

Drive Startup Success as an Adaptive CTO



chrissimon.au



@ChrisSimonAu



@ChrisSimonAu@hachyderm.io



*Empowering Technology
Teams to Drive Business
Success*

About Chris

- 2 x Co-founding CTO (since 2005)
 - 1 x exit by trade sale
 - 1 x operating business (Non-Executive Director)
- Startup CTO Coach
- Trainer, advisor, consultant, meetup organiser, open source developer, speaker



Three Phase CTO Journey

Adapt with your growing business.

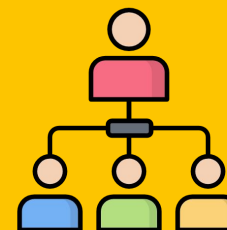
1. Founders

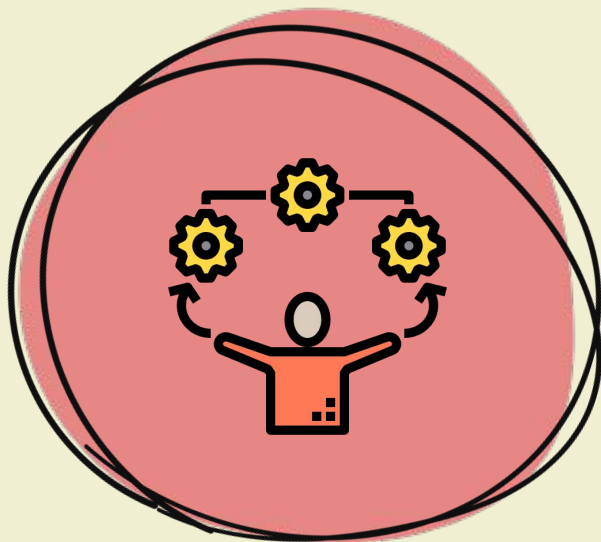


2. Team



3. Department





Phase 1 - Founders

Is a startup CTO necessary?

You Don't Need a CTO to Launch Your Startup



Dana Spiegel
Founder and CTO

4 articles

+ Follow

March 30, 2017

Startups: You Don't Need a CTO (Yet)



Jason Cole
Entrepreneur, CTO, Advisor, and Mentor

33 articles

+ Follow

July 21, 2017

<https://www.linkedin.com/pulse/startups-you-dont-need-cto-yet-jason-cole/>

and rarely writes code. It's common for under-qualified startup cofounders to call themselves CTOs. However, many times they're just execution-focused engineers with inflated job titles. Theoretically, it would be great to have someone in this role

<https://www.linkedin.com/pulse/you-dont-need-cto-launch-your-startup-dana-spiegel/>



Marc van Neerven • 2nd
Transformational (fractional) CTO, Board Advisor, Cloud ...
8mo •

+ Follow ...

Dear SaaS founders,
Calling your Lead Developer a CTO isn't right, and may cause issues later on.

https://www.linkedin.com/posts/mvneerven_cto-strategy-startups-activity-7018173658569269248-xzKX/

INSIGHTS > PRODUCT DEVELOPMENT

From Idea to Launch: How to Build a Tech Startup Without a CTO



BY ARSHPREET KAUR | 15 MIN READ |
UPDATED: APRIL 21, 2023

<https://www.netsolutions.com/insights/how-to-build-a-tech-startup-as-a-non-technical-founder/>

