

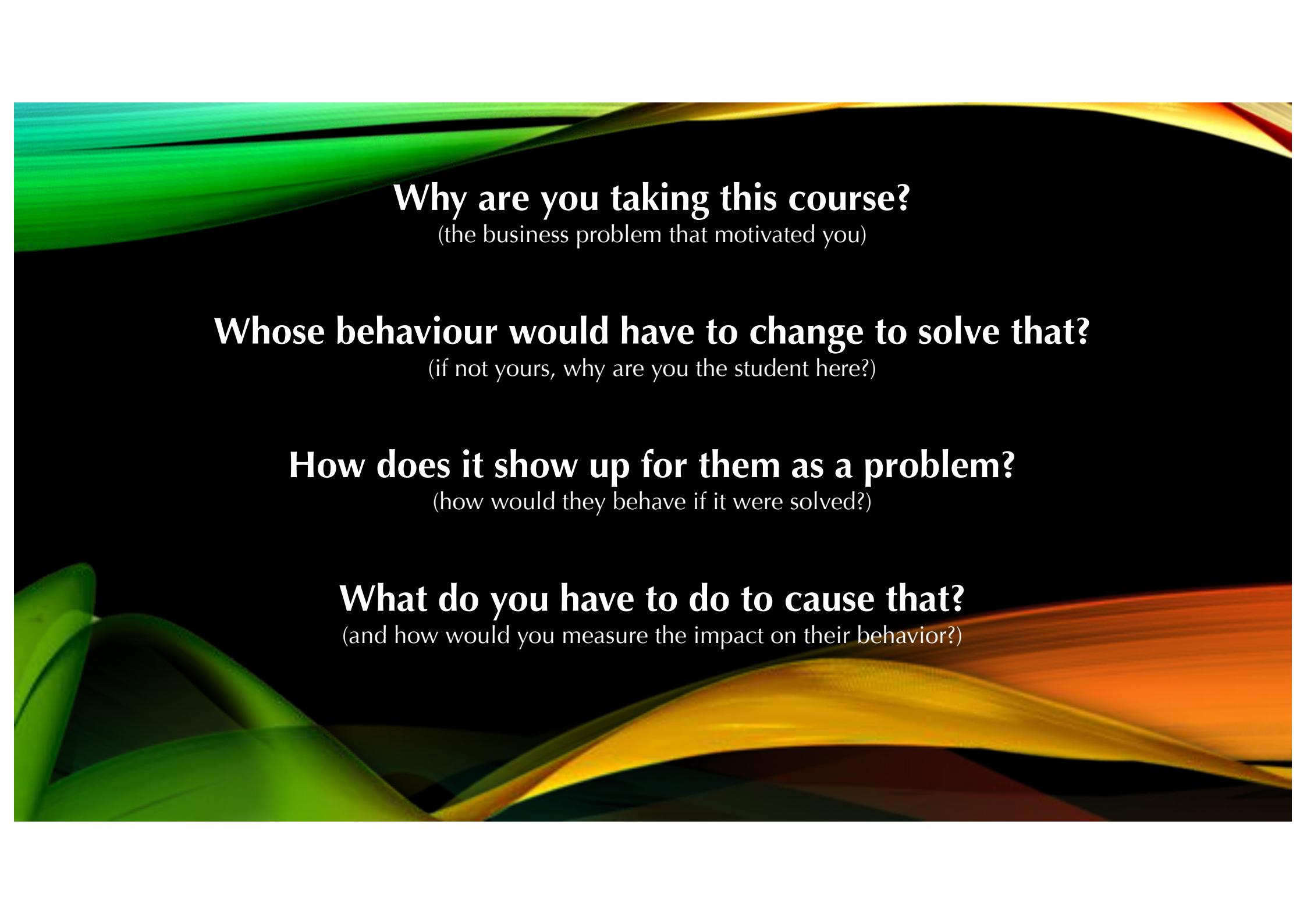


XSCALE Alliance

XSCALEAlliance.org



eXponential
Product
Management



Why are you taking this course?

(the business problem that motivated you)

Whose behaviour would have to change to solve that?

(if not yours, why are you the student here?)

How does it show up for them as a problem?

(how would they behave if it were solved?)

What do you have to do to cause that?

(and how would you measure the impact on their behavior?)

Exponential Product Management

- Why, Who, How & What?
 - The XSCALE Principles
- Game: Exponential Throughput
 - Via “Minty Machines”
- Game: Set-based Logo Design
 - Working as a Product Squad
- Product Squad Ceremonies
 - Leadership as a Service & DRIs
- Throughput & Batch Size
 - How to design for Ecosystems Growth
- Practice: Pirate Canvas
 - Impact Mapping the Pirate Metrics
- Practice: Behavior Driven Analysis
 - How to use Kanban to whip WIP
- Practice: Business Bingo
 - Change as a Product
- Practice: Release Refactoring
 - Lean Tea
- Practice: Behavior Driven Development
 - Continuous Delivery



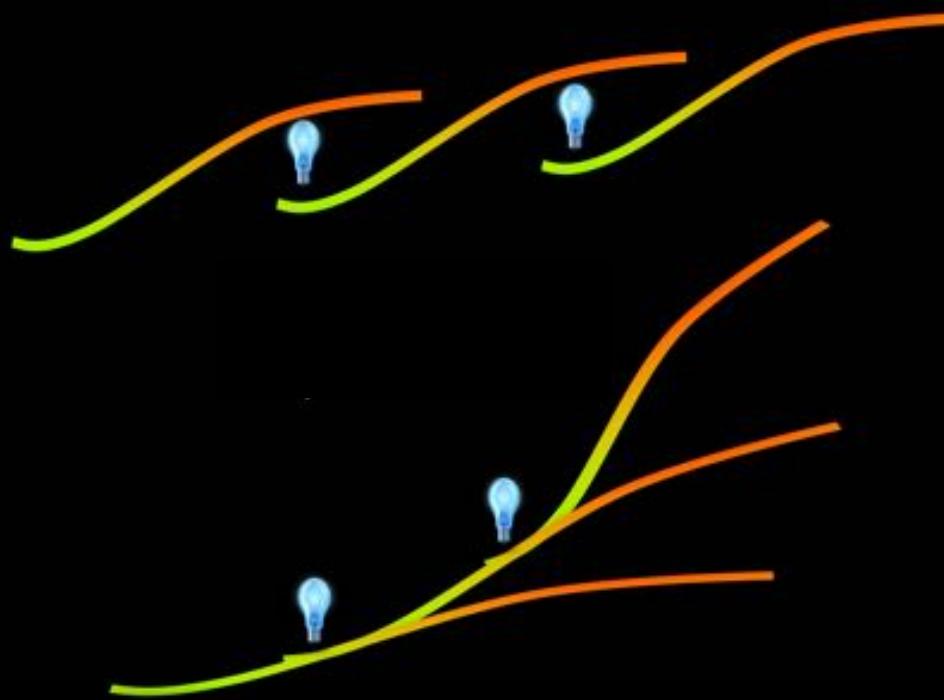
What's the difference between Agile Organization and some other kind?

- › eXponential return
- › Simple design
- › Continuous throughput
- › Autonomous teams
- › Learning: triple-loop
- › Ecosystems thinking

www.xscalealliance.org

eXponential return

- › Products are service ecosystems
- › Product return curves are sigmoids
- › Don't chain the curves; stack them



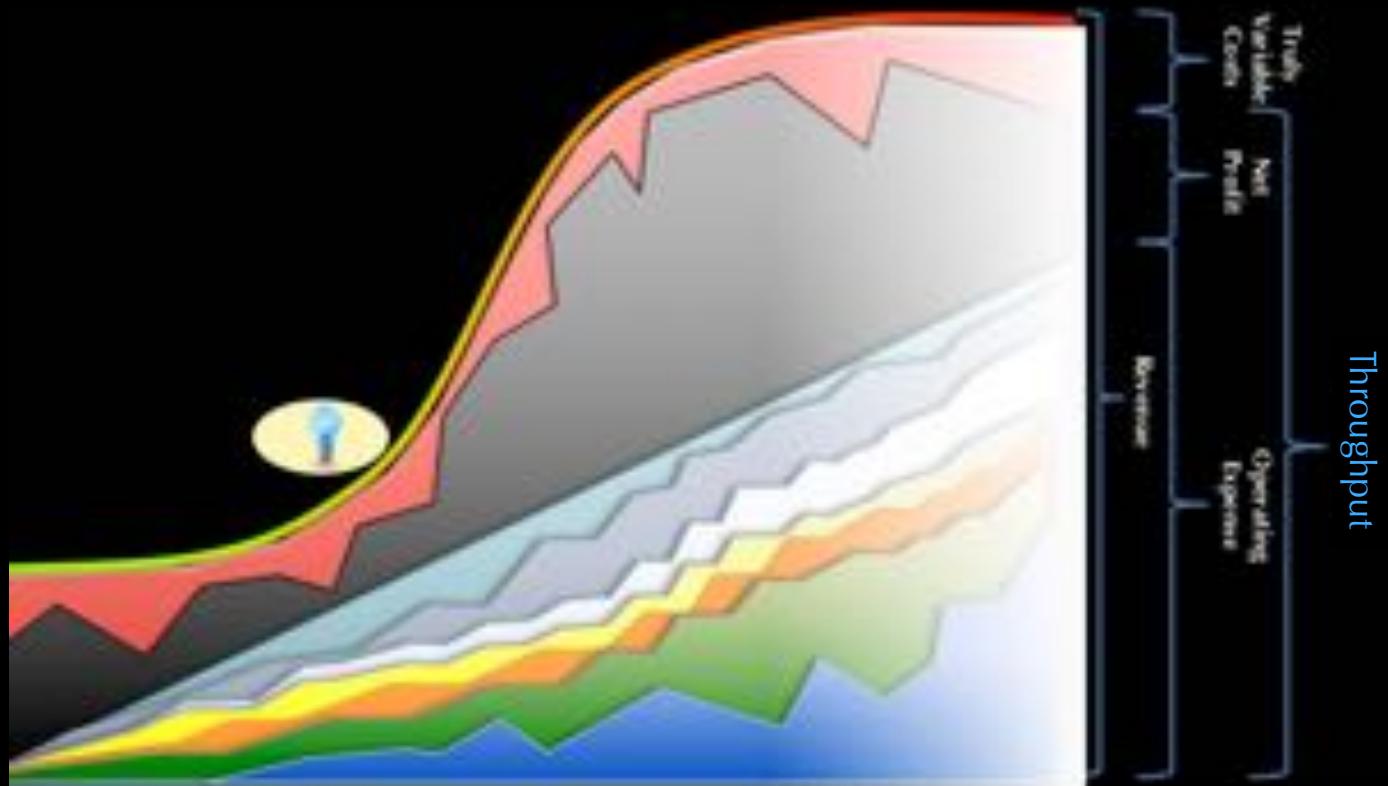
Simple design

- › Design means the elegance of minimum
- › Not look and feel; how the ecosystem works
- › Design, Delivery & Devops hand-in-glove



Continuous throughput

- › At one time there's **one** bottleneck constraint
- › Work on other constraints is premature
- › Because it won't increase **Throughput**



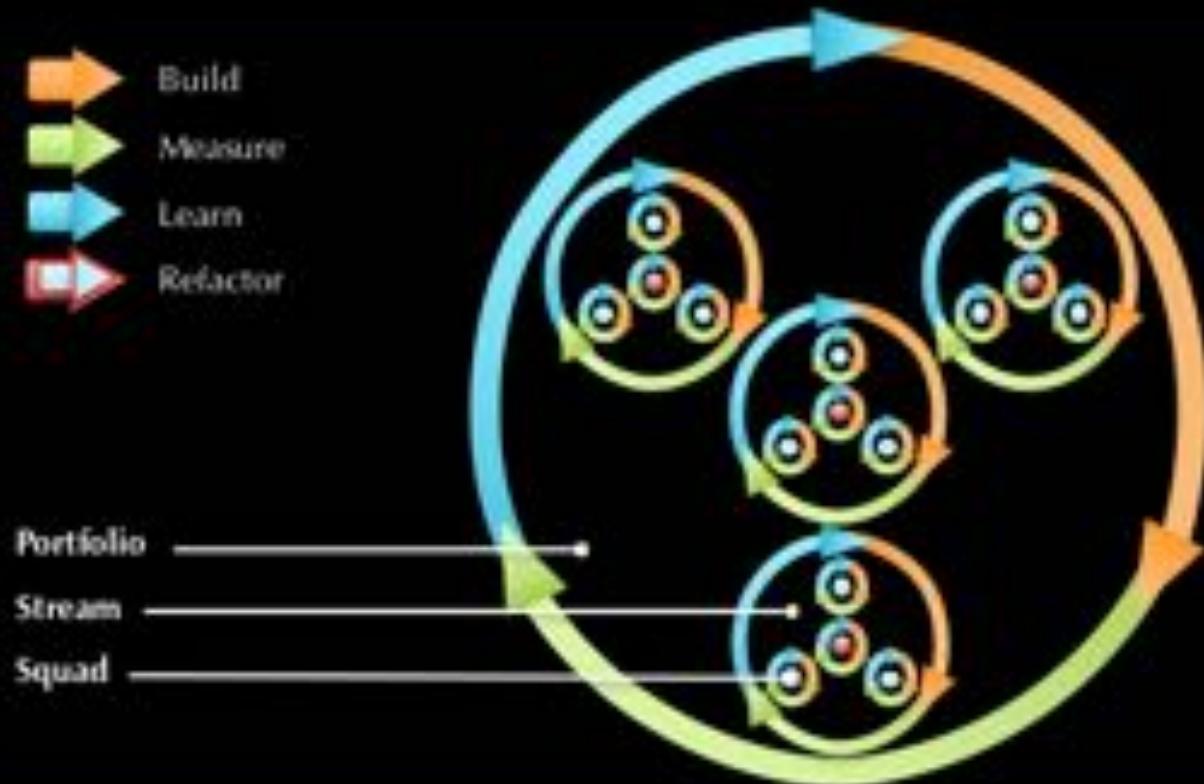
Autonomous Teams

- › Self-managing teams don't have masters
- › Self-aligning streams don't have owners
- › Leadership as a Service + Chapter Meetings



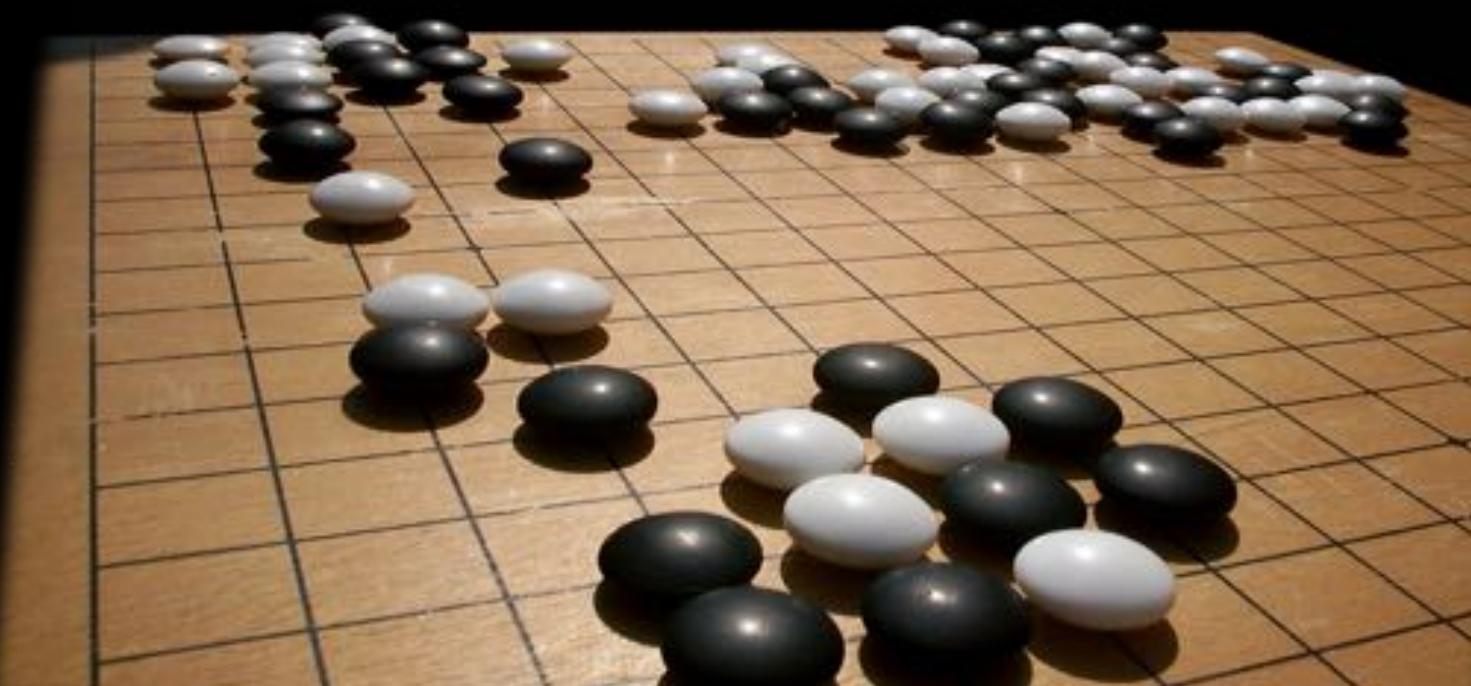
triple loop Learning

- › Learning What, How & How to learn How
- › Self-Organizing Transformation: Steel Threads
- › Continuous Delivery x Continuous Innovation



Ecosystems thinking

- › Ecosystems are networks of mutual benefit
- › Whole board: think globally, act locally
- › Avoiding hill-climbing: iterative and **reductive**

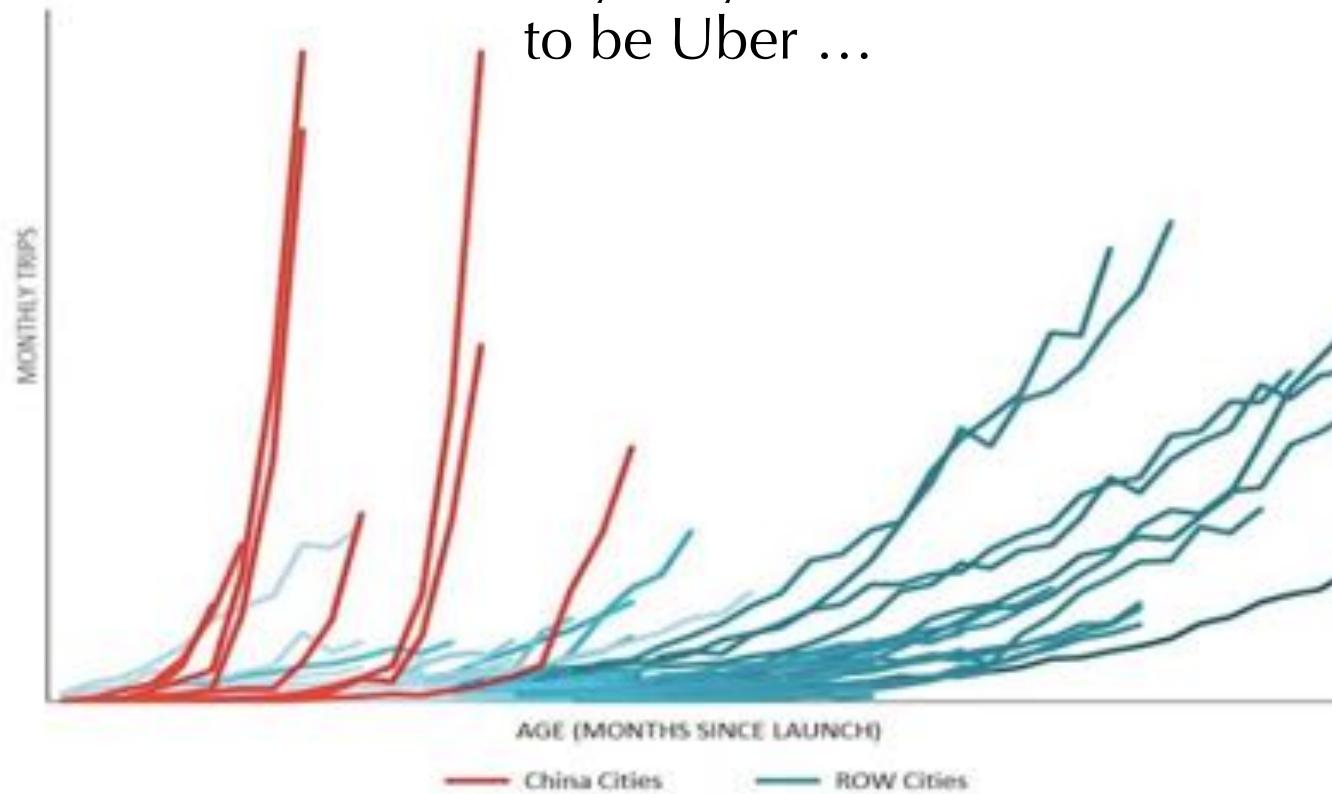




Exponential Return

eXponential

Everybody wants
to be Uber ...



