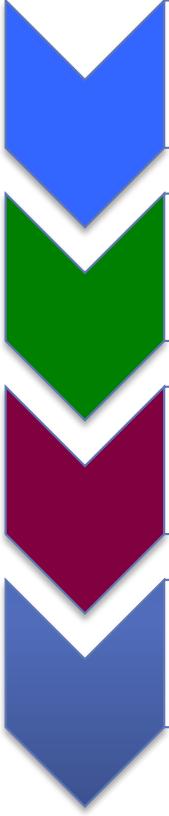
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Specialization and Sharing



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Engineering the Organization



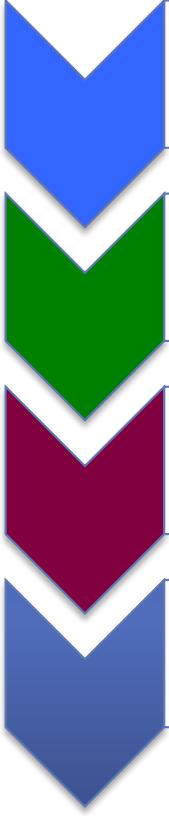
- Services

- Platforms

- Communities

- Leadership

Engineering the Organization



- Services

- Platforms

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- Leadership

Business Alignment



*<Business
Domain>*

- Aligned around a business problem
- Clear goals and metrics ...
 - ... that matter to customers!

Full-Stack Teams



Service Organization

- One domain: One team: One / few service(s)
 - Organization \leftarrow reflects \rightarrow Architecture (“Conway’s Law”)
- Team can independently design, develop, deploy, operate its service(s)
- Team owns its service(s) end to end, cradle to grave

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Service Provider

- Meet the needs of the customers ...
 - Functionality
 - Quality
 - Performance
 - Stability and Reliability
 - Constant improvement over time
- ... at minimum cost and effort
 - Leverage common tools and infrastructure
 - Leverage other services
 - Automate building, deploying, and operating the service
 - Optimize for efficient use of resources

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Service Discipline

- Vendor-Customer Relationship
 - Service provider team is a vendor; consumer teams are customers
 - Service is useful only to the extent that it provides value to customers
- Choose to Use
 - Customer team can choose to use the service or not
 - Service must be *strictly better* than any alternatives of build, buy, borrow

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Service Evolution

- Variation and Natural Selection
 - Create / extract new services when needed to solve a problem
 - Services justify their continued existence through usage
 - Deprecate services when they are no longer used
- Teams grow and divide over time
 - Teams and services split like “cellular mitosis”

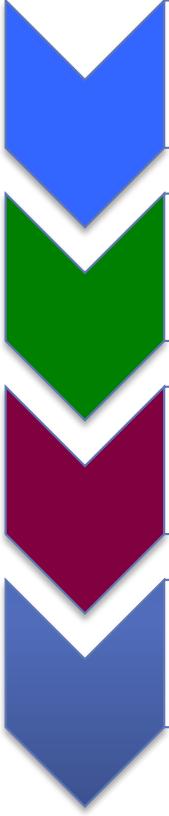
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“Every service at Google is
either deprecated or not
ready yet.”

-- Google engineering proverb

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Engineering the Organization



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Common Platform

- Shared Infrastructure
 - Compute and storage
 - Databases
 - Event system
- Developer Experience
 - Source control
 - Development and testing environments
 - Continuous Delivery pipelines
- Common Capabilities
 - Authentication
 - Secrets management
 - Observability
 - Alerting
- Standard Frameworks
 - Service “chassis”
 - Communication protocols and data formats

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Platform Provider

- Reduce cognitive load on customer teams
- “Paved Road”
 - Consistent set of integrated capabilities that work together
 - Path of least resistance
 - E.g., Netflix, Google
- Self-service
 - Automated provisioning
 - Integrated monitoring
 - Examples and documentation
 - Mocks

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Platform Consumer

- If you use it, embrace it
 - Abstracting it away leads to “least common denominator” capabilities
 - Replacing a platform is rare; don’t optimize for the edge case
- “Lock-in” is another way of saying “value”

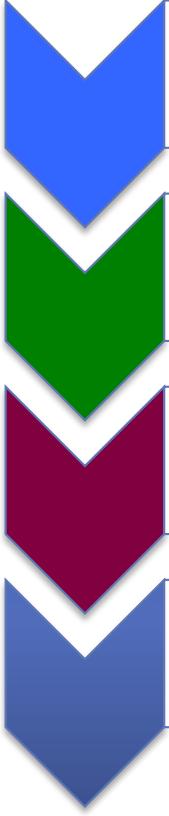
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Usage Discipline

- Charge to Use
 - Charge customers for *usage* of the service
 - Free usage gives no incentive to control usage or find more efficient alternatives
 - Motivates both provider and consumer to optimize
- E.g., App Engine usage at Google
 - Charging particularly egregious internal customer led to **10x reduction in usage**

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Engineering the Organization



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Communities of Practice

Organized around

- Language framework / ecosystem
- Specialized roles
- Service / platform consumers
- Techniques and Practices

Collaborating via

- Slack channels
- Groups and maillists
- Periodic meetings
- Internal conferences