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1. CTO Co-founder Qualities



Entrepreneurial



*Technology
Builder*



Business Leader



Salesperson



Risk Manager

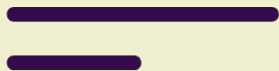


Entrepreneurial

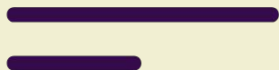


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1



2



3



MVP:
Minimum Viable Product



MVS:
Minimum Viable Segment



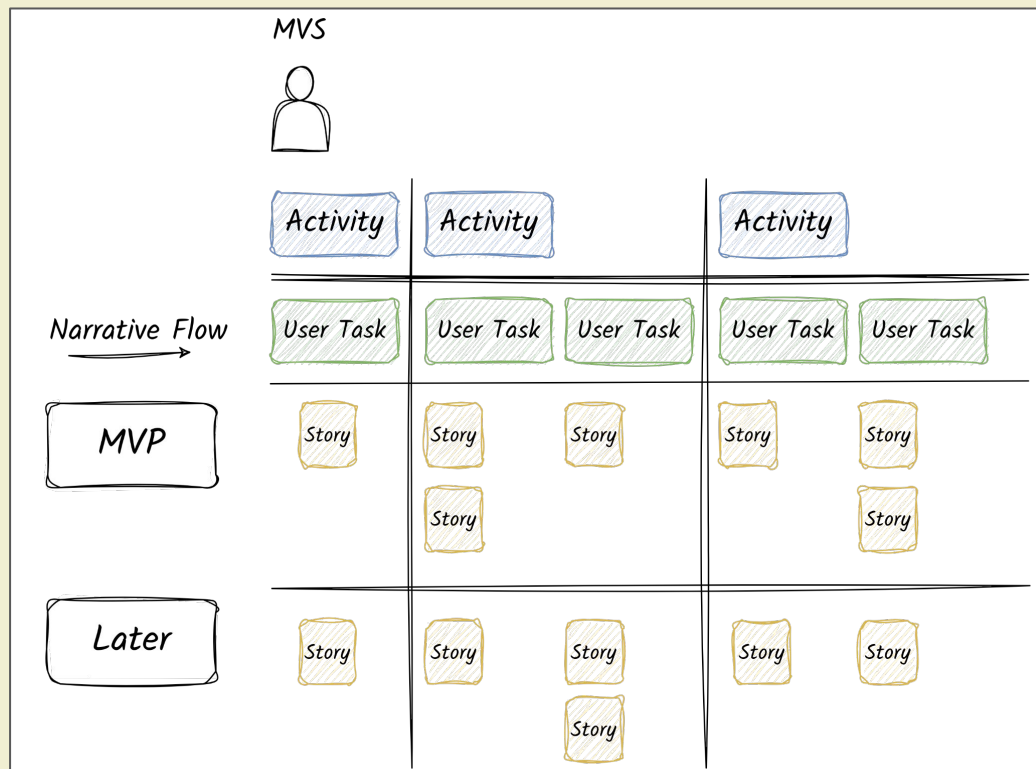
Entrepreneurial



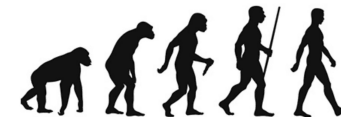
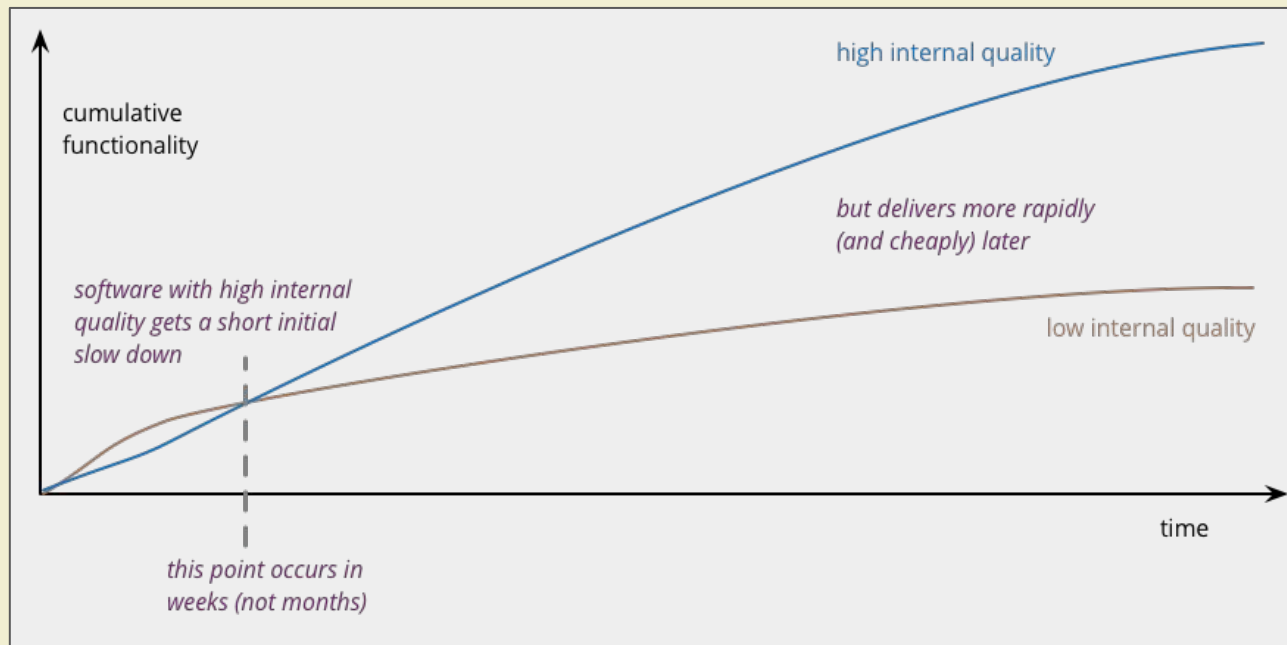
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Should it be in
MVP or later?