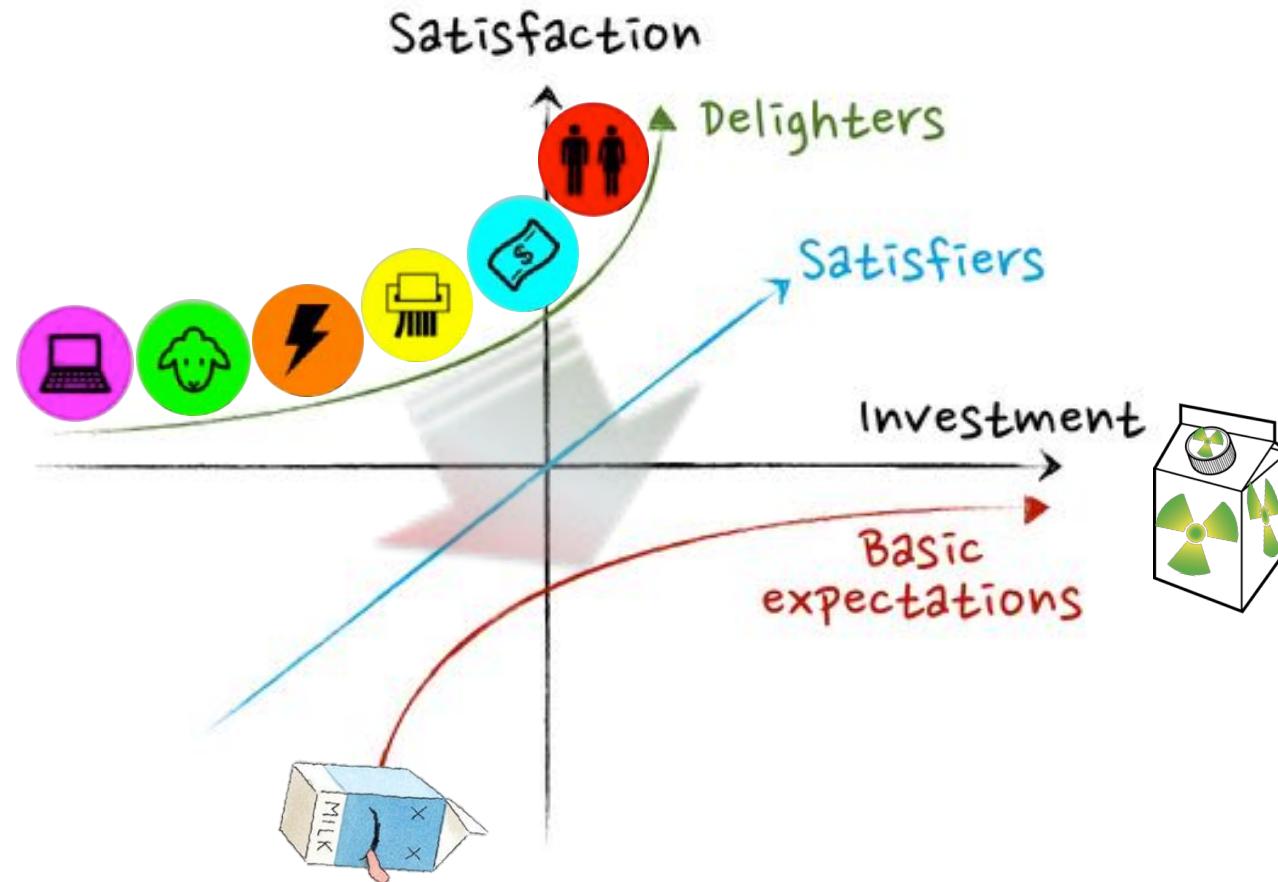
eXponential



eXponential

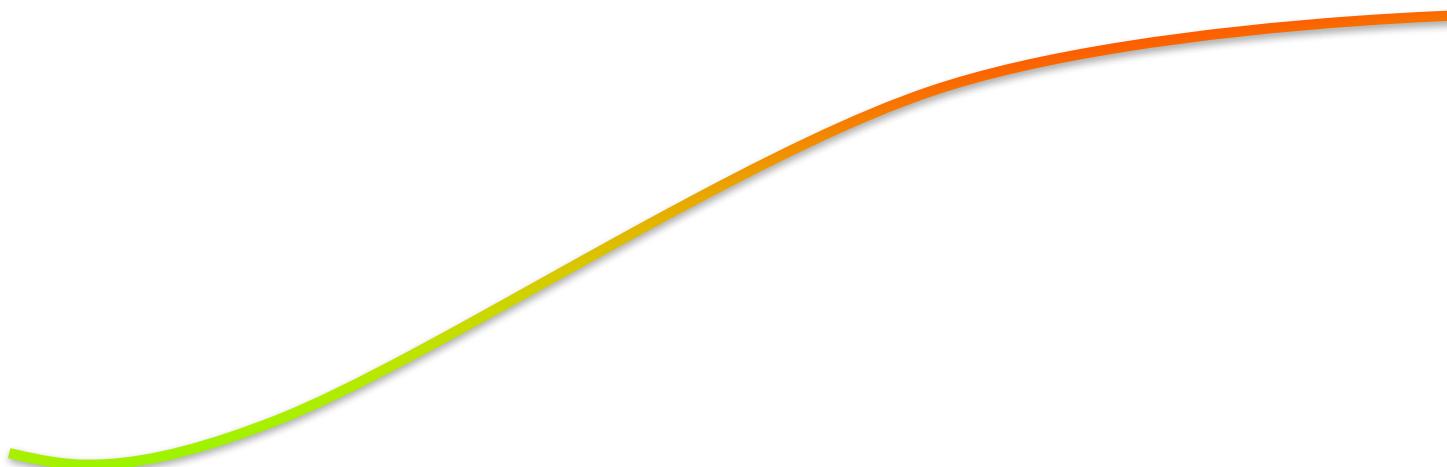


eXponential



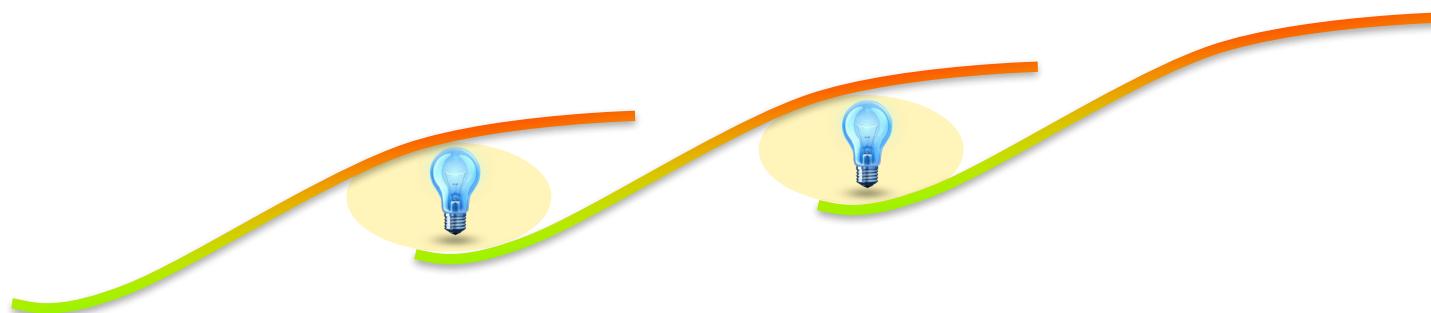
Because Kano.