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Internal Open Source



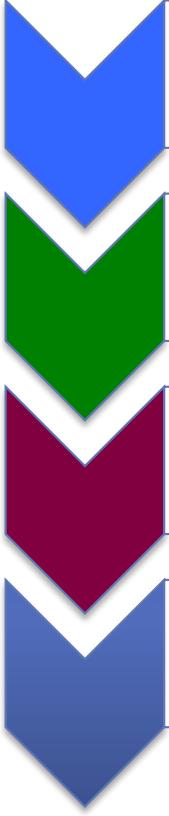
- Accept contributions from outside the team
 - Contributor submits a Pull Request (with tests!)
 - Provider team reviews, iterates, merges
- Best Practices
 - Document your processes
 - Learn to say no
 - Leverage the community
 - Embrace automation

<https://opensource.guide>

“Pull Requests
are accepted”

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Engineering the Organization



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When you organize,
think like an engineer.

When you lead,
think like a parent.

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“Technological Maestro”



- High energy
- Asks the right questions
- High standards
- Good on the details

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“If the man at the top is a dope or ignorant, everyone under him will soon be a dope or ignorant, because he sets the tone.”

-- Rabinow's 23rd Law of Leadership

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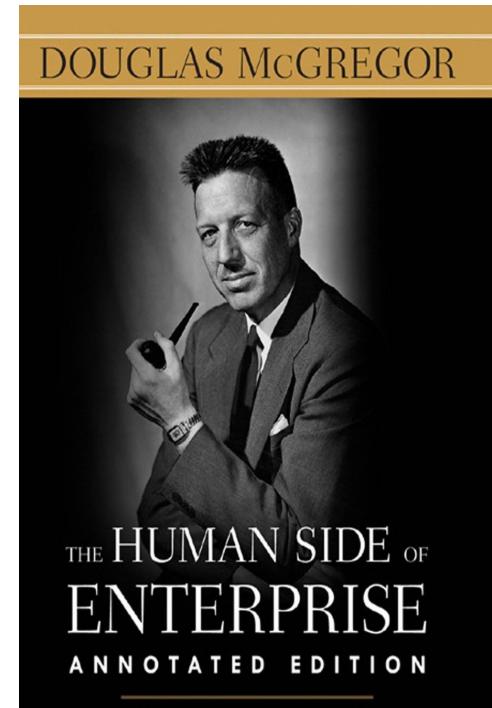
A players hire (and retain) A
players.

B players hire (and retain) C
players

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Theory X vs. Theory Y

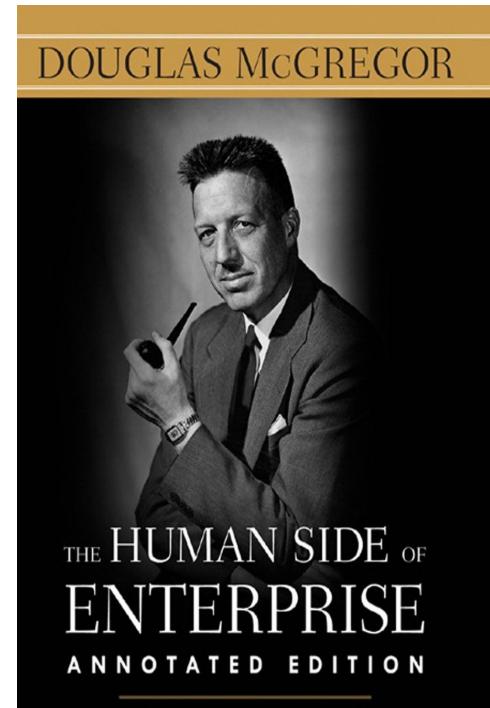
- Dr. Douglas McGregor, 1960
- Leadership's beliefs about what motivates employees



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Theory X vs. Theory Y

- **Theory X:** people are inherently lazy, avoid responsibility, require extrinsic motivation
- **Theory Y:** people are intrinsically motivated, seek ownership, want to perform well



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Never ascribe to malice what can adequately
be explained by incompetence.

-- Hanlon's Razor

Never ascribe to incompetence what can
adequately be explained by perverse
incentives.

-- Shoup's Corollary

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Psychological Safety



- Team is **safe for interpersonal risk-taking**
- “Being able to show and employ one’s self without fear of negative consequences”
- More important than any other factor in team success

Inclusive Decisionmaking

As we improve diversity, decisionmaking improves



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- Make better business decisions 87% of the time
- Make decisions 2x faster with 1/2 the meetings
- Deliver 60% better business results

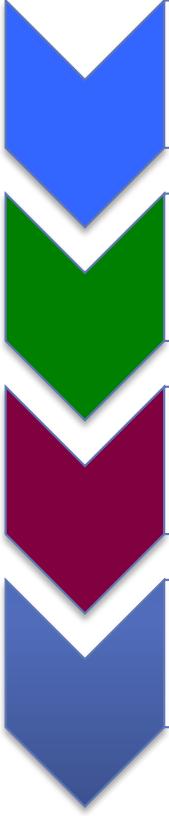
[Cloverpop Inclusive Decisionmaking study](#), 2016

None of us is as smart as all of
us.

-- Japanese proverb,
as quoted by Bob Taylor

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“If you can’t
change your organization,
change your organization.”

-- Martin Fowler

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Thank you!



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