Is it needed by
the MVS?



Technology Builder



Refactoring

Improving the Design of Existing Code



<https://martinfowler.com/articles/is-quality-worth-cost.html>

Risk Manager



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Likelihood	Consequences				
	Insignificant <i>Risk is easily mitigated by normal day to day process</i>	Minor <i>Delays up to 10% of Schedule Additional cost up to 10% of Budget</i>	Moderate <i>Delays up to 30% of Schedule Additional cost up to 30% of Budget</i>	Major <i>Delays up to 50% of Schedule Additional cost up to 50% of Budget</i>	Catastrophic <i>Project abandoned</i>
Certain >90% chance	High	High	Extreme	Extreme	Extreme
Likely 50% - 90% chance	Moderate	High	High	Extreme	Extreme
Moderate 10% - 50% chance	Low	Moderate	High	Extreme	Extreme
Unlikely 3% - 10% chance	Low	Low	Moderate	High	Extreme
Rare <3% chance	Low	Low	Moderate	High	High



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Risk Manager

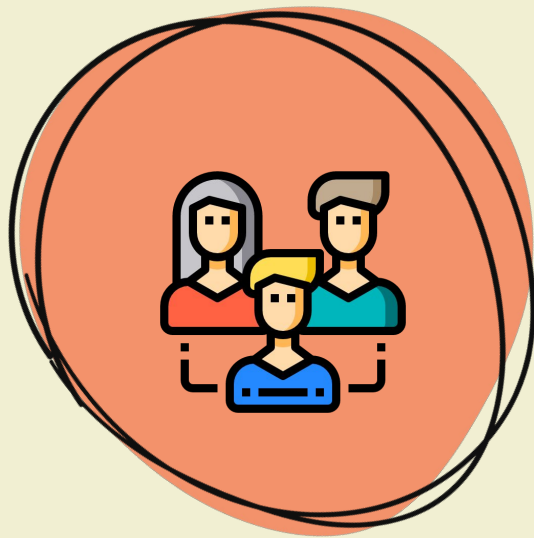


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Risk Register						
Risk	Category	Impact	Likelihood	Risk Rating	Mitigant	Residual
...

Risk Register	
Mitigant	
We will implement <mitigant> when <business metric> crosses <threshold>.	