eXponential



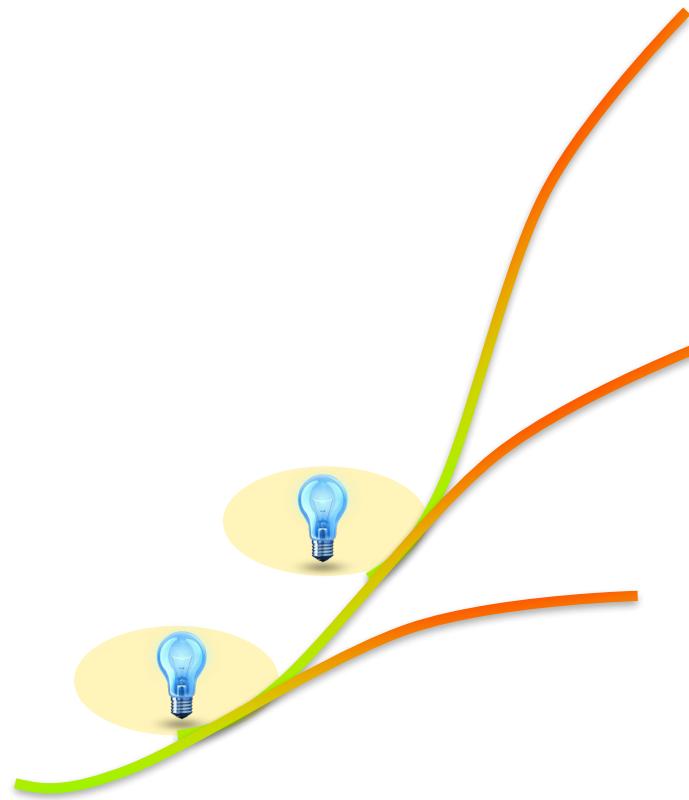
Entropy

eXponential



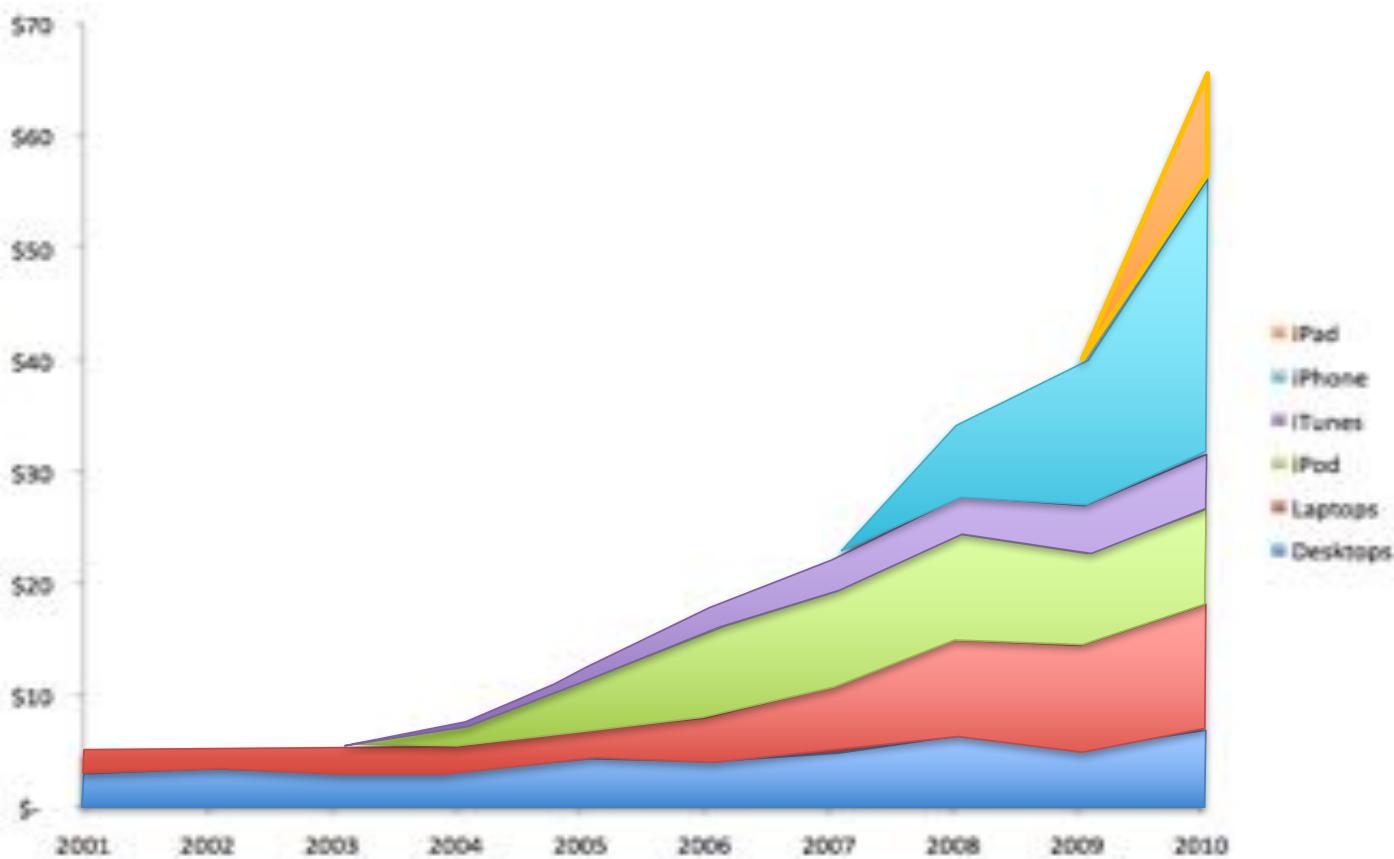
Linear growth

eXponential



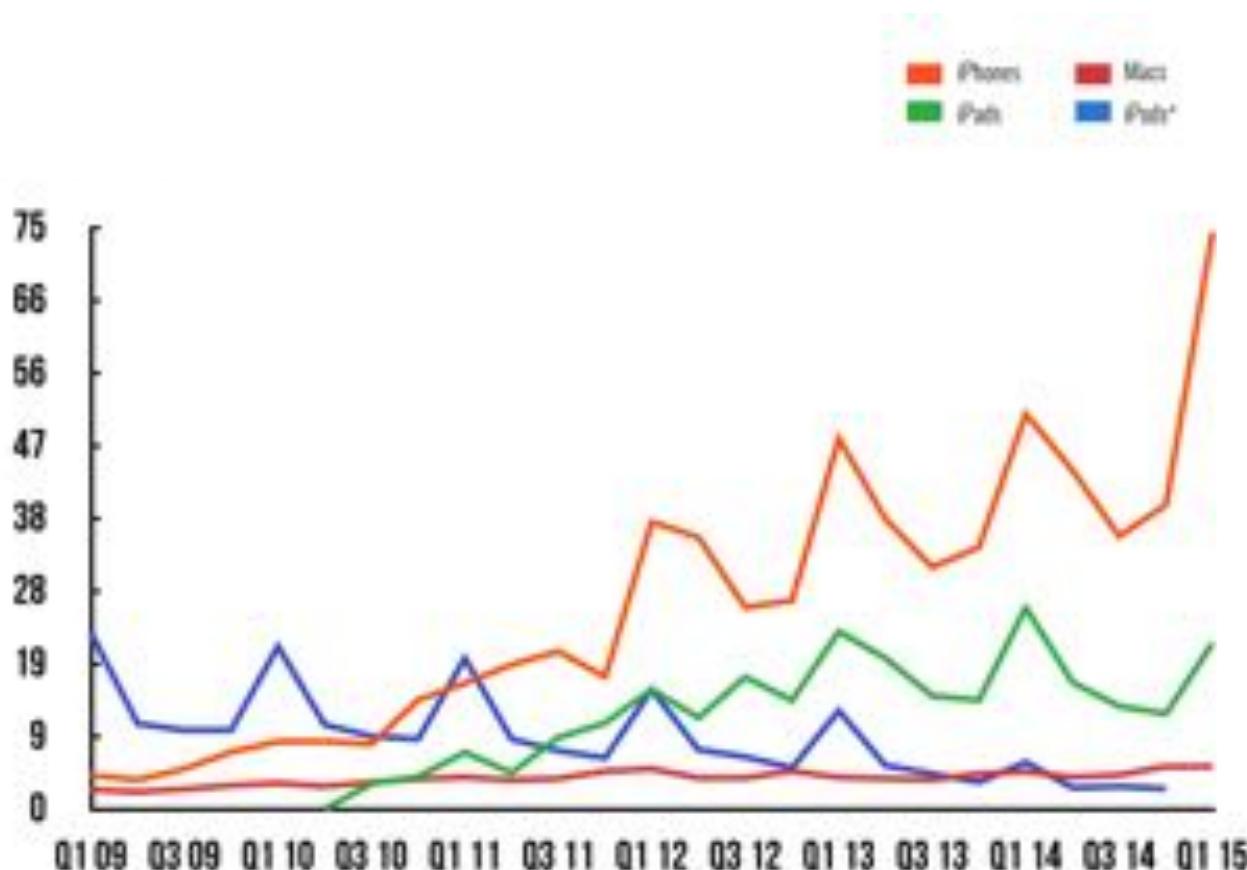
Extropy

eXponential



Extropy

eXponential



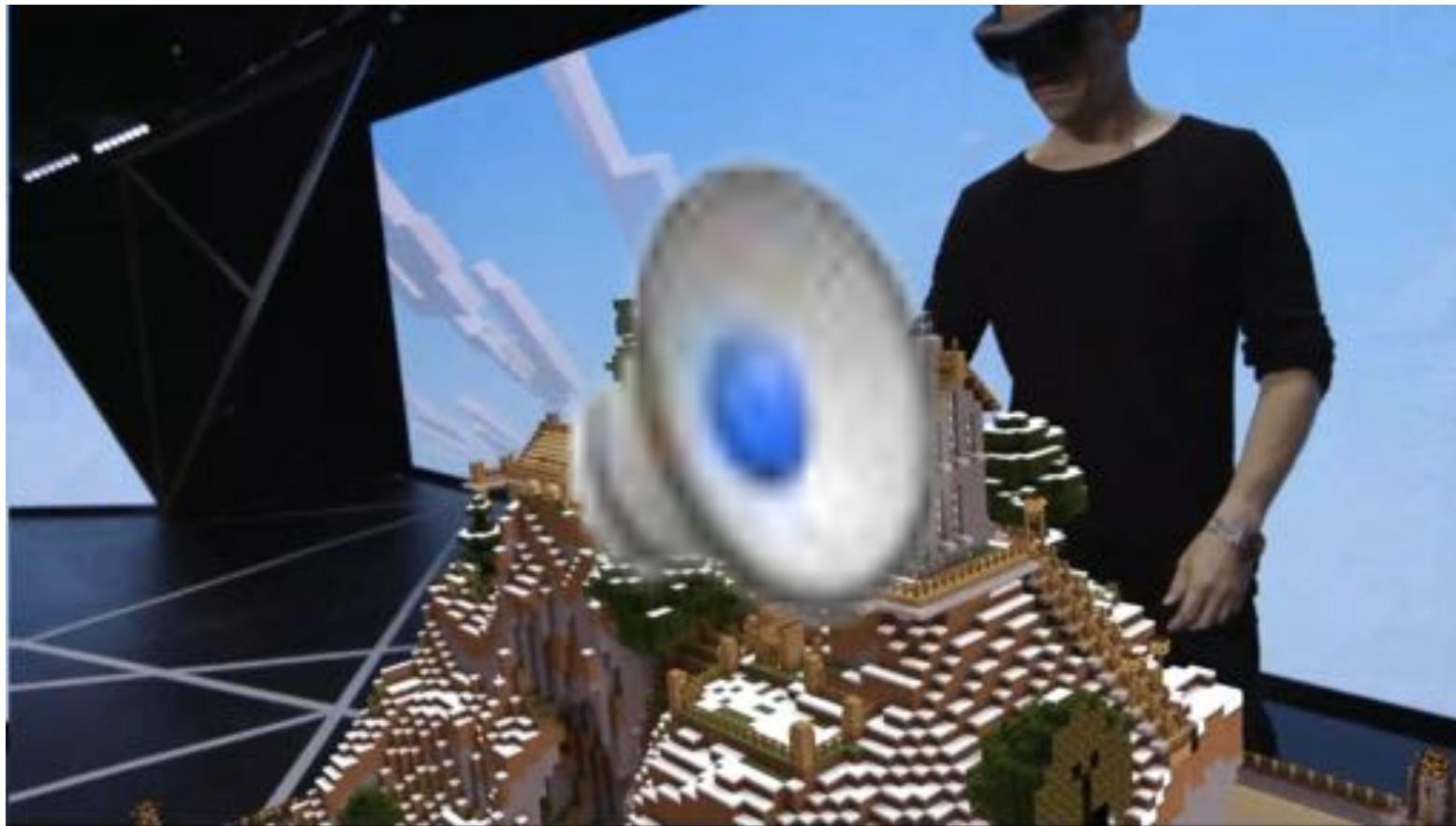
Now Apple is worth more than Russia

eXponential



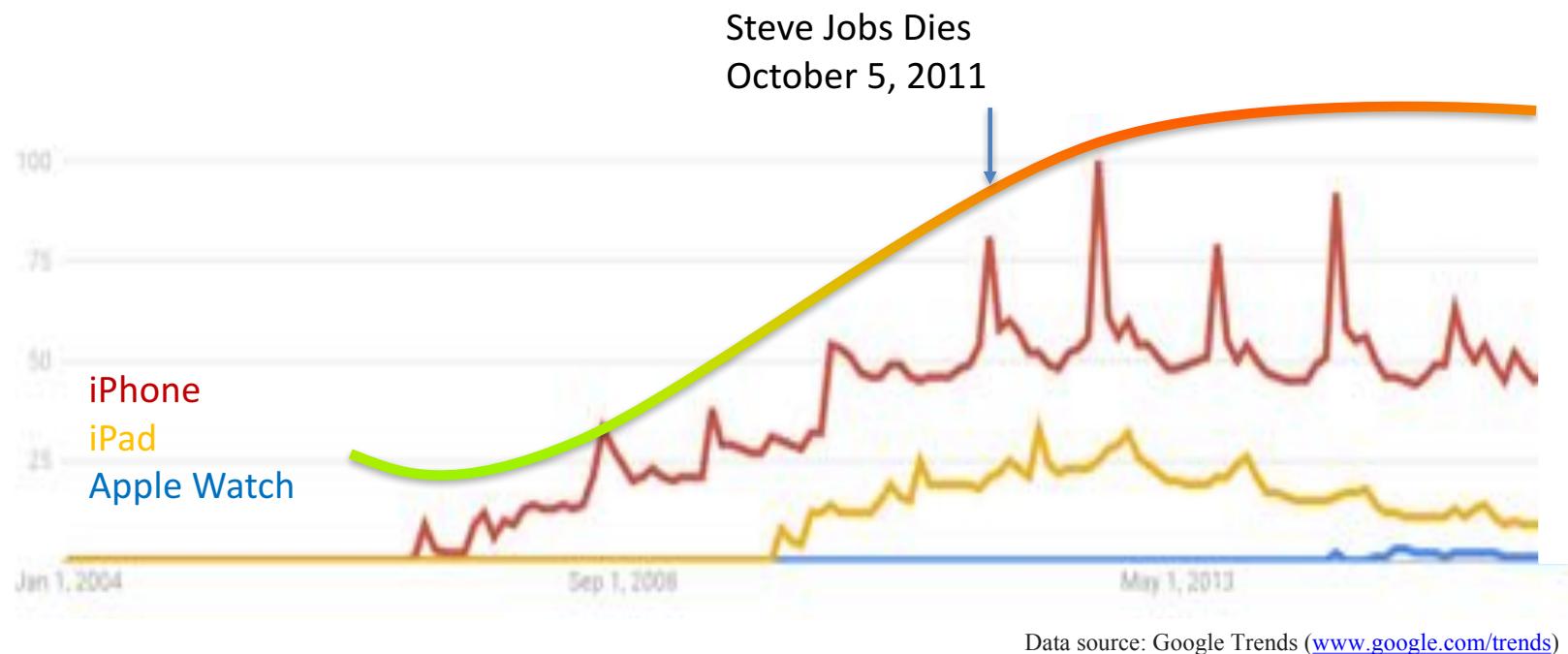
But this isn't a delighter.

eXponential



This is a delighter.

eXponential



post-Jobs Apple goes entropic

eXponential

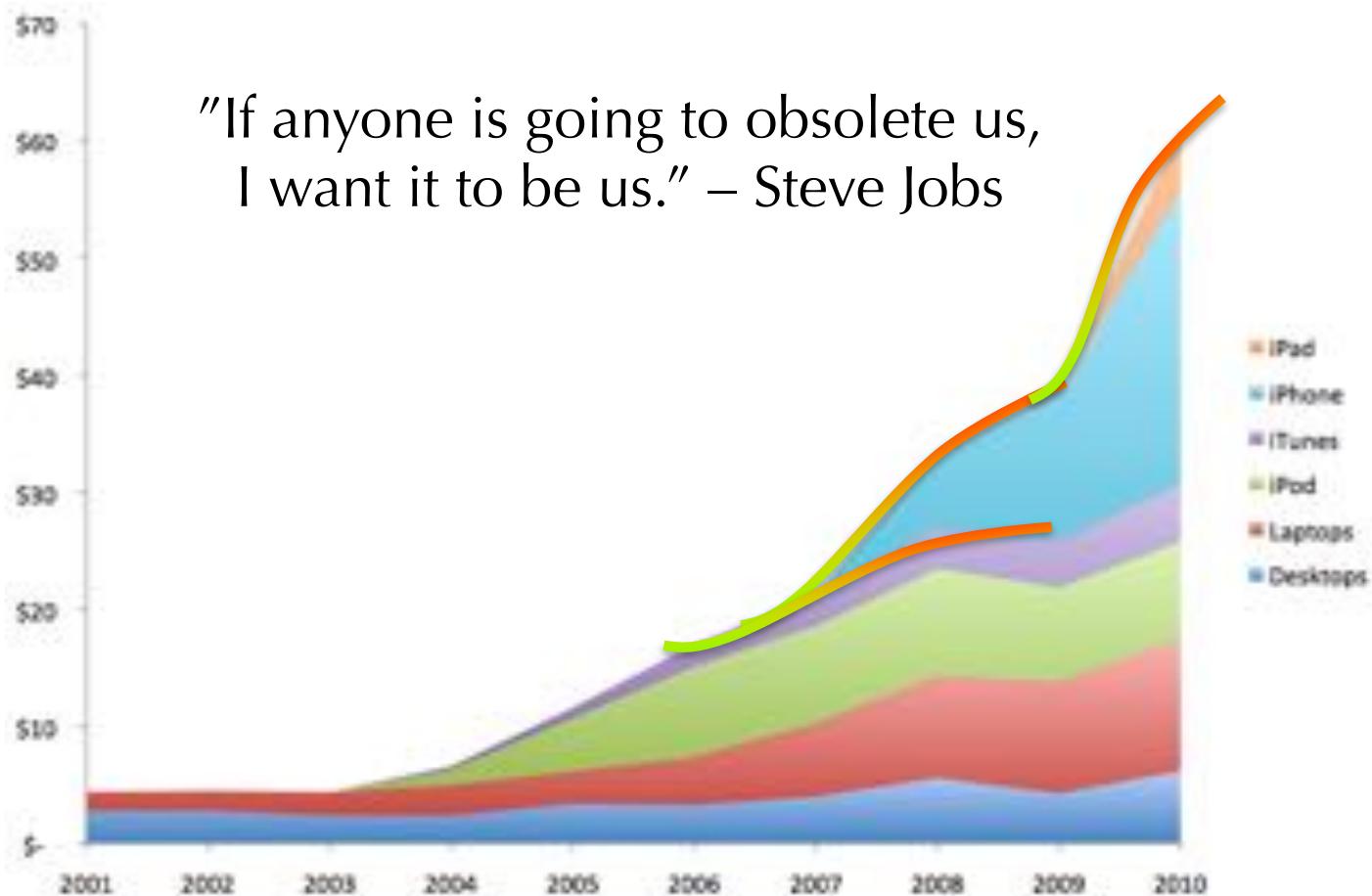


Data source: Google Trends (www.google.com/trends)

iPhone sales growth is linear...

eXponential

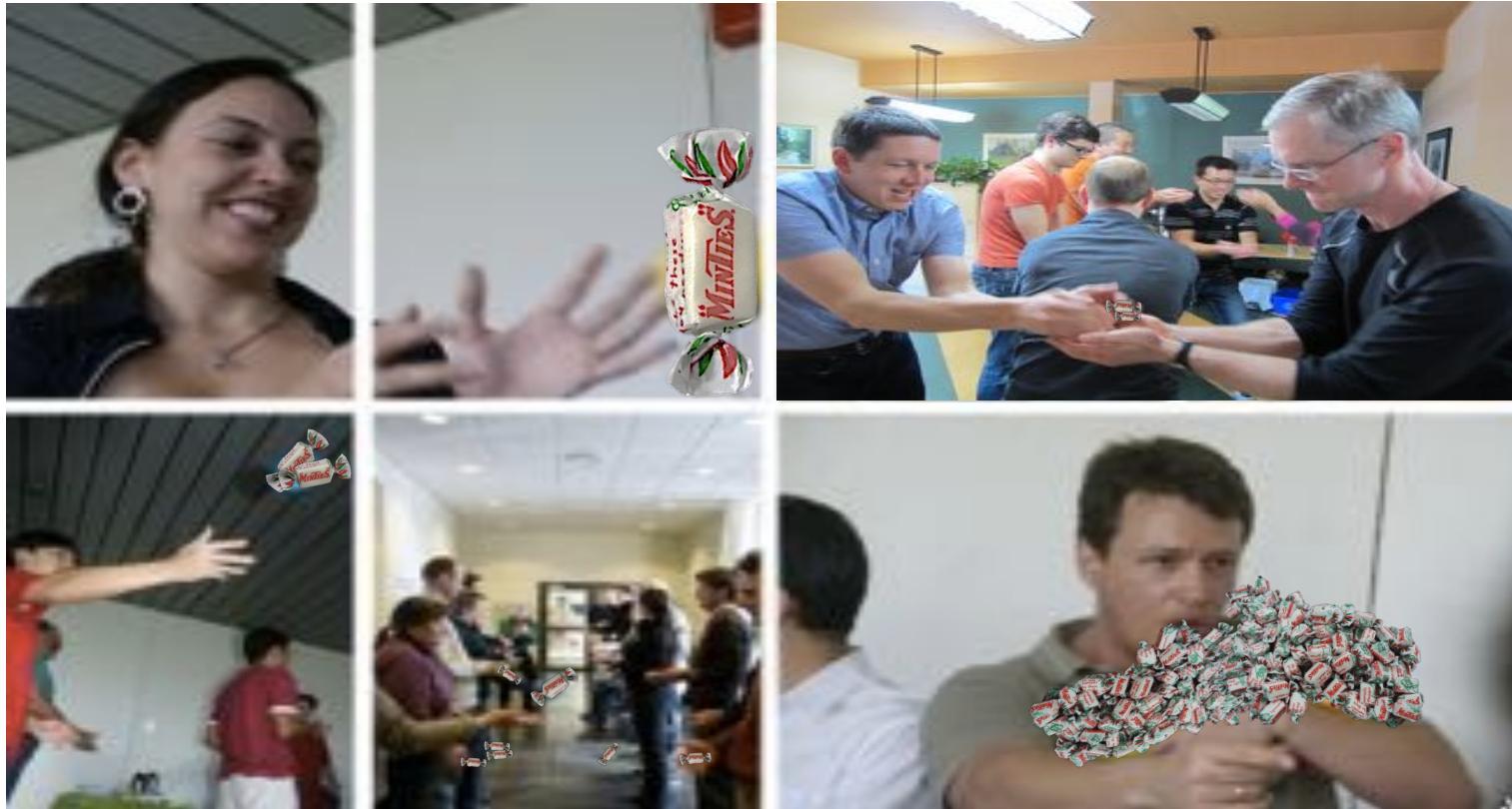
"If anyone is going to obsolete us,
I want it to be us." – Steve Jobs



Extropy begins with an Agile mindset.



An Exponential Game

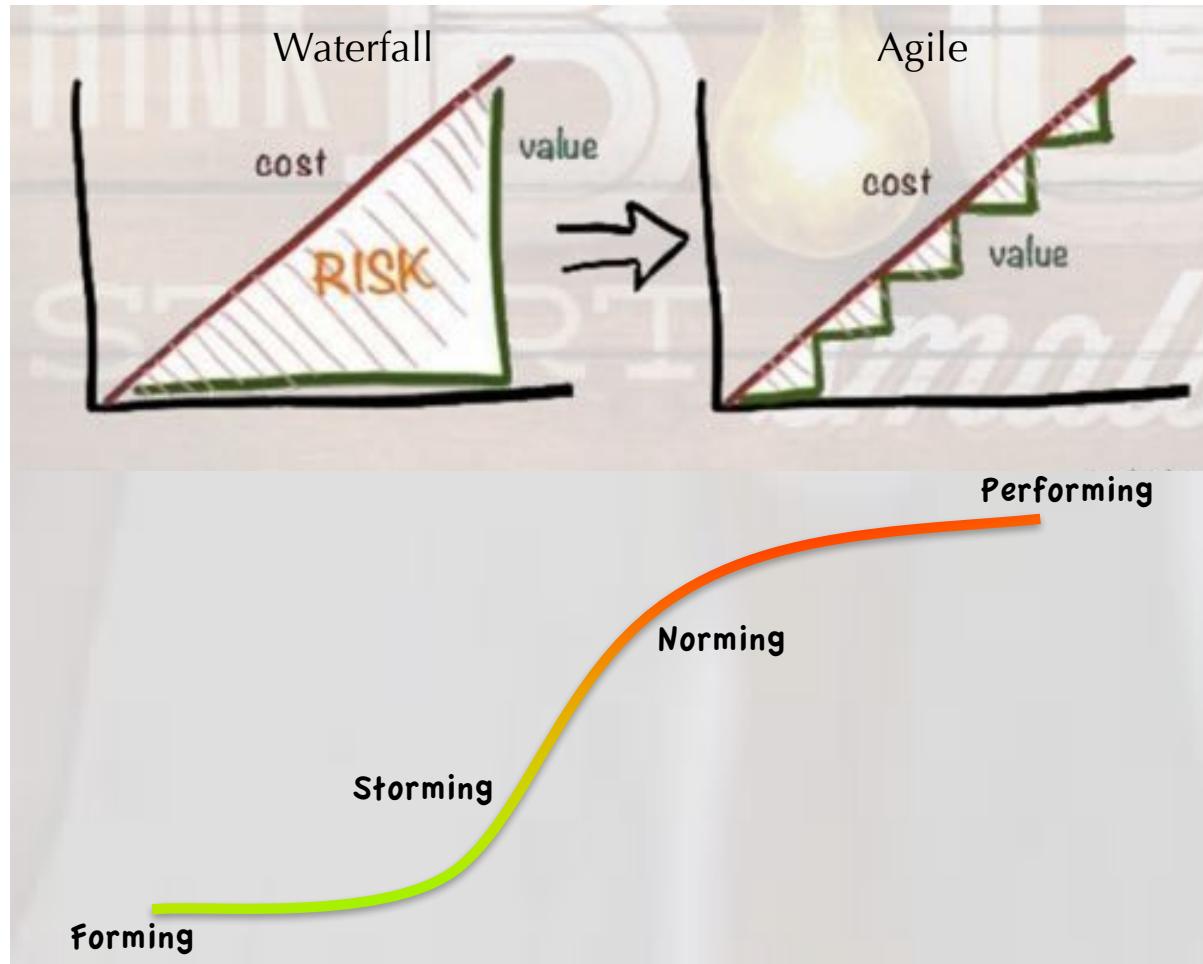


Ceremonies

Two Minute Sprints.
One minute Retro.
Estimate Throughput.

Solution Constraints

- Air-time! No containers!
- Minties stop where they start!
- Don't pass left<->right!



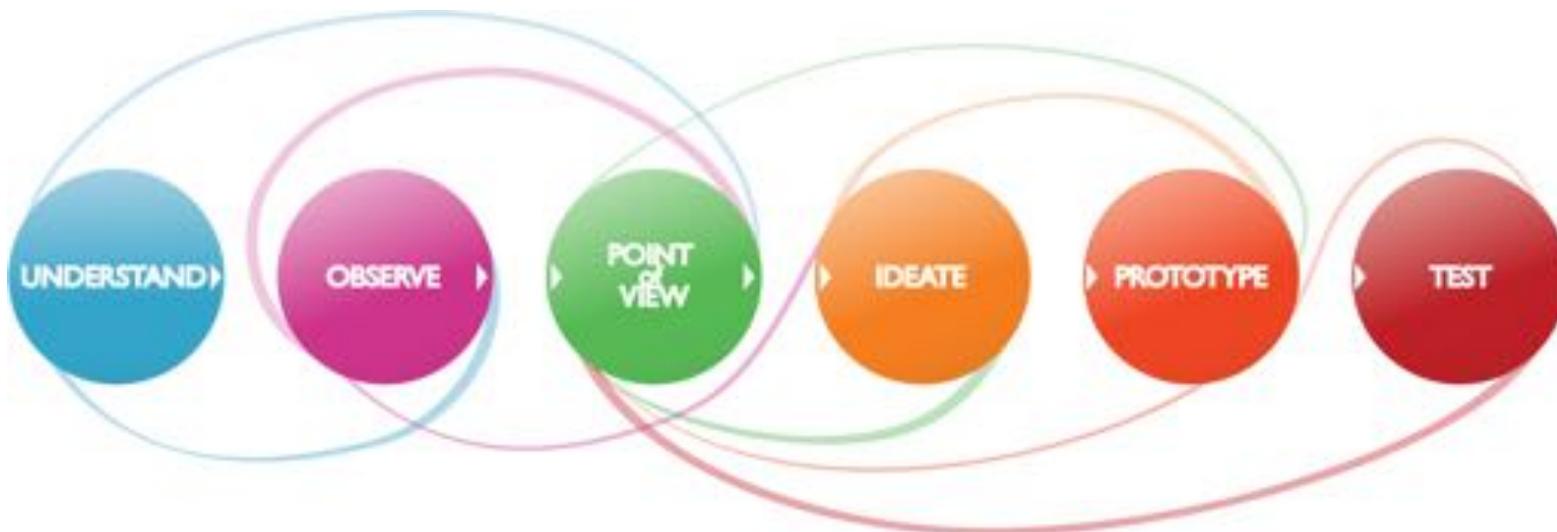
How do we open a bottleneck?

Simple design

- › Design means the elegance of minimum
- › Not look and feel; how the ecosystem works
- › Design, Delivery & Devops -> hand-in-glove



Simple



Design Thinking isn't about simple

Simple



2003 Nokia N-Gage. “The Taco Phone”. Apps. Internet. MP3s. Everything iPhone did ... 4 years before iPhone.

Simple



2004 Nokia N-Gage QD. Design Thinking by IDEO.
Improved look and feel. Sank like a stone.

Simple



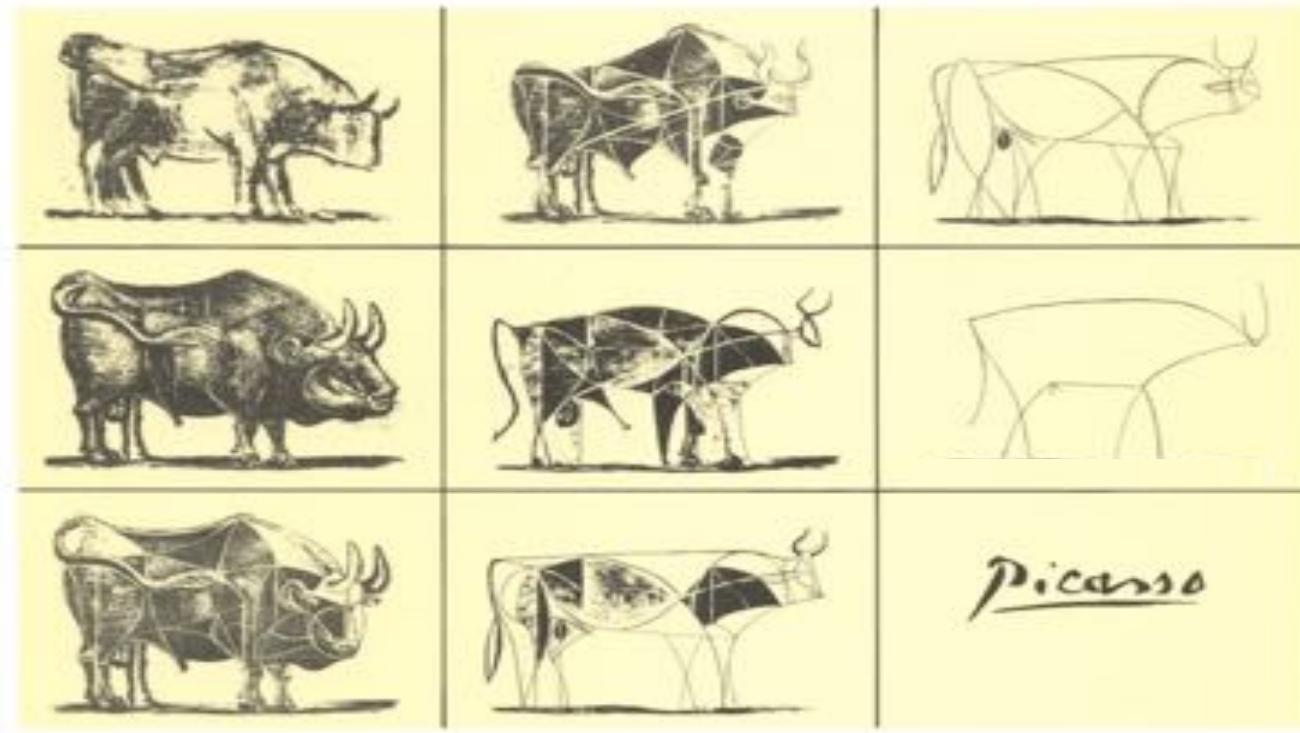
2008 Nokia N-Gage Next Gen. Design Thinking by IDEO.
An app store for Nokia phones. Discontinued 2009.

Simple



iPhone 2007 threw Design Thinking out the window.
“People don't know what they want till you show them.”.

Simple



"Design means the elegance of minimum.
It isn't look and feel. It's how it works." -- Jobs

Simple



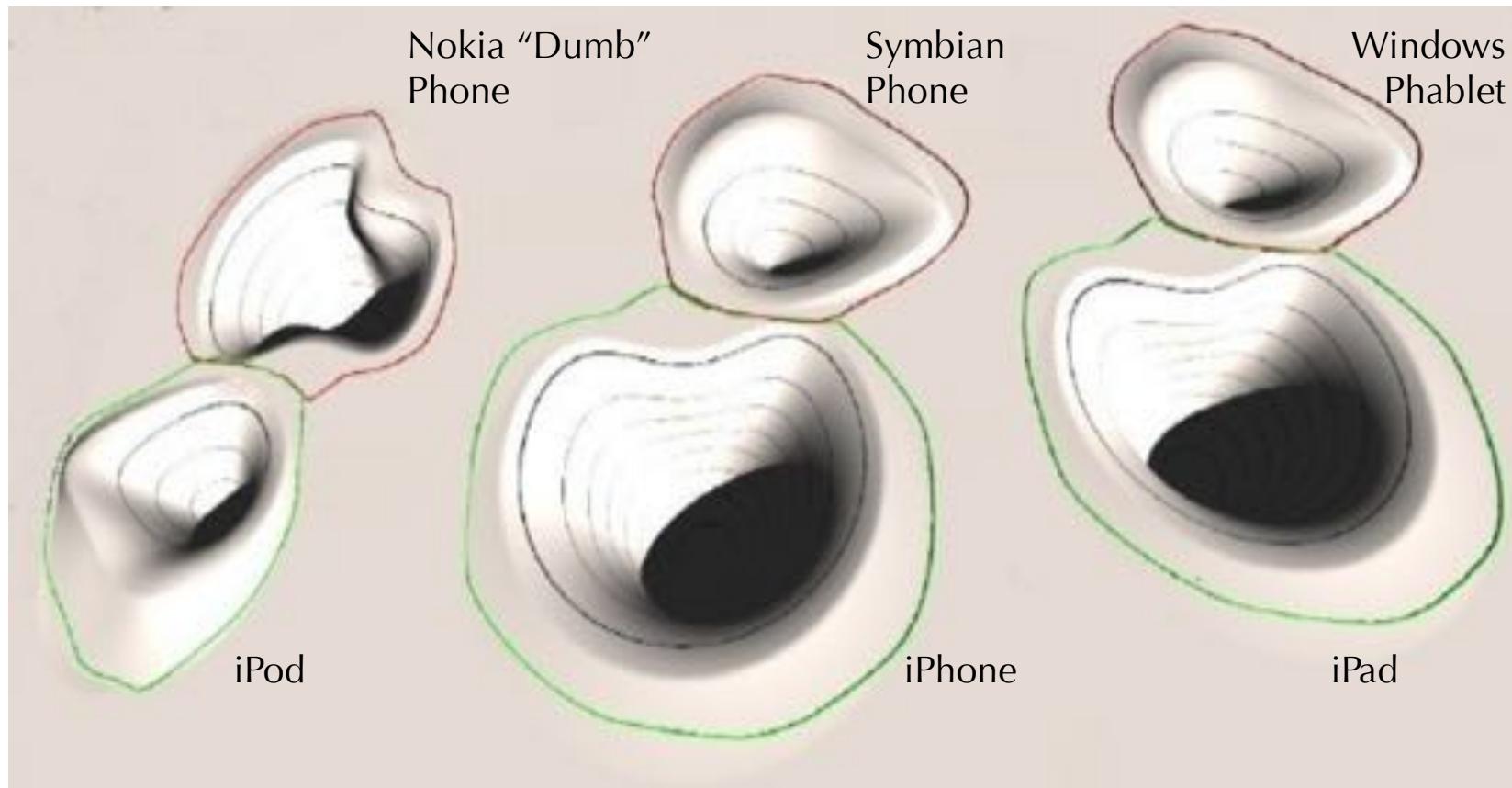
Design Space isn't flat. It's curved and dynamic.
Like spacetime.

Simple



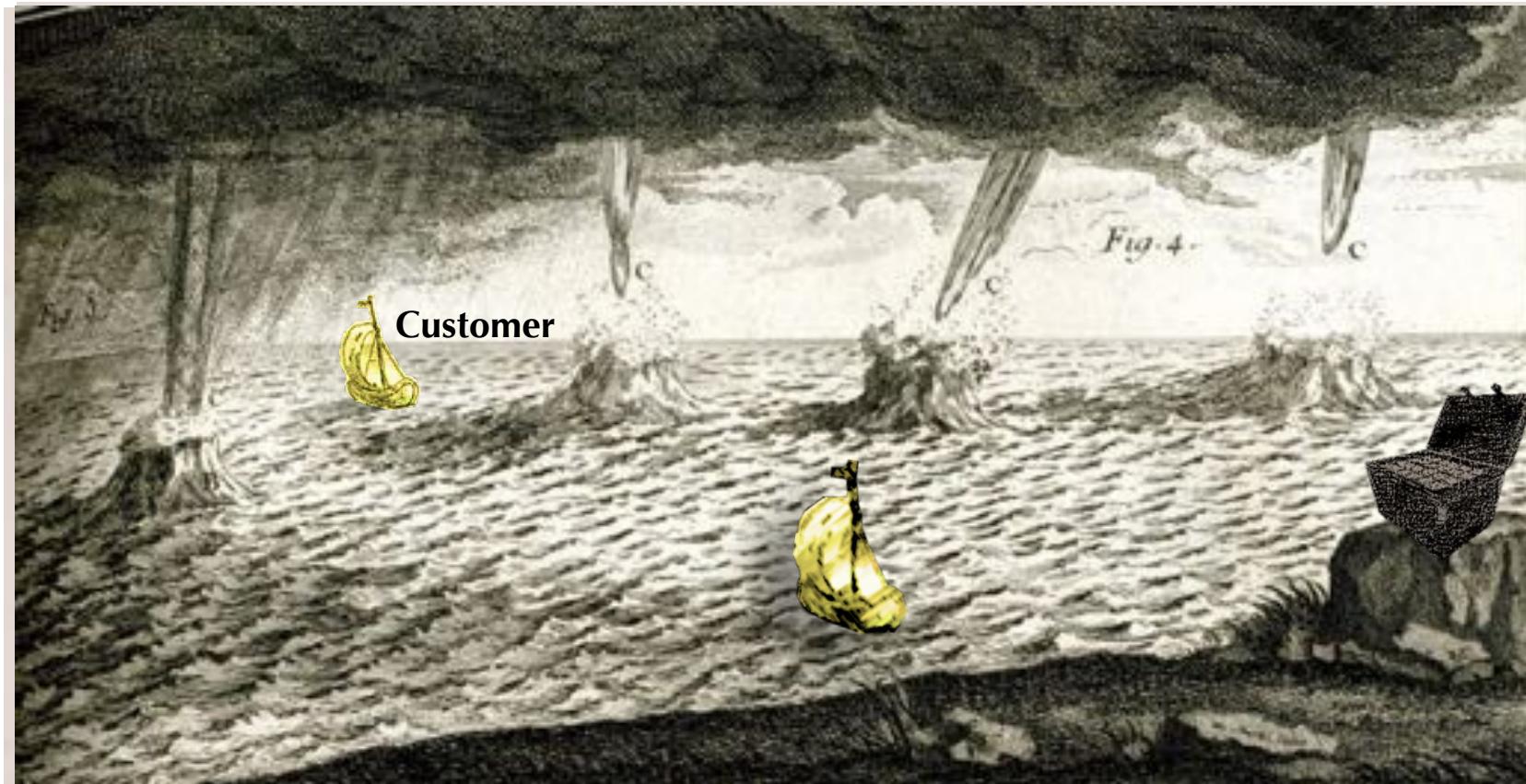
Kano explains why.

Simple



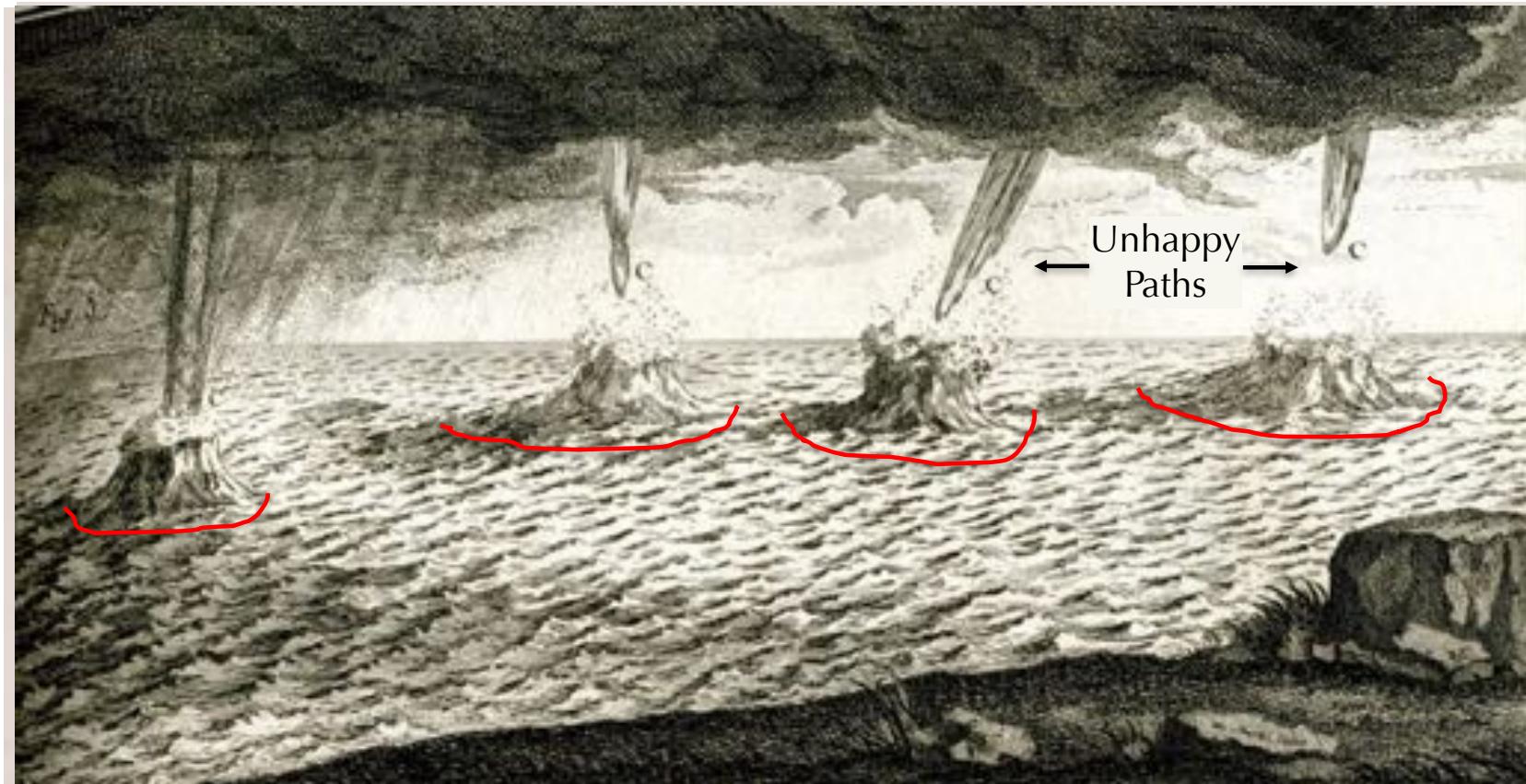
Products aren't devices. Devices only represent products.
Products are “how it works”. They're service ecosystems.