Phase 2 - Team

2. CTO Team Leader Qualities



Recruiter



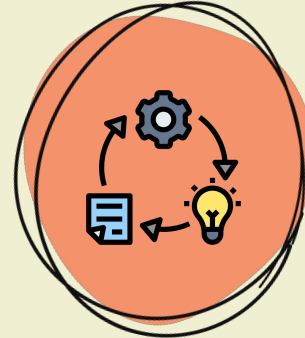
Team Builder



*Culture
Custodian*



Energiser

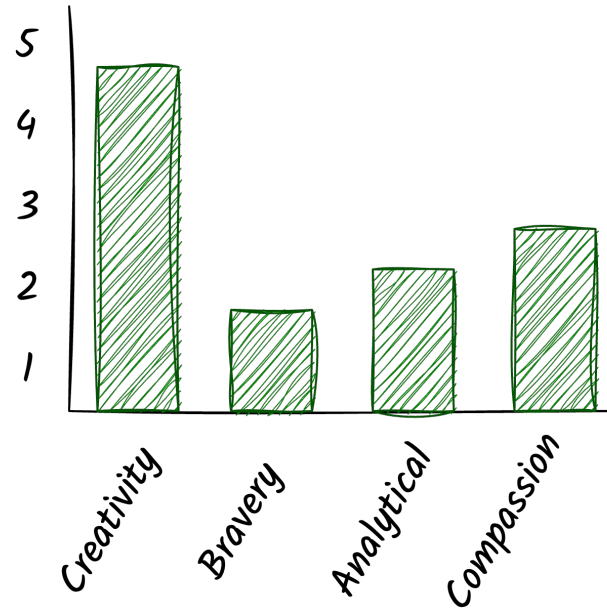


*Process Driver
(but not too much
process)*

Recruiter



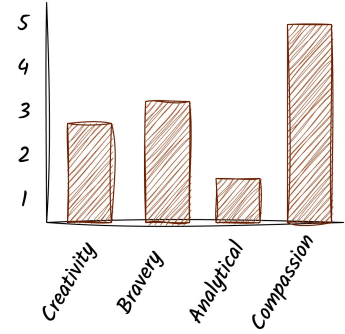
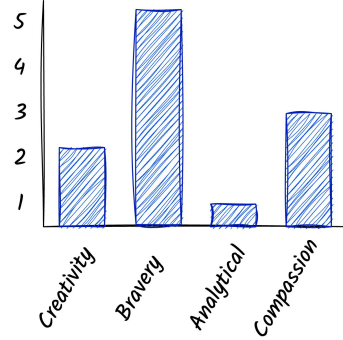
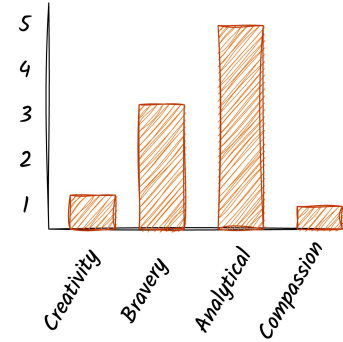
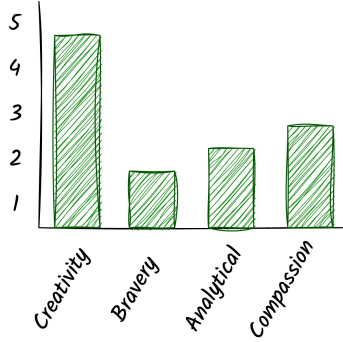
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Recruiter



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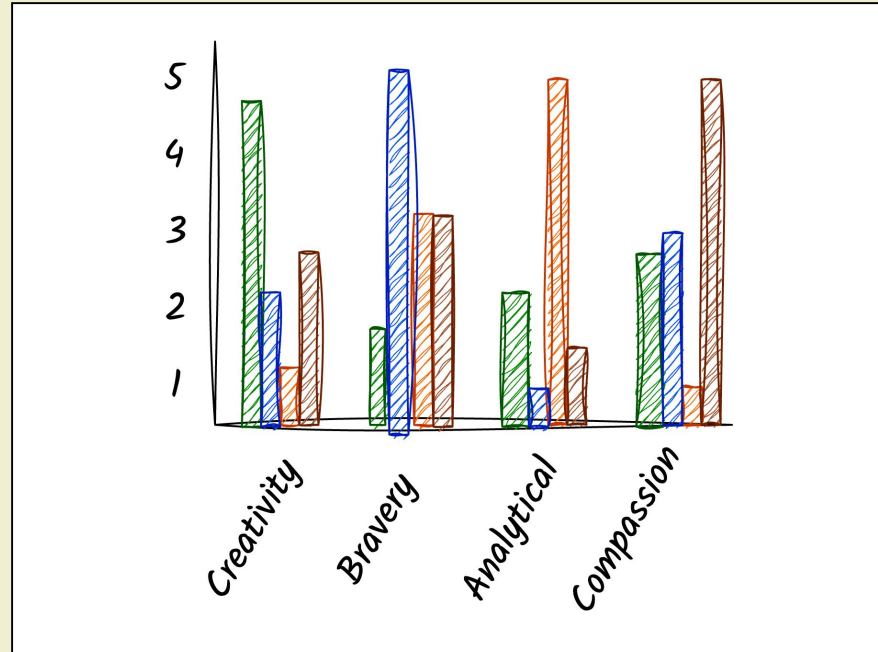
Recruiter



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<https://smallbusiness.chron.com/differences-between-group-work-team-work-11004.html>