Simple



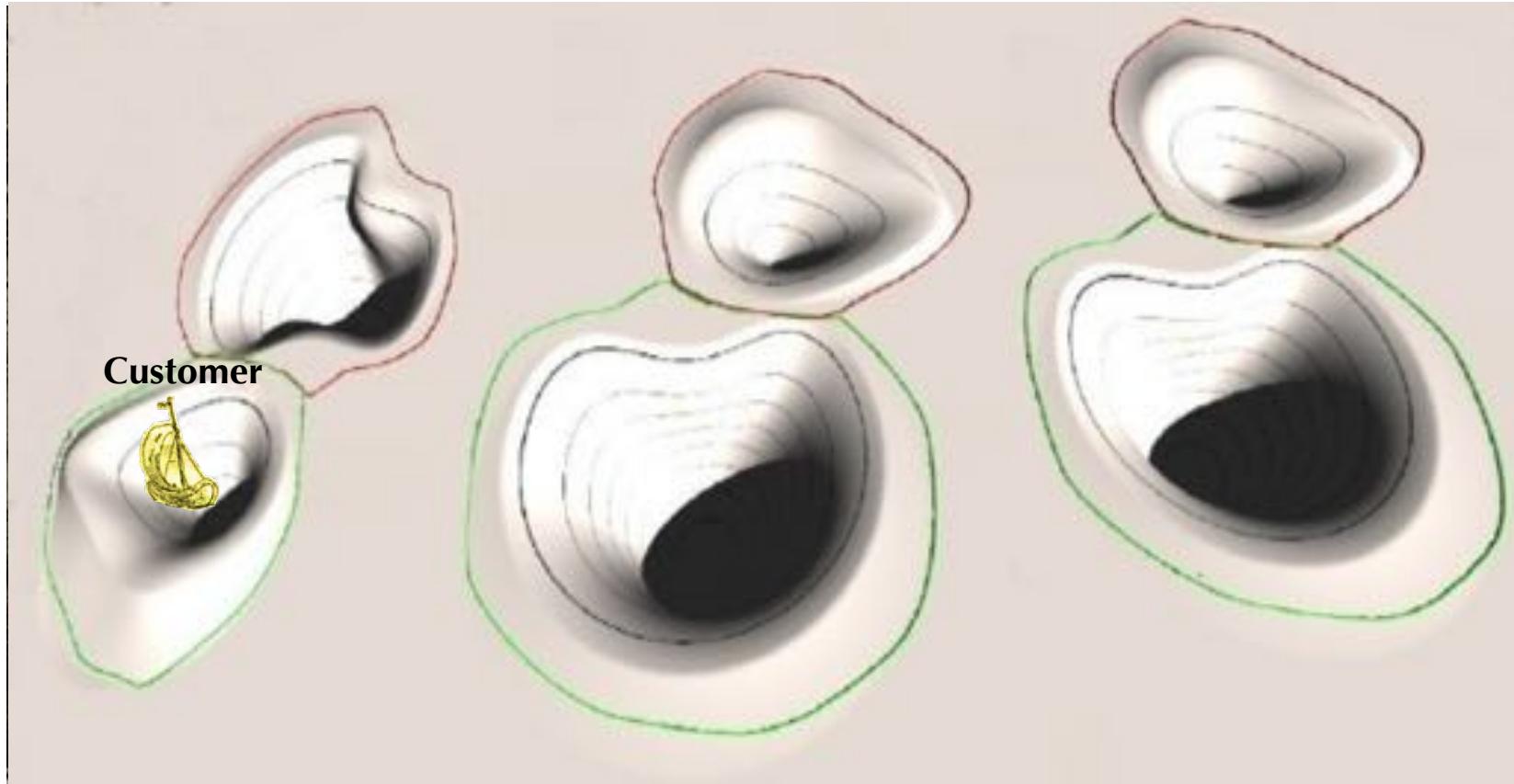
Service ecosystems are defined by their “Pirate Metrics”.
Acquisition. Activation. Retention. Referral. **Revenue**.

Simple



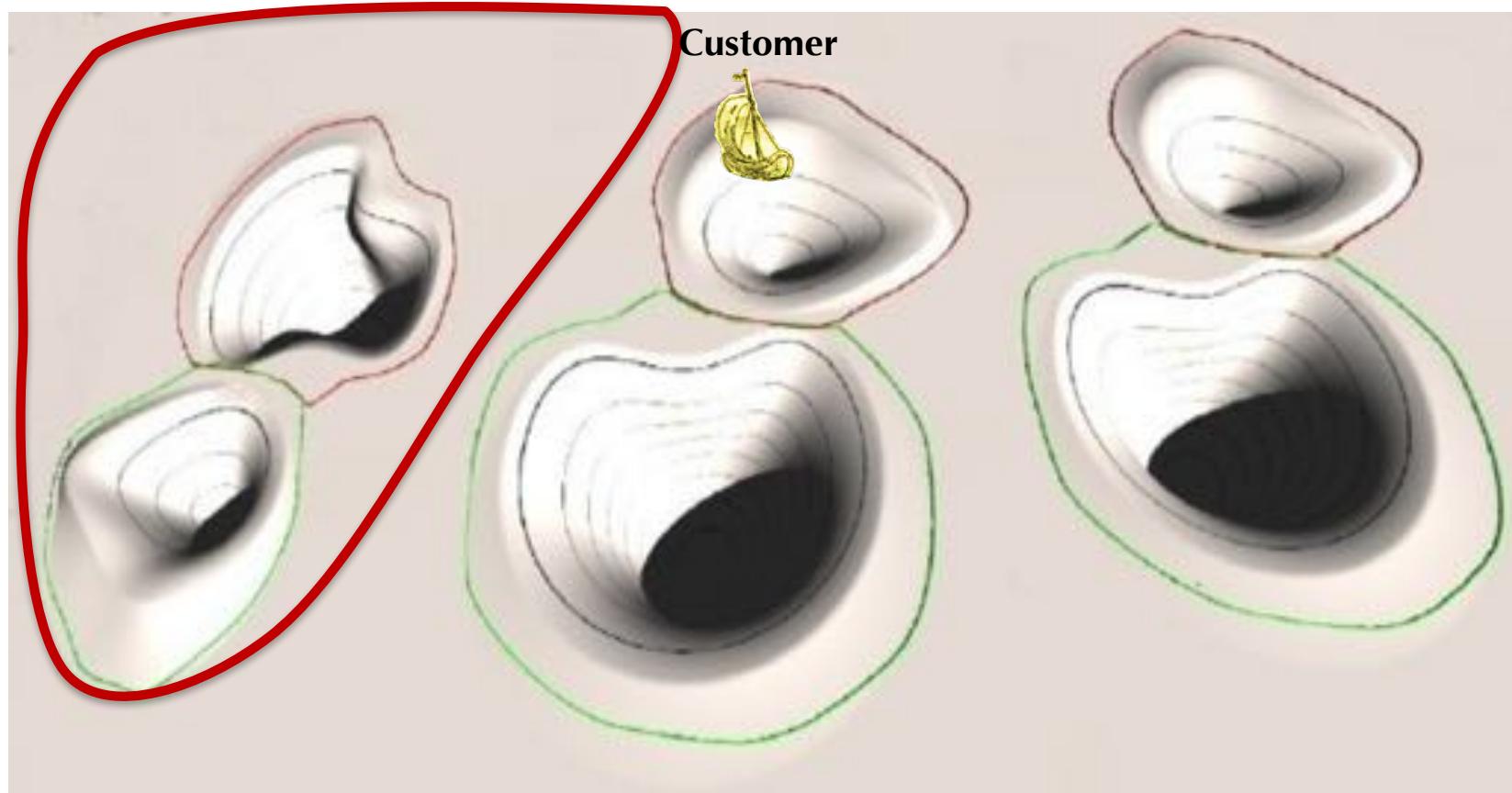
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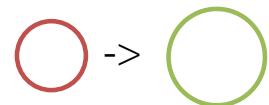


Designing iPhone ...

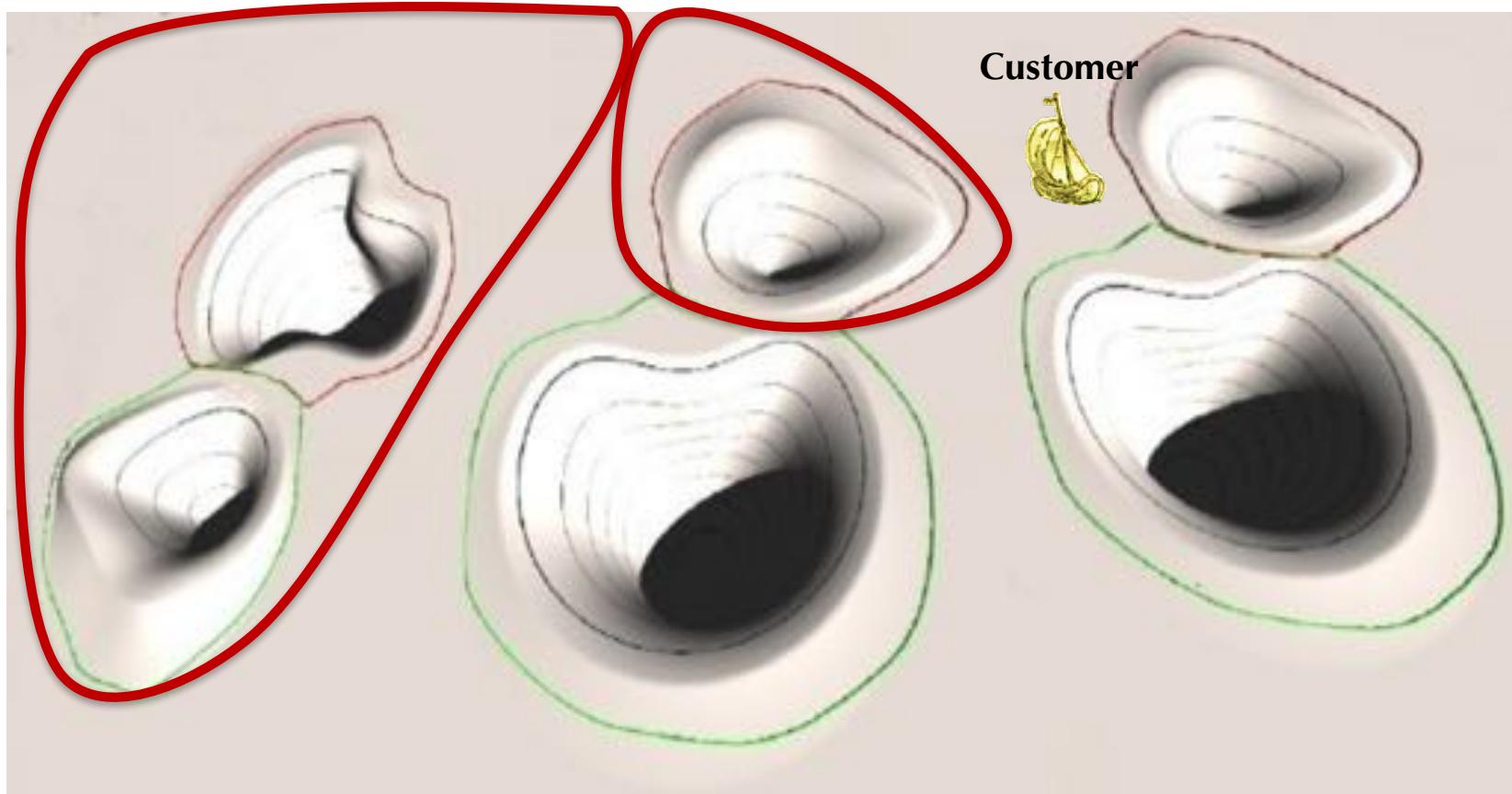
Simple



Acquisition: take the product out of the big box stores.



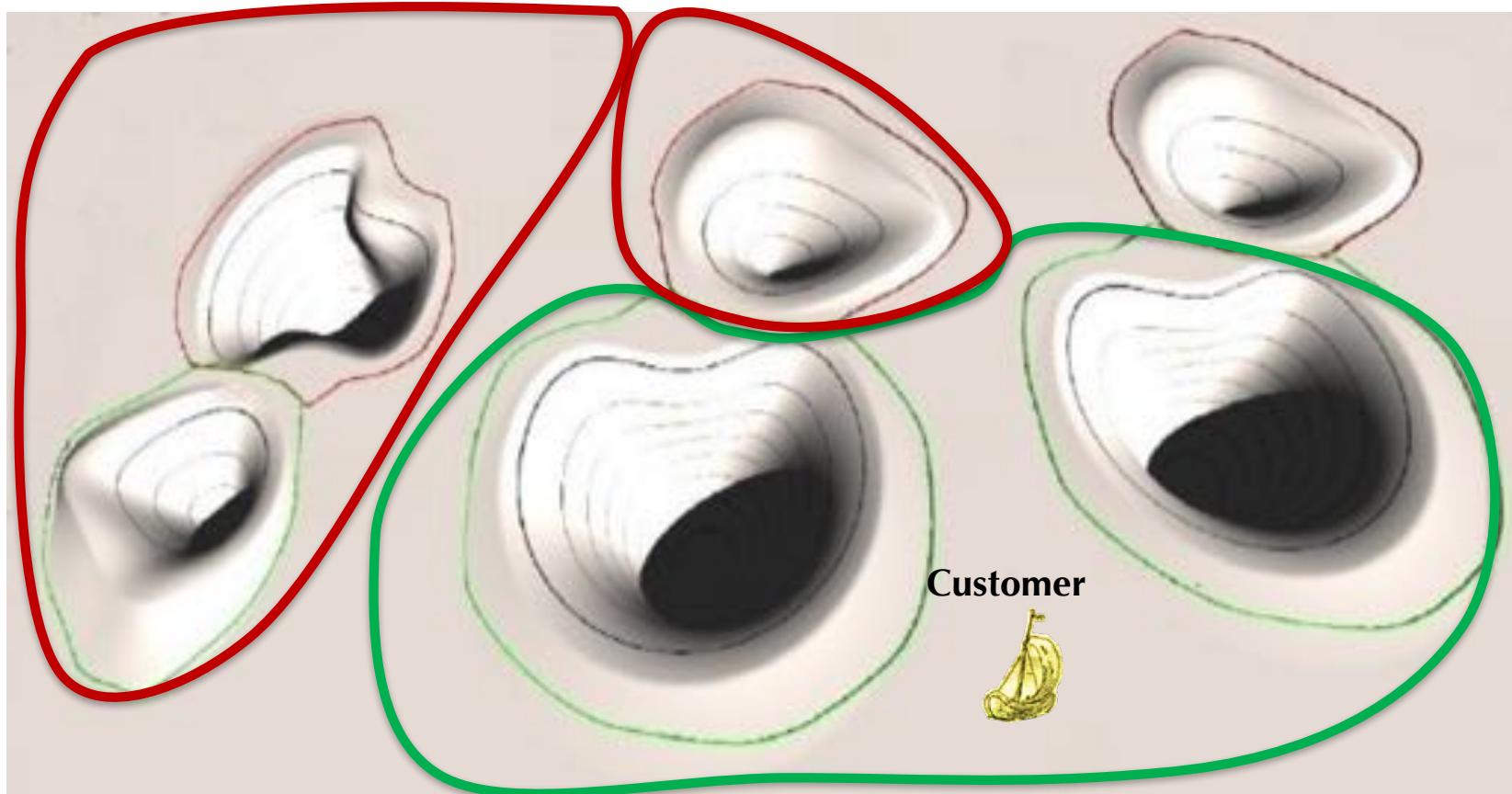
Simple



Retention: multi-touch UX obsoletes all hard-button phones.



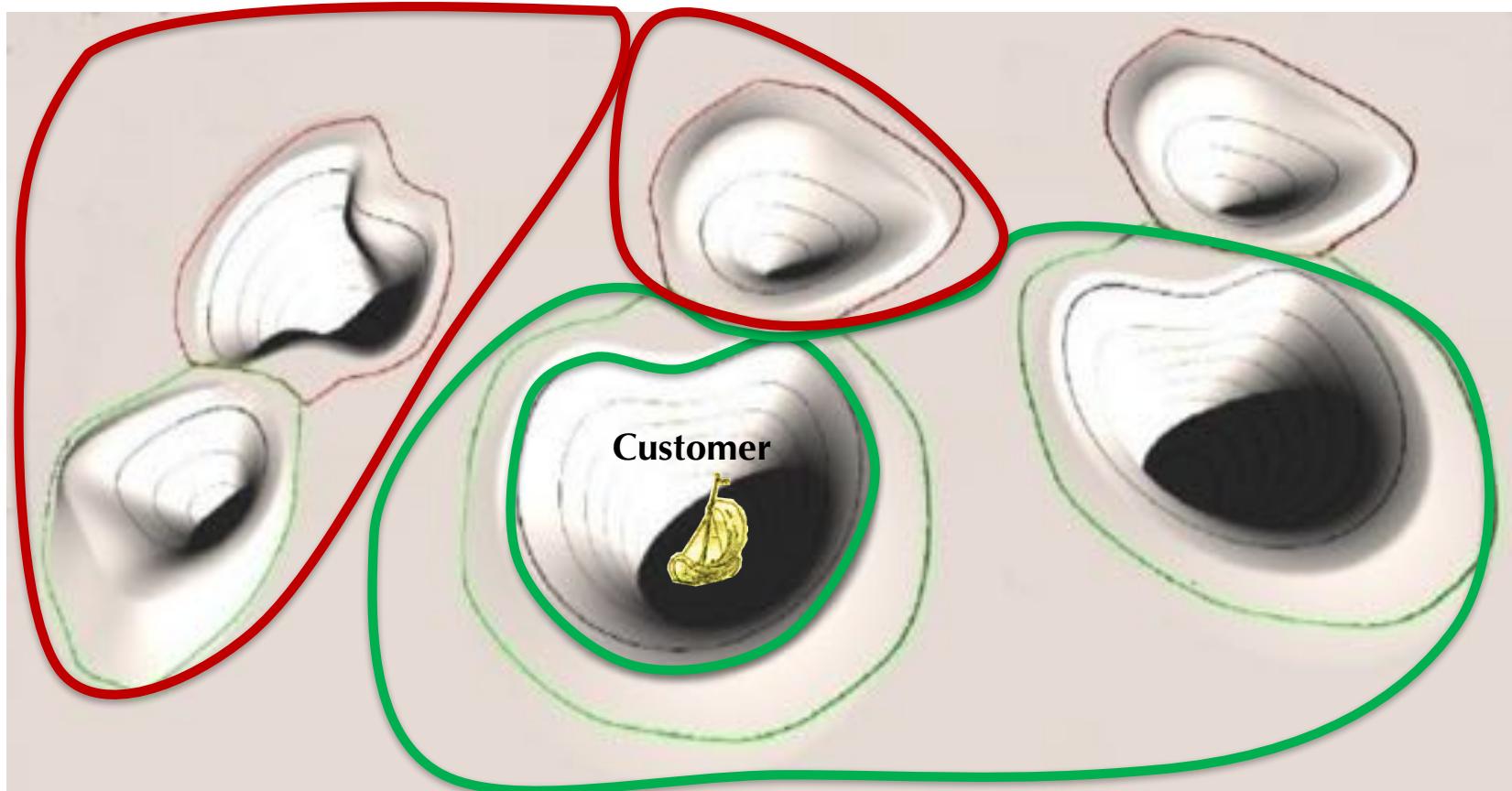
Simple



Activation: migrate iTunes accounts and media to iPhone



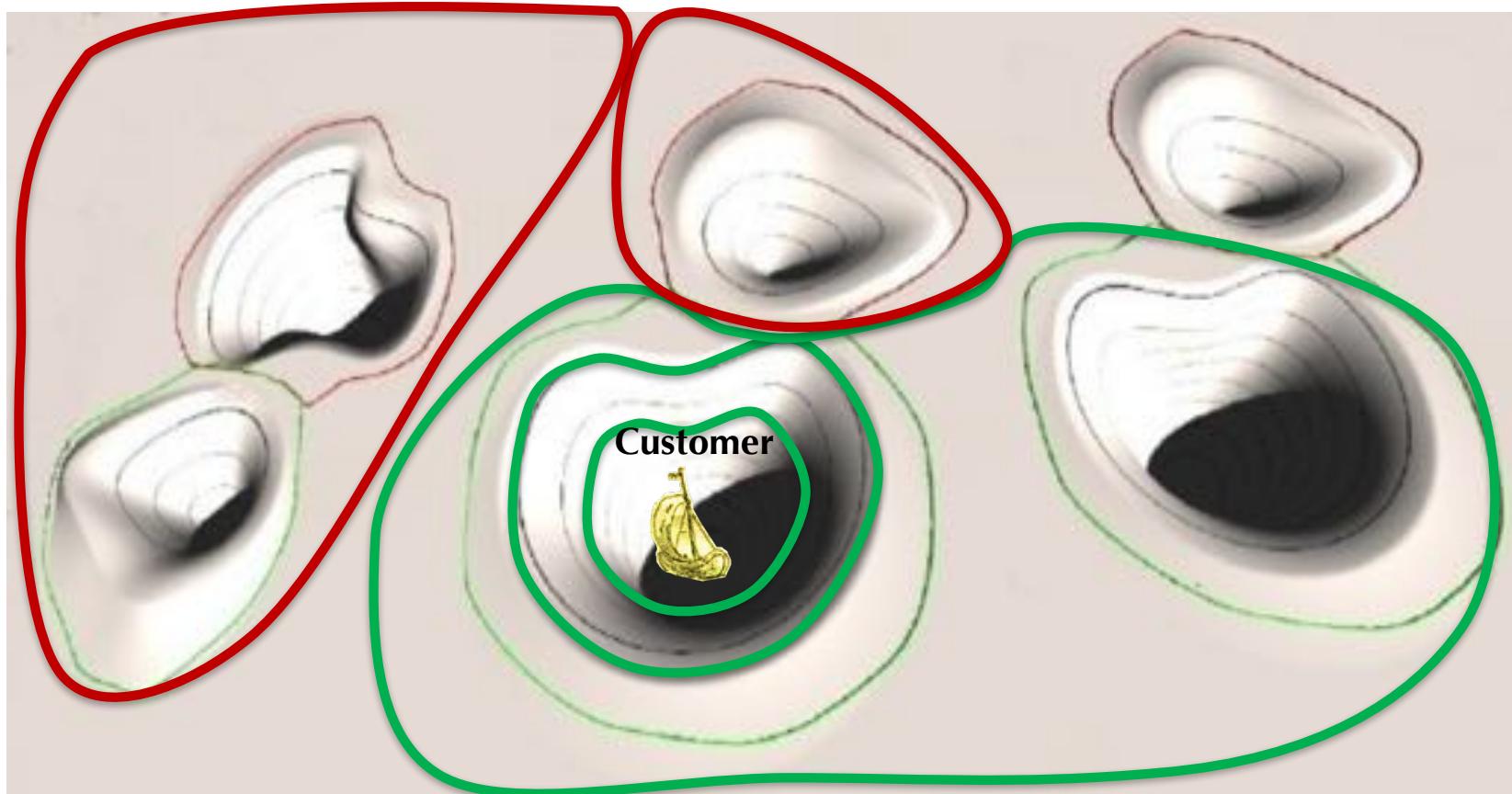
Simple



Referral: iMessage provides free SMS – but only to iOS users.



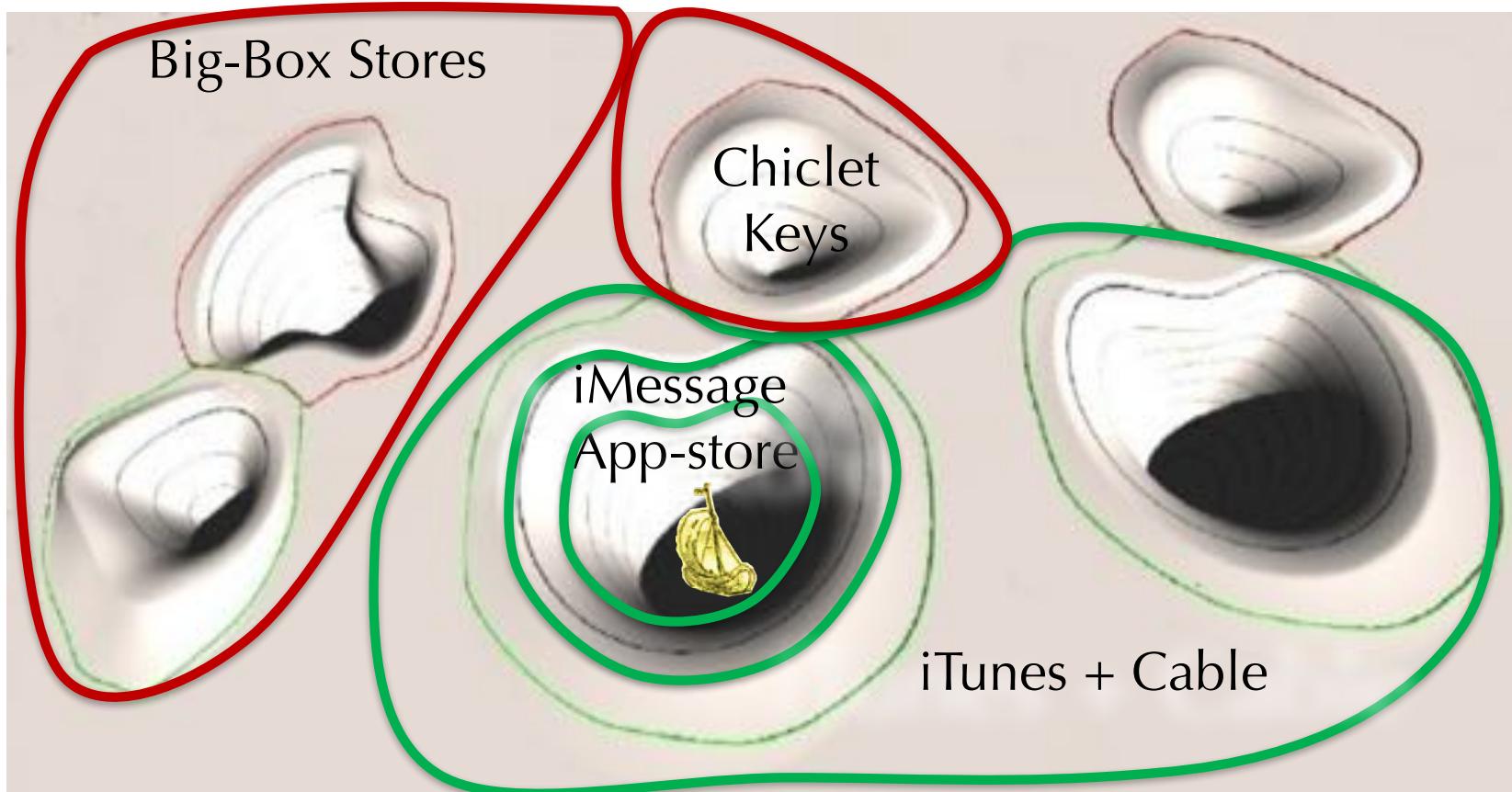
Simple



Revenue: App Store obsoletes the software retailing industry.



Simple



Acquisition



Activation



Retention



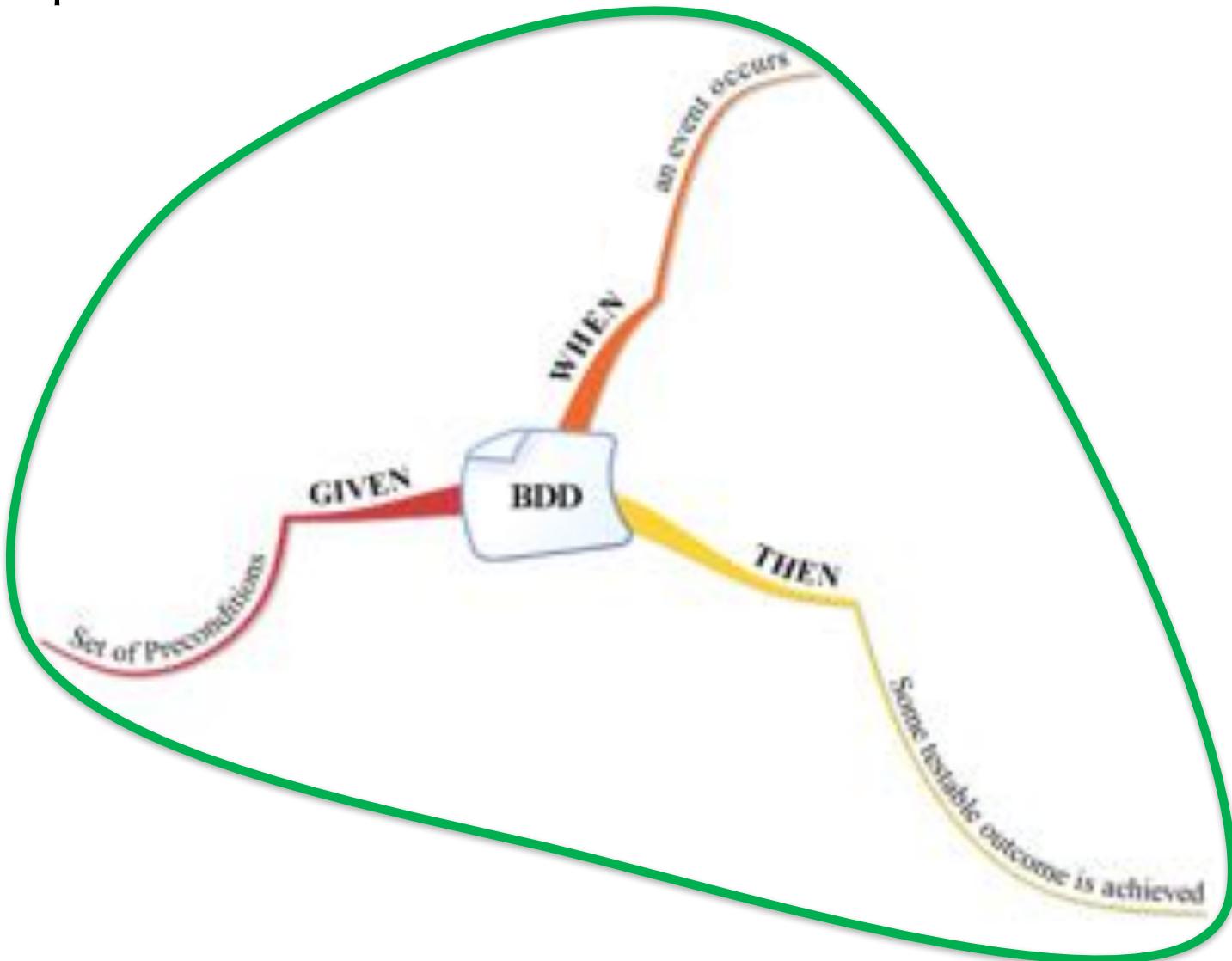
Referral



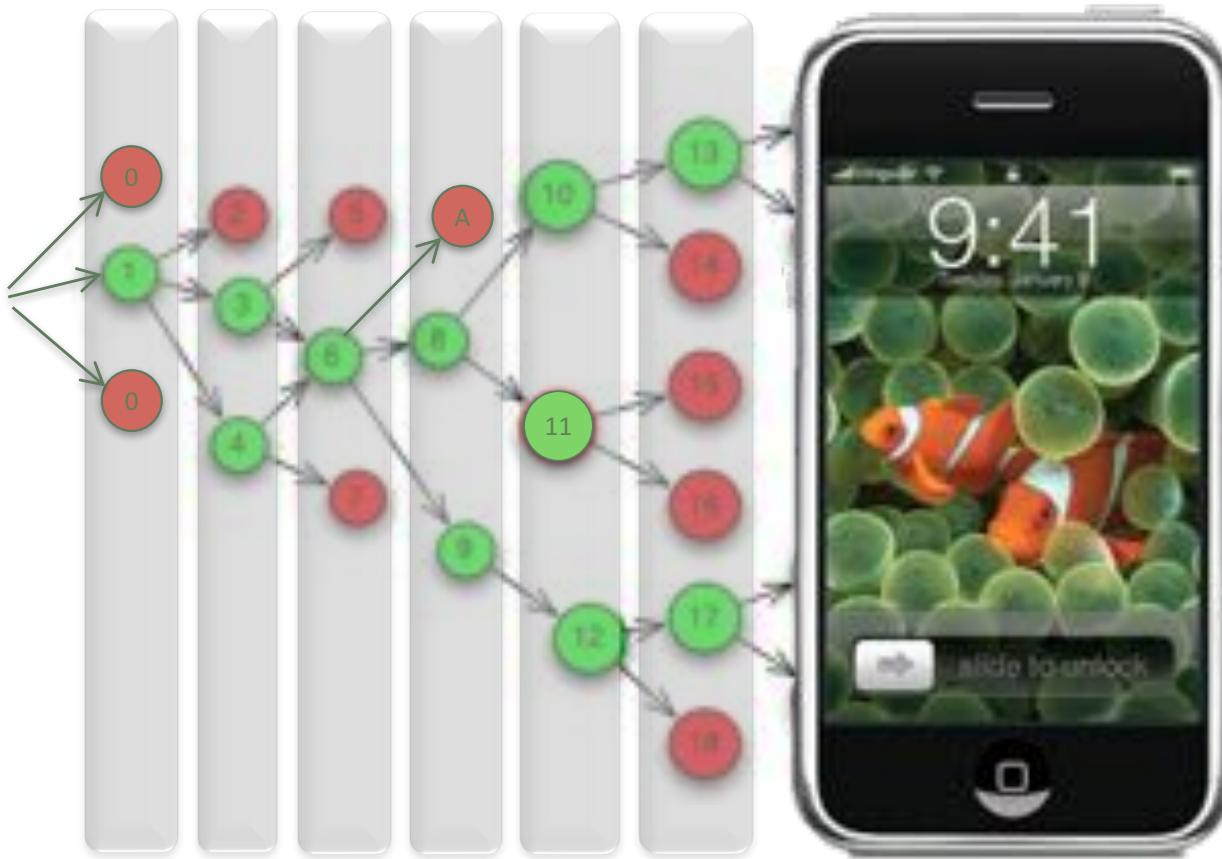
Revenue



Simple

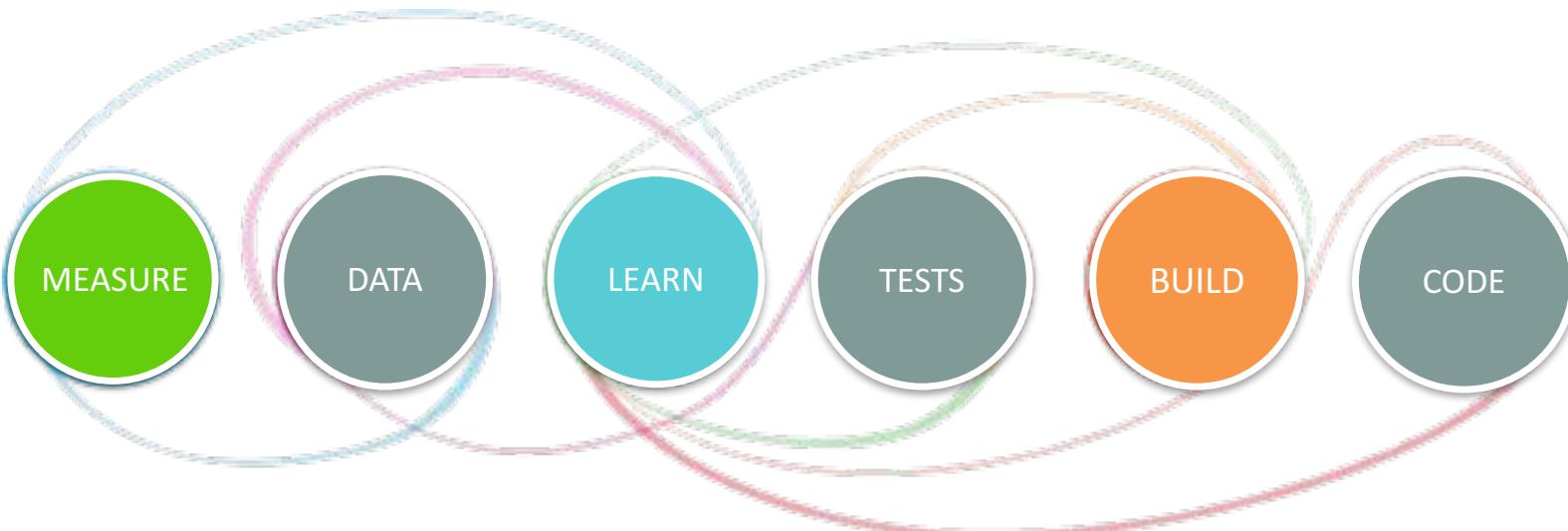


Simple



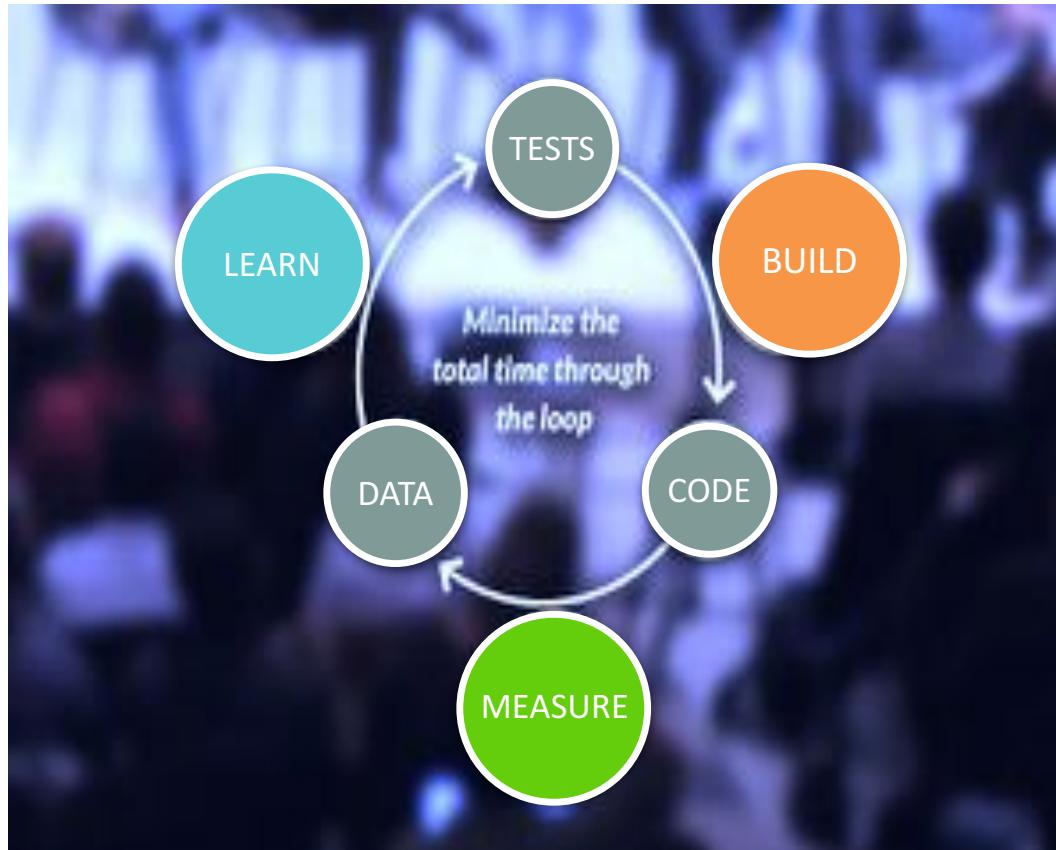
"Spikes" build, measure and learn by a process of elimination.
Prioritized, breadth-first, parallel, "set-based" design.