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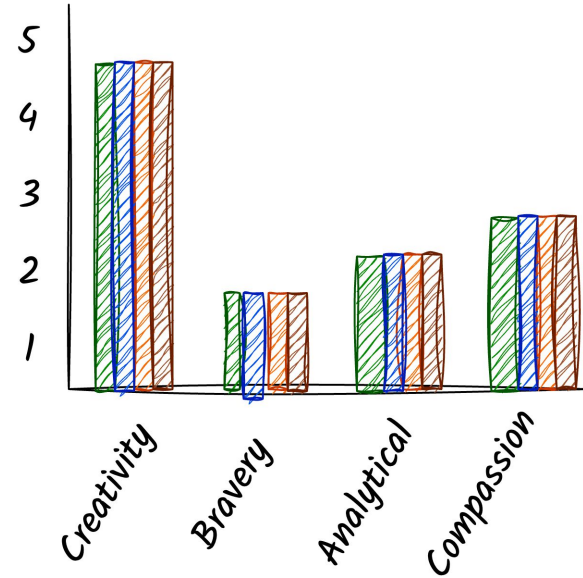
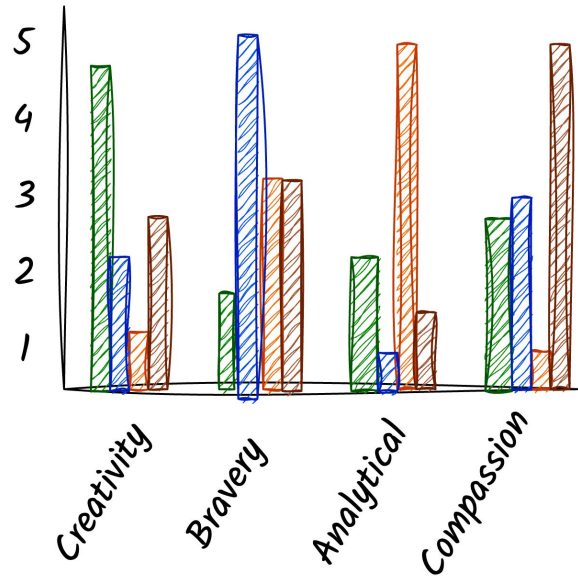


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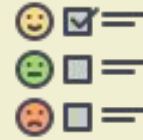
Recruiter



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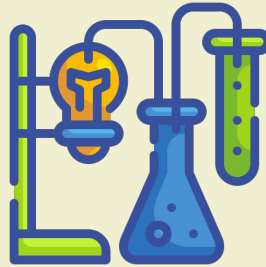
Culture Custodian



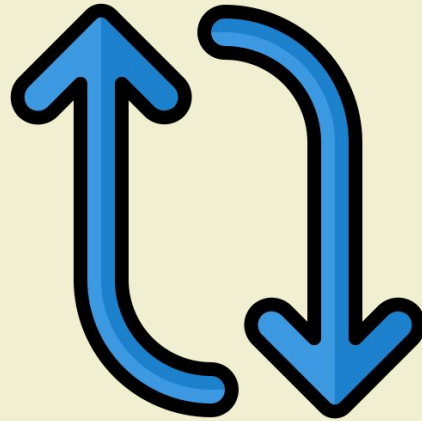
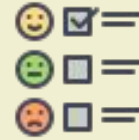
Psychological Safety



<https://rework.withgoogle.com/print/guides/5721312655835136/>



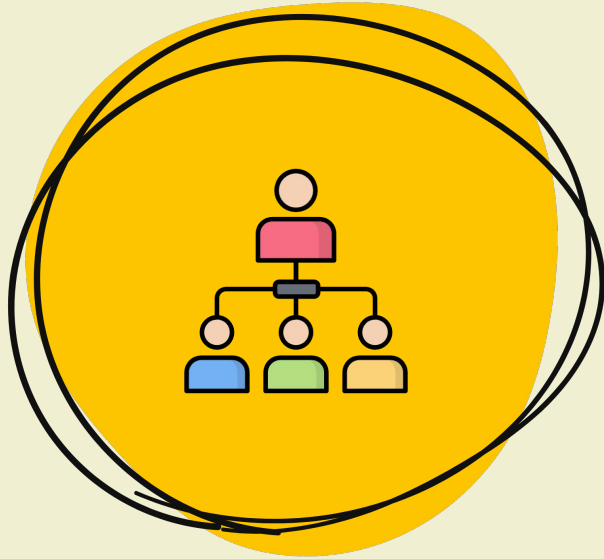
Culture Custodian



**Feedback
Culture**



Be **Specific**
about **Actions**
and **Outcomes**



Phase 3 - Department

3. CTO Qualities



*Situationally
Aware*



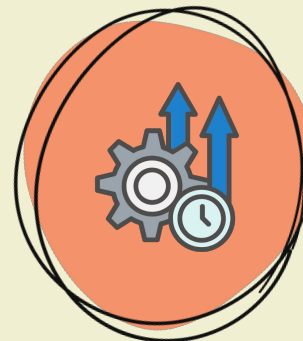
*Socio-Technical
Architect*



*Engineering
Culture*



*Talent Brand
Ambassador*



*Process &
Tooling
Scaler*



Situationally Aware



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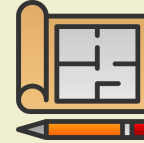


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Socio-technical Architect



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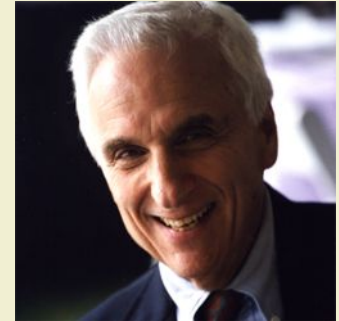


The basic thesis of this article is that organizations which design systems ... are constrained to produce designs which are copies of the communication structures of these organizations.