Simple



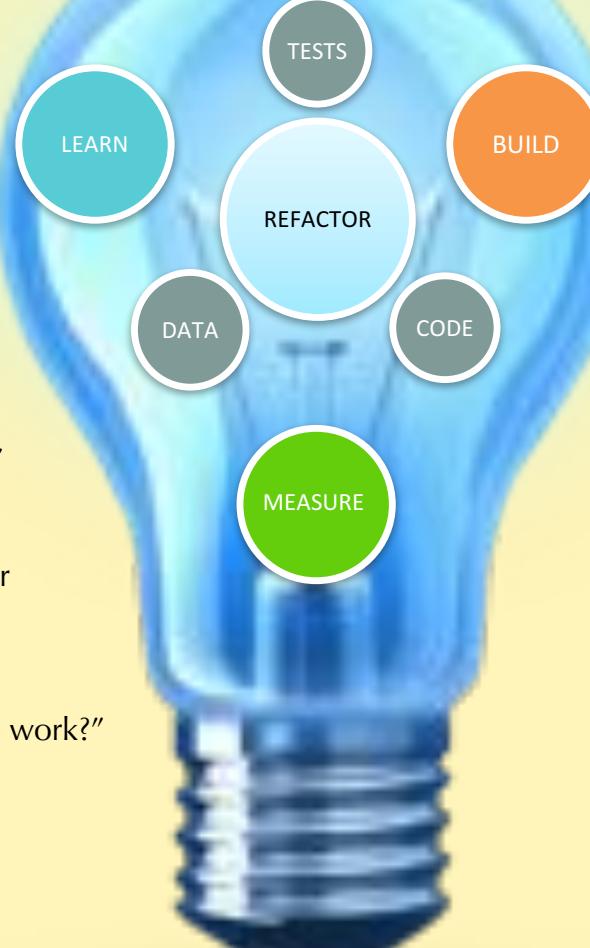
How to refactor all this into
Jobs' "elegance of minimal"?

Simple



Lean Startup + BDD

Simple Design

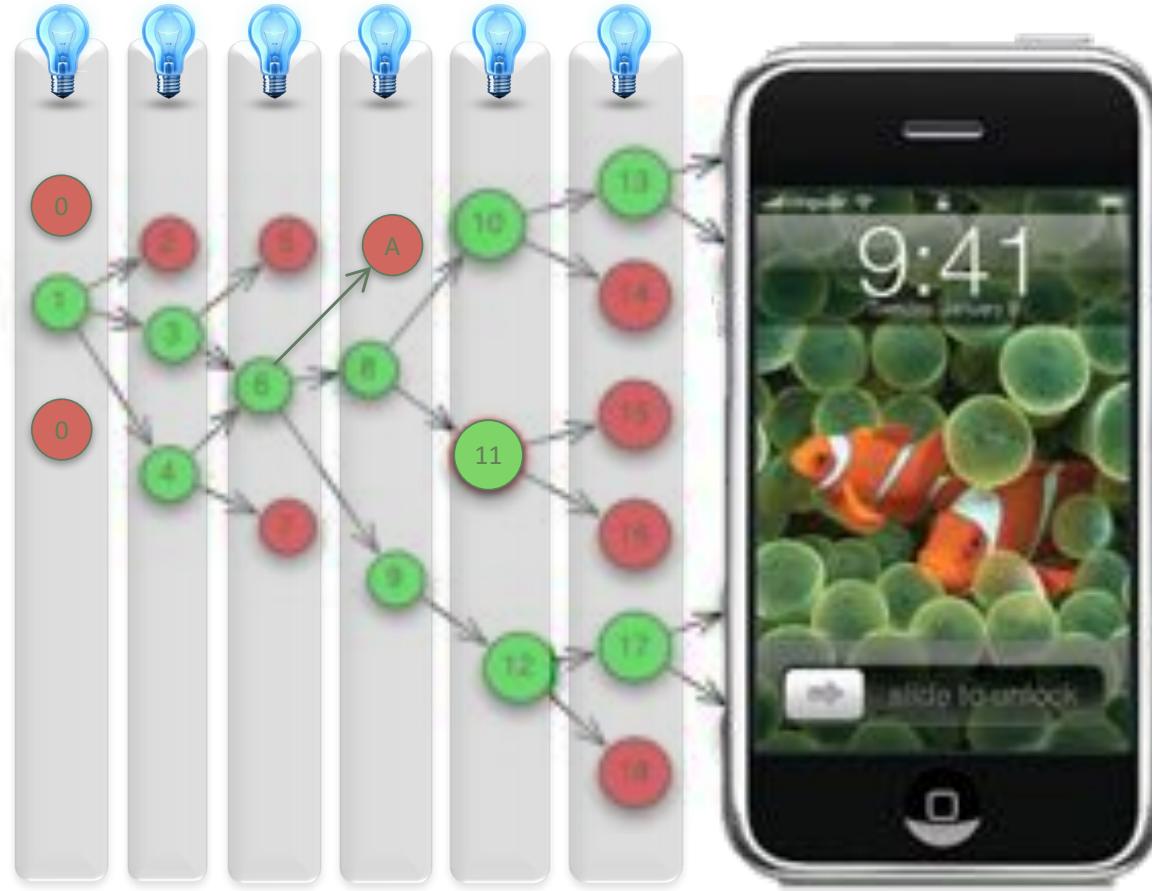


"Add value by removing that without."
-- Ron Jeffries

"Each and every declaration of behavior
should appear once and only once."
-- Kent Beck

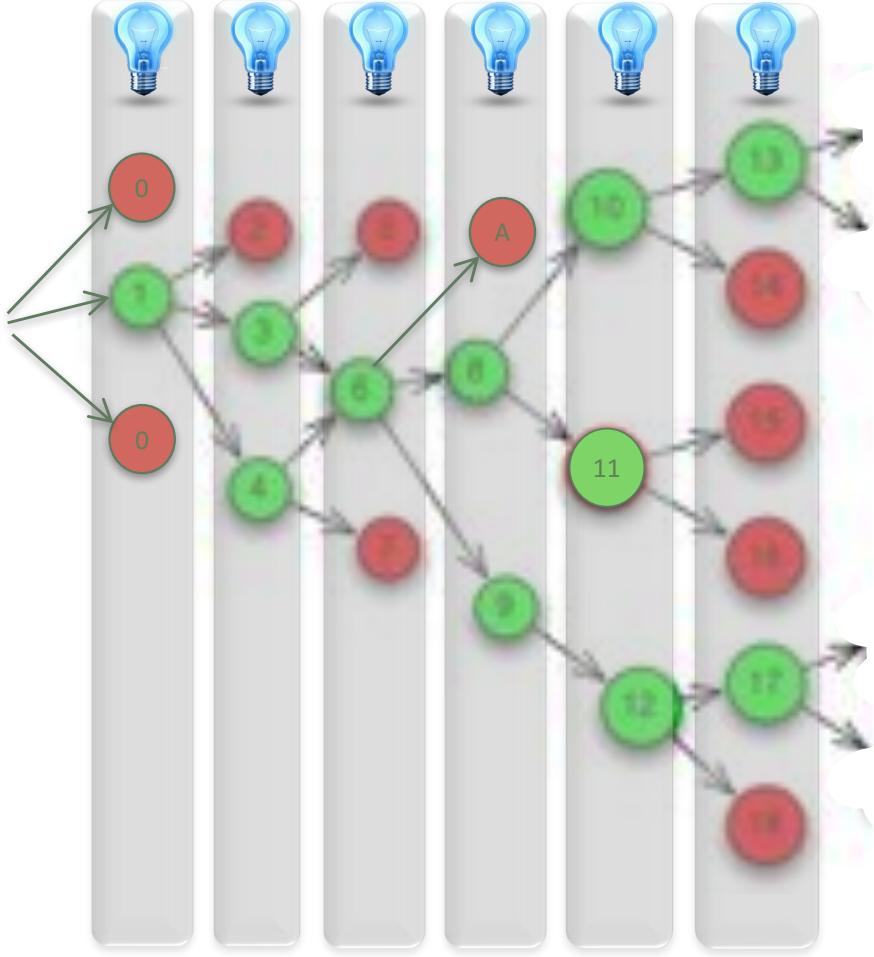
"What's the simplest thing that could possibly work?"
-- Ward Cunningham

Simple Design





Set-Based Design Game



Design a logo for our new product!

We're all designing the same thing.

2-person 2-minute Design Sprints.

What Acceptance Criteria did we learn?

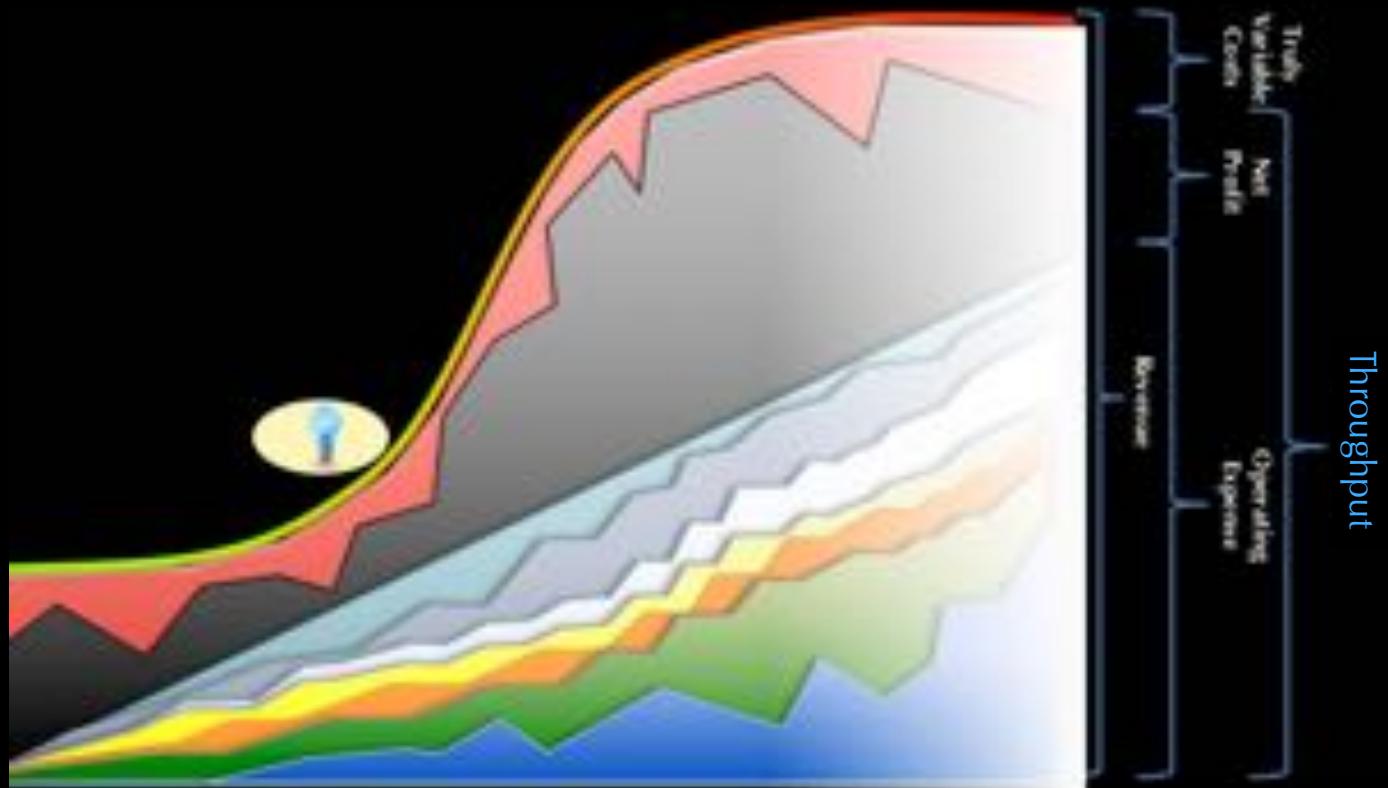
Knock Out Alternatives via LaaS!

Refactor!

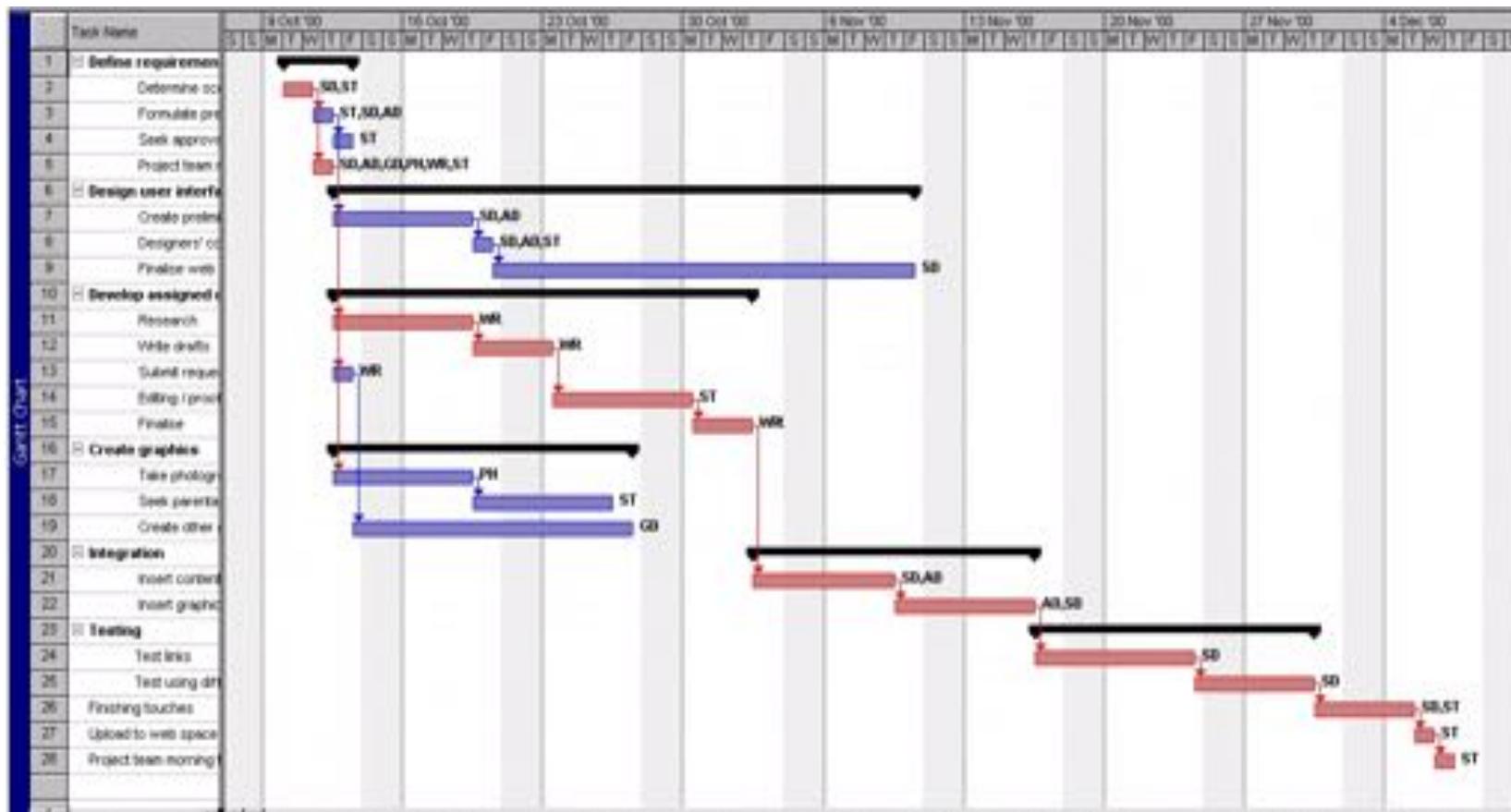
Repeat!

Continuous throughput

- › At any time there's **one** bottleneck constraint
- › Work on other constraints is premature
- › Because it won't increase **Throughput**