...

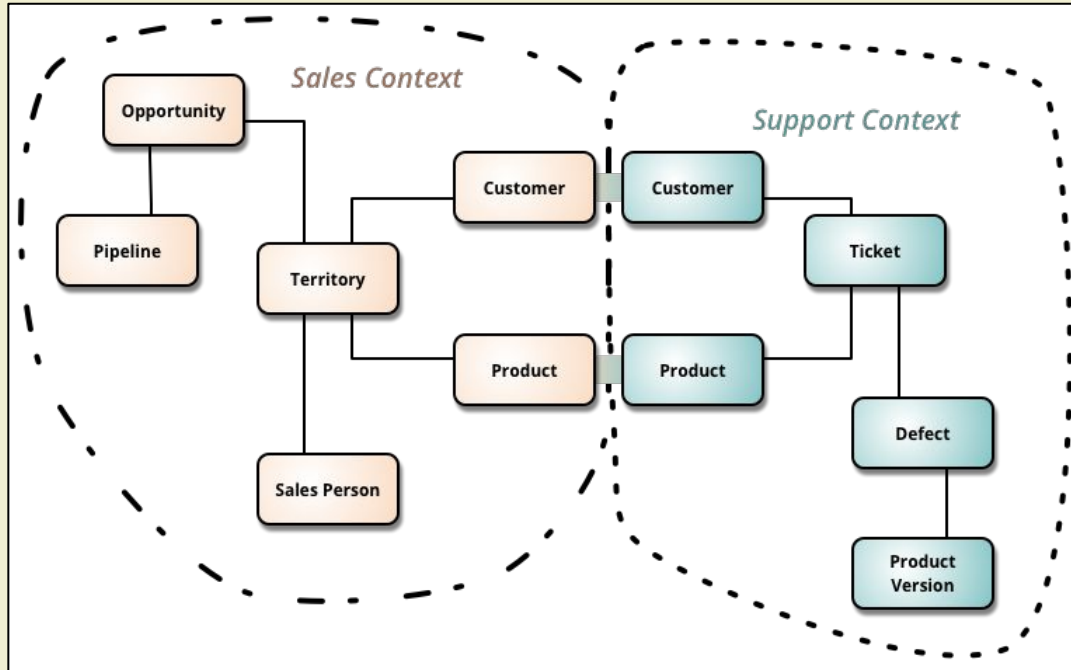
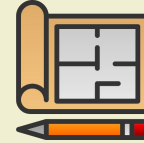
Because the design which occurs first is almost never the best possible, the prevailing system concept may need to change. Therefore, flexibility of organization is important to effective design.

- Mel Conway, 1968



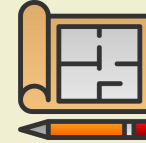
Socio-technical Architect

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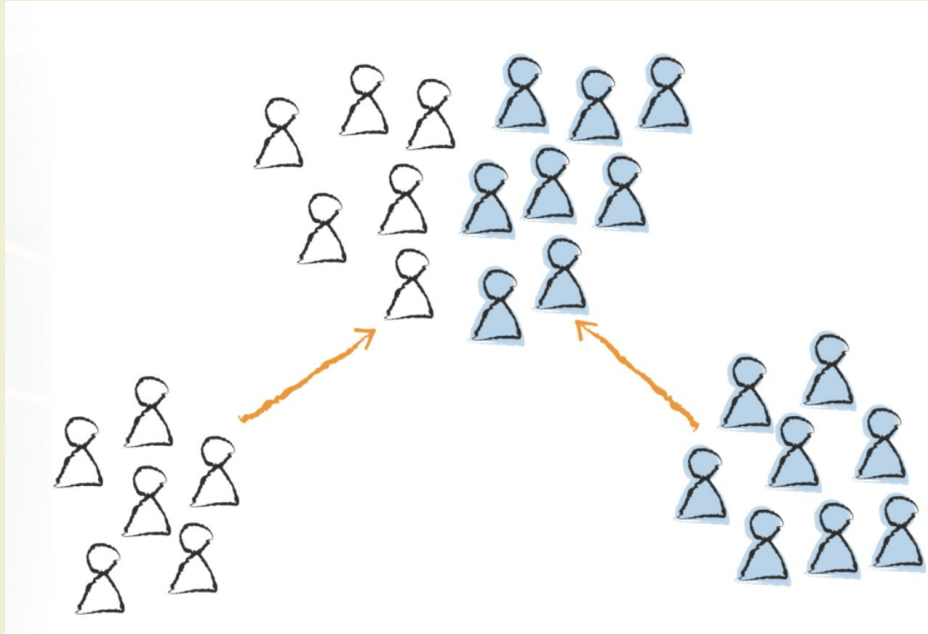


<https://martinfowler.com/bliki/DomainDrivenDesign.html>

Socio-technical Architect



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Dynamic Reteaming



<https://www.heidiheffand.com/dynamic-reteaming/>



Process & Tooling



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FIGURE 1: EXAMPLE METRICS

LEVEL	SATISFACTION & WELL-BEING How fulfilled, happy, and healthy one is	PERFORMANCE An outcome of a process	ACTIVITY The count of actions or outputs	COMMUNICATION & COLLABORATION How people talk and work together	EFFICIENCY & FLOW Doing work with minimal delays or interruptions
INDIVIDUAL One person	<ul style="list-style-type: none">* Developer satisfaction* Retention[†]* Satisfaction with code reviews assigned* Perception of code reviews	<ul style="list-style-type: none">* Code review velocity	<ul style="list-style-type: none">* Number of code reviews completed* Coding time* # Commits* Lines of code[†]	<ul style="list-style-type: none">* Code review score (quality or thoughtfulness)* PR merge times* Quality of meetings[†]* Knowledge sharing, discoverability (quality of documentation)	<ul style="list-style-type: none">* Code review timing* Productivity perception* Lack of interruptions
TEAM OR GROUP People that work together	<ul style="list-style-type: none">* Developer satisfaction* Retention[†]	<ul style="list-style-type: none">* Code review velocity* Story points shipped[†]	<ul style="list-style-type: none">* # Story points completed[†]	<ul style="list-style-type: none">* PR merge times* Quality of meetings[†]* Knowledge sharing or discoverability (quality of documentation)	<ul style="list-style-type: none">* Code review timing* Handoffs
SYSTEM End-to-end work through a system (like a development pipeline)	<ul style="list-style-type: none">* Satisfaction with engineering system (e.g., CI/CD pipeline)	<ul style="list-style-type: none">* Code review velocity* Code review (acceptance rate)* Customer satisfaction* Reliability (uptime)	<ul style="list-style-type: none">* Frequency of deployments	<ul style="list-style-type: none">* Knowledge sharing, discoverability (quality of documentation)	<ul style="list-style-type: none">* Code review timing* Velocity/flow through the system

[†] Use these metrics with (even more) caution — they can proxy more things.

March 6, 2021

Volume 19, issue 1



The SPACE of Developer Productivity

There's more to it than you think.

Nicole Forsgren, GitHub

Margaret-Anne Storey, University of Victoria

Chandra Maddila, Thomas Zimmermann, Brian Houck, and Jenna Butler, Microsoft Research



chrissimon.au



@ChrisSimonAu



@ChrisSimonAu@hachyderm.io

<https://queue.acm.org/detail.cfm?id=3454124>

Recap - 3 Phase CTO Journey

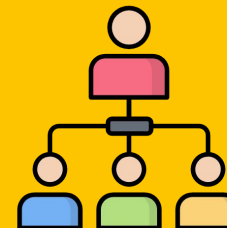
1. Founders



2. Team



3. Department



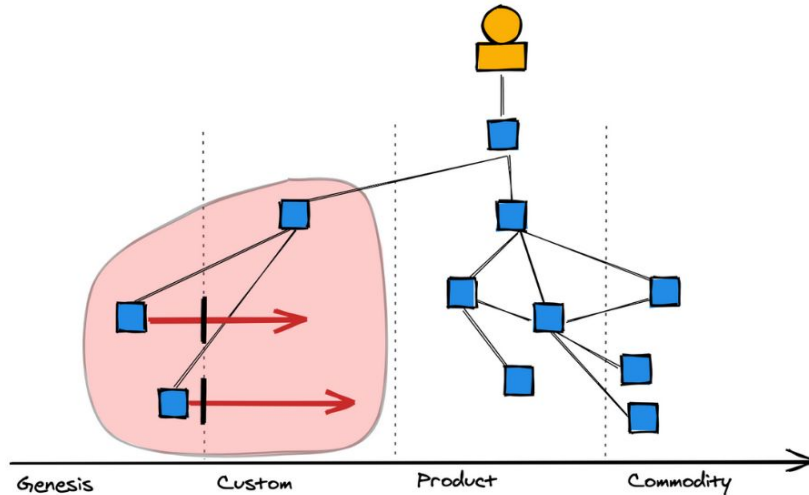
Wardley Mapping

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Learn Wardley Mapping

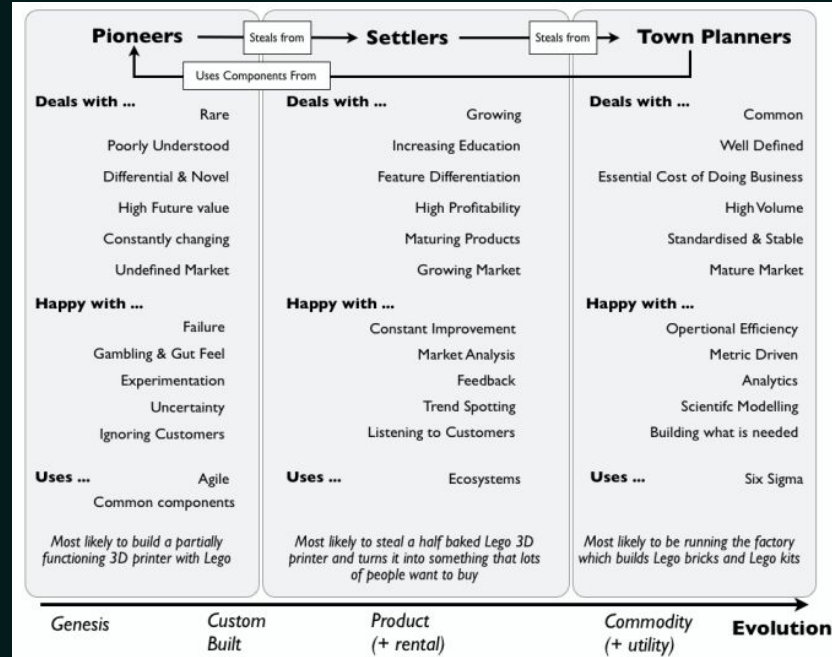


<https://learnwardleymapping.com/>



Wardley's Personas

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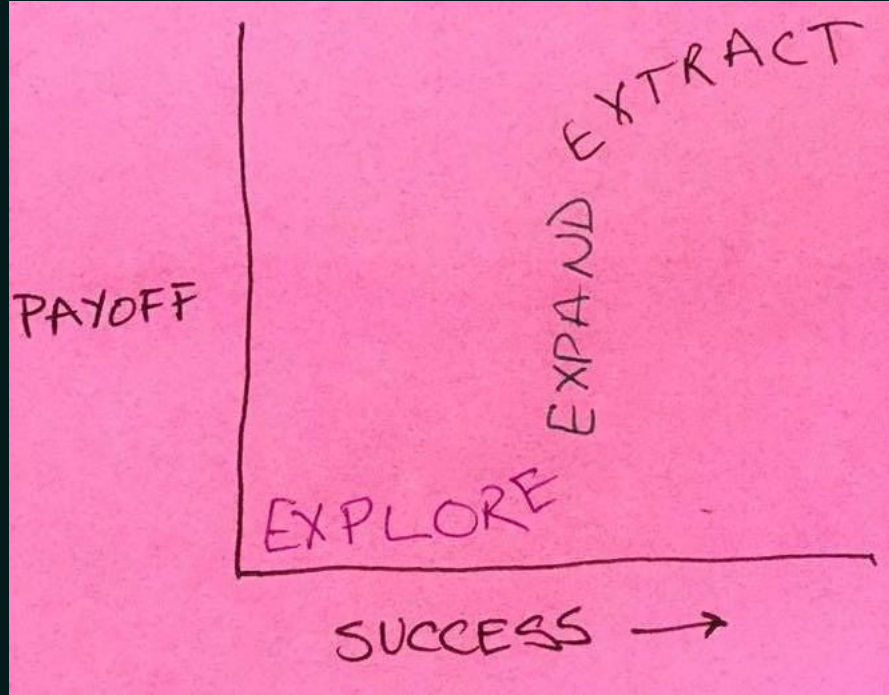


<https://blog.gardeviance.org/2012/06/pioneers-settlers-and-town-planners.html>



Kent Beck's 3X

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<https://medium.com/@plindberg/kent-becks-3x-87088712d8aa>

chrissimon.au

@ChrisSimonAu

@ChrisSimonAu@hachyderm.io

Let's connect



chrissimon.au



chrissimon-au



@ChrisSimonAU



@ChrisSimonA@
hachyderm.io