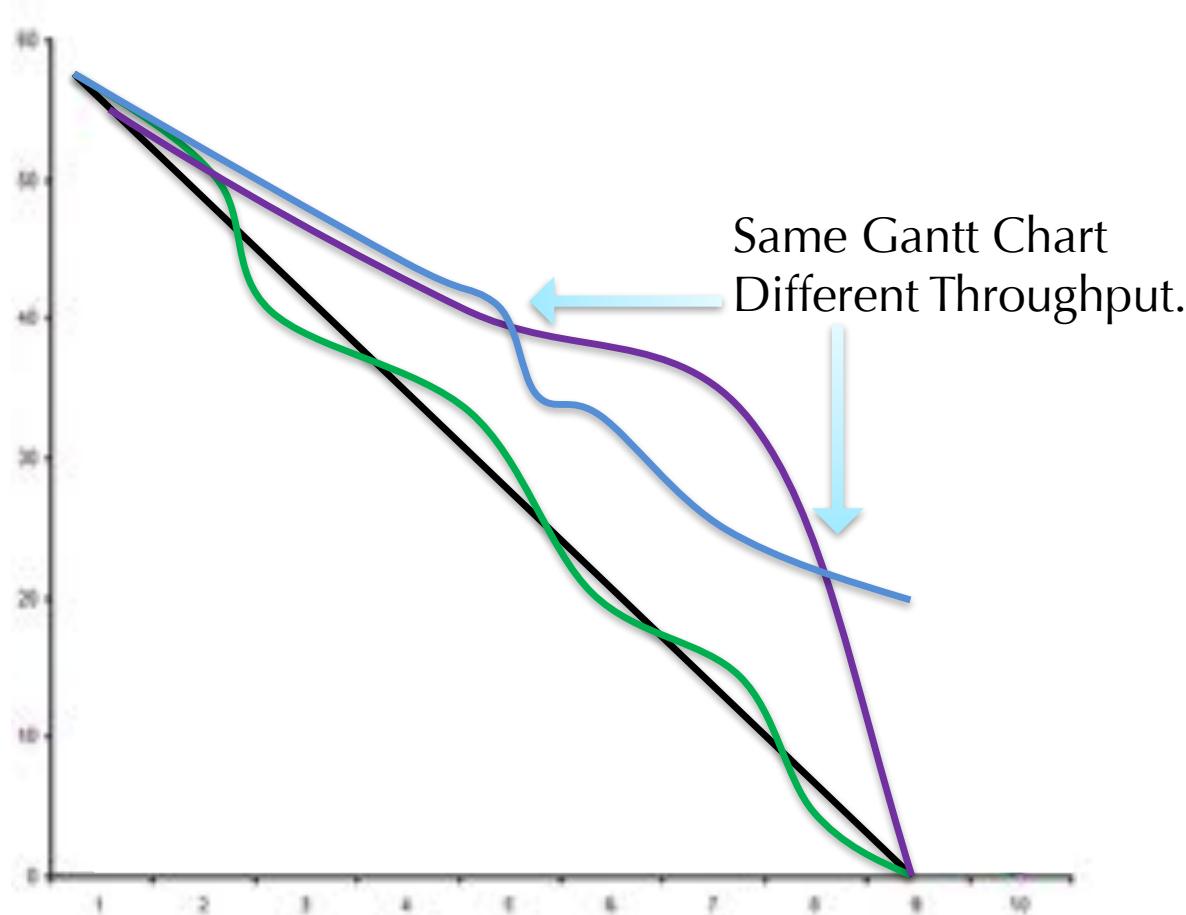


Continuous



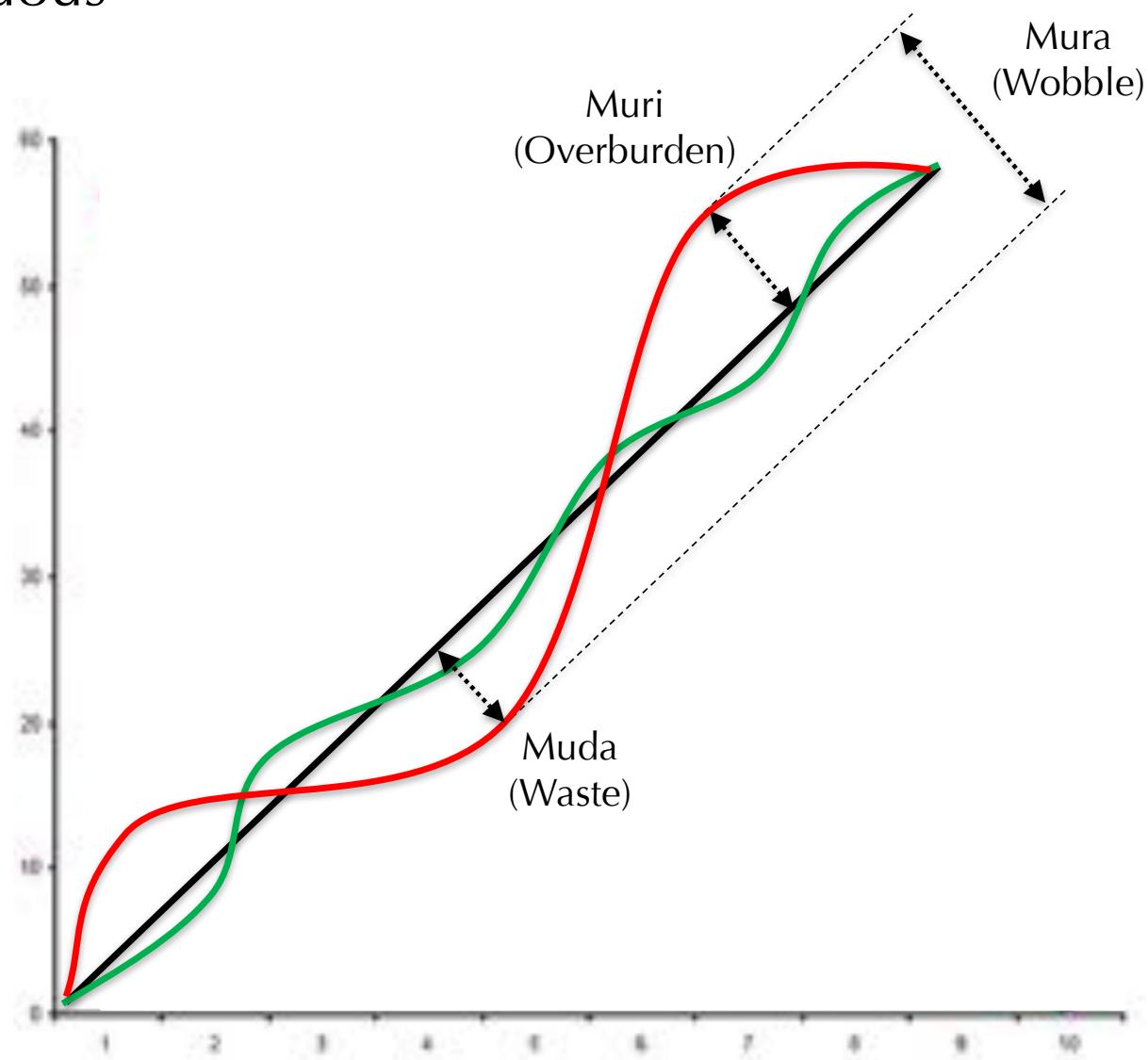
“Tell me how you measure me and I will tell you how I will behave. If you measure me in an illogical way do not complain about illogical behavior.” – Eli Goldratt

Continuous

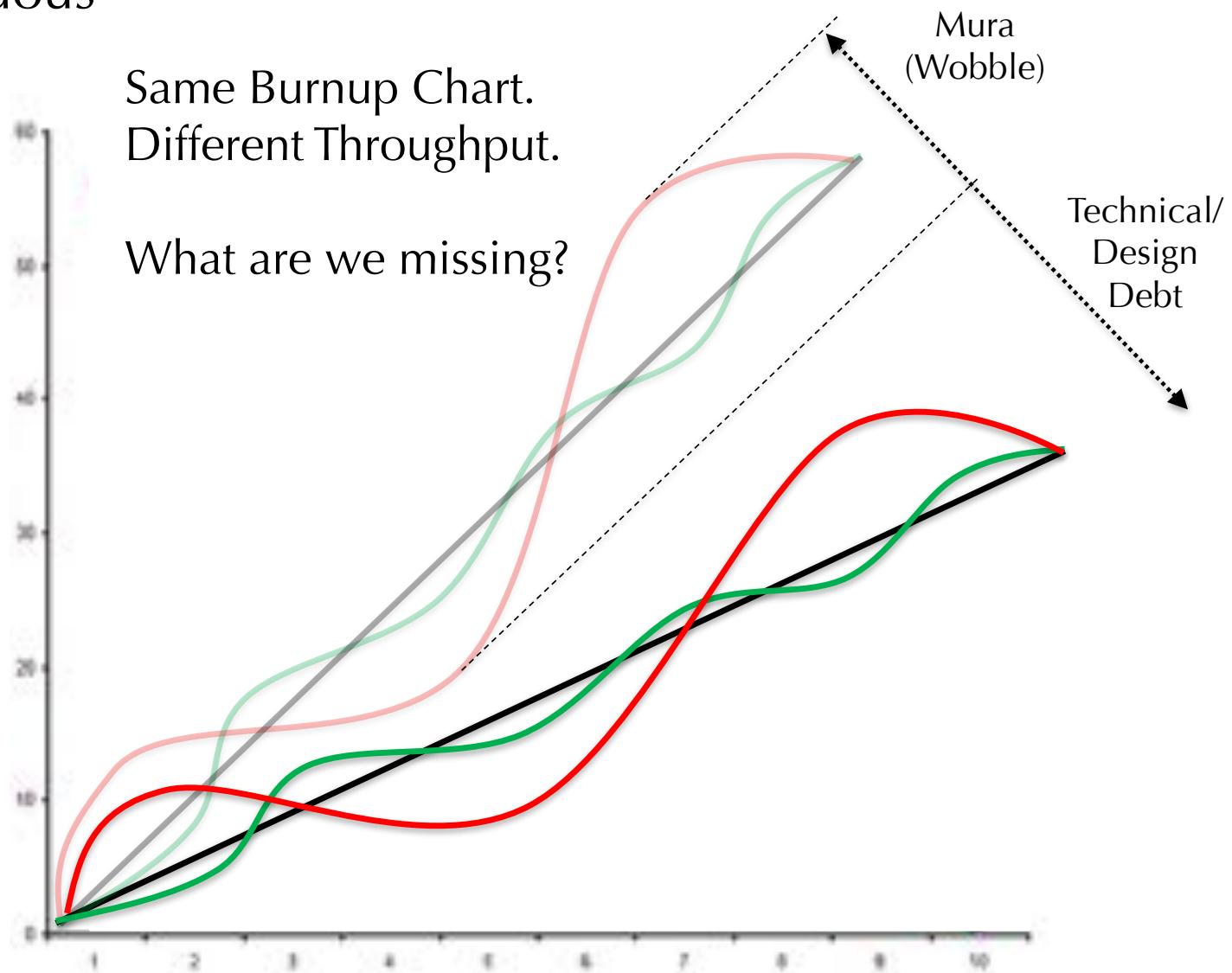


Continuous optimization of throughput
prevents illogical behavior.

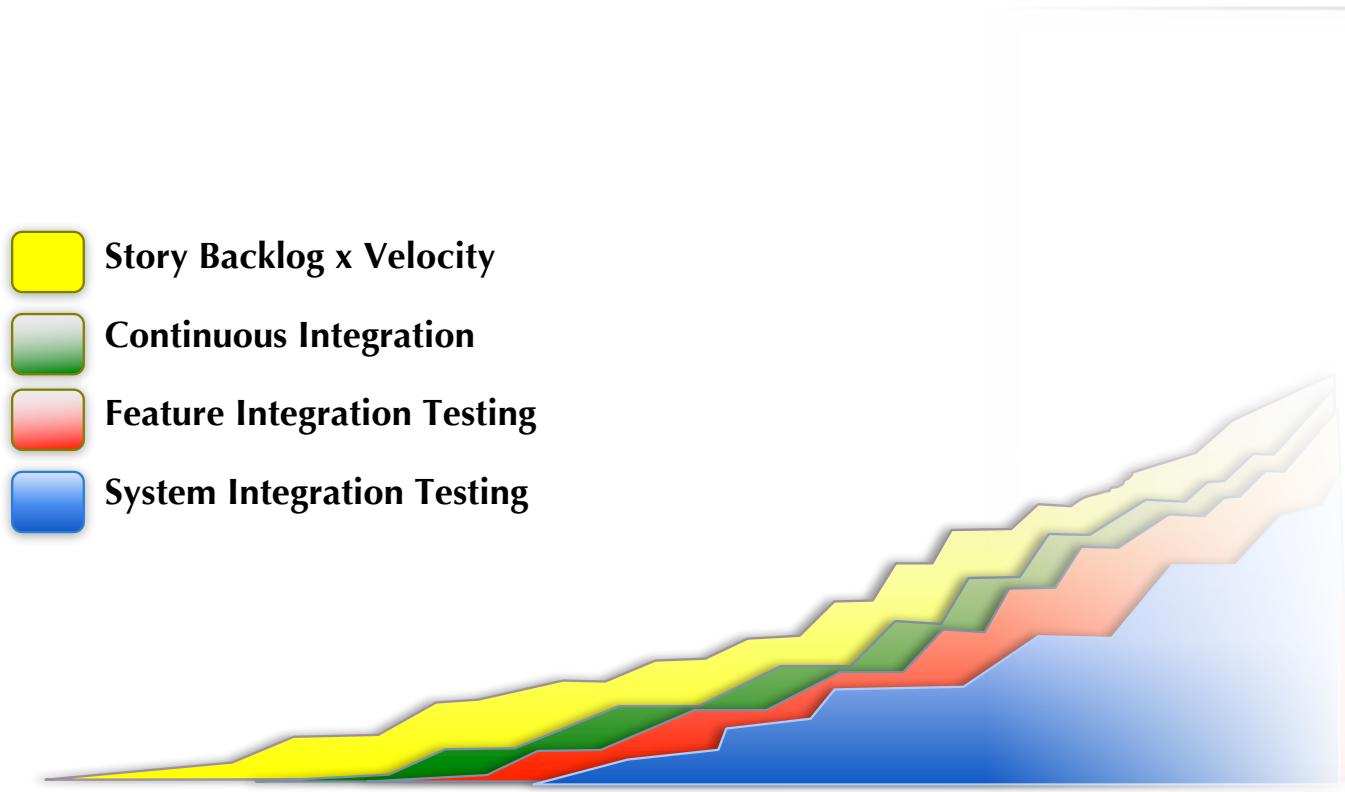
Continuous



Continuous

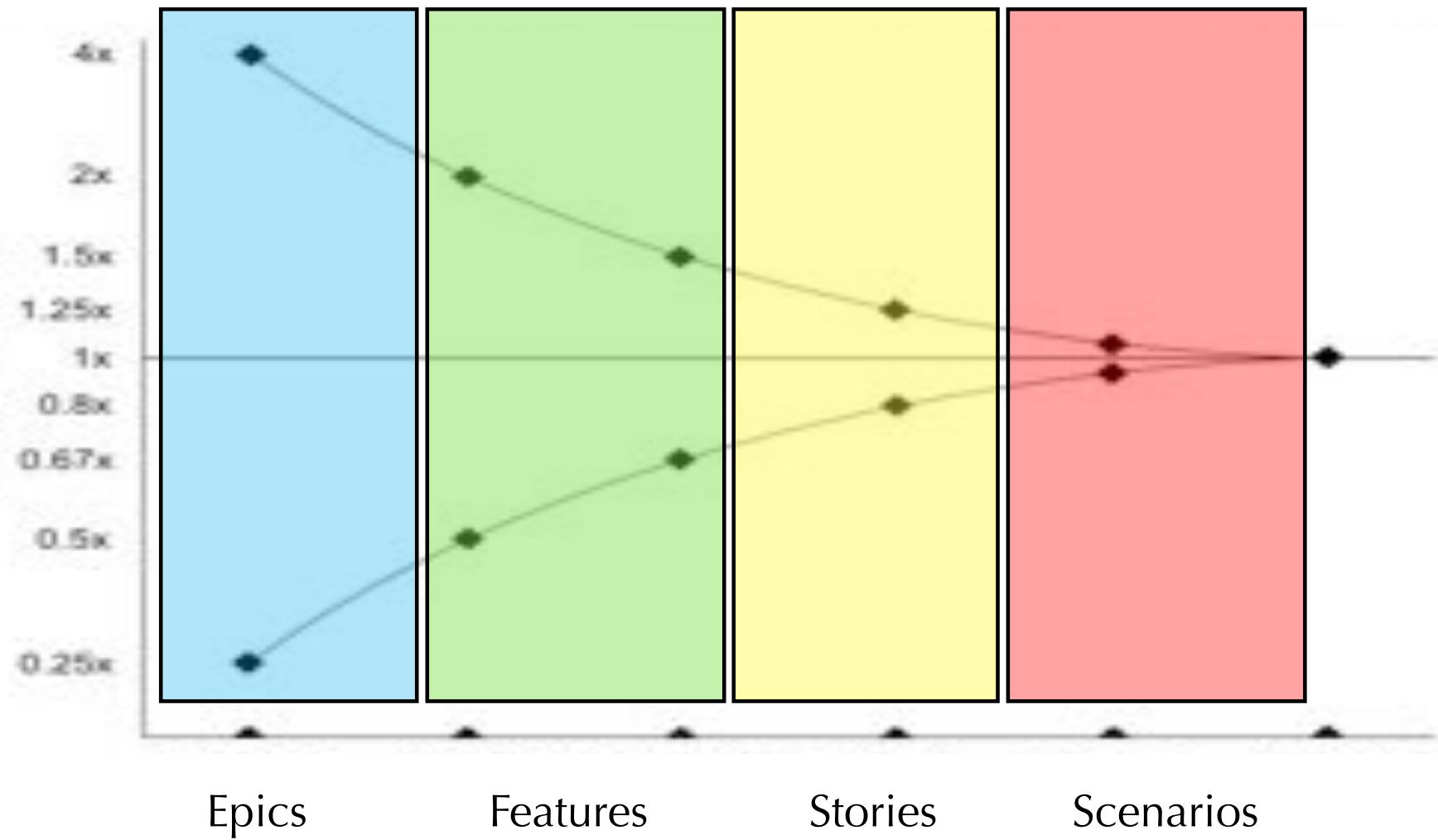


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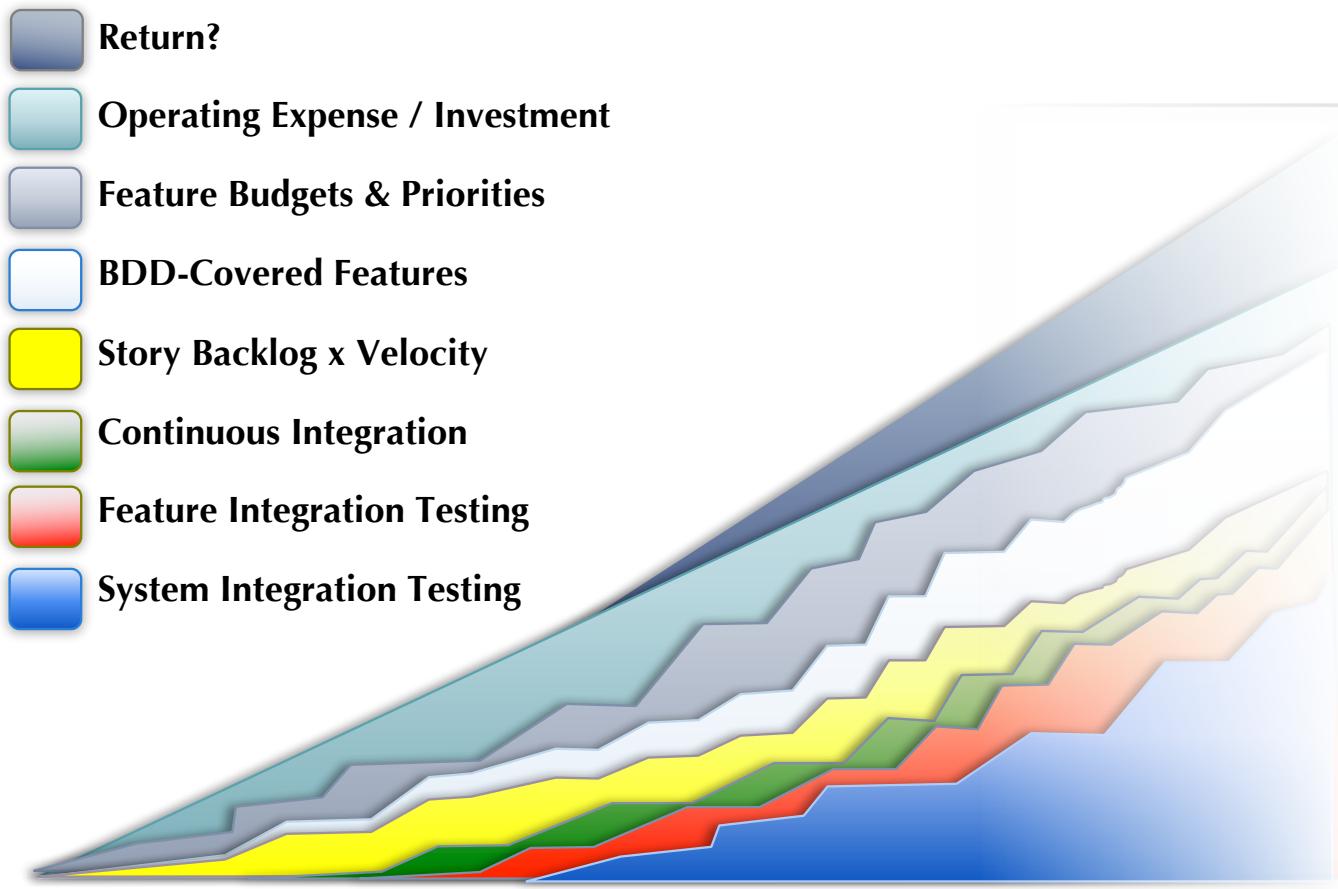


Which one of these curves is throughput?

Continuous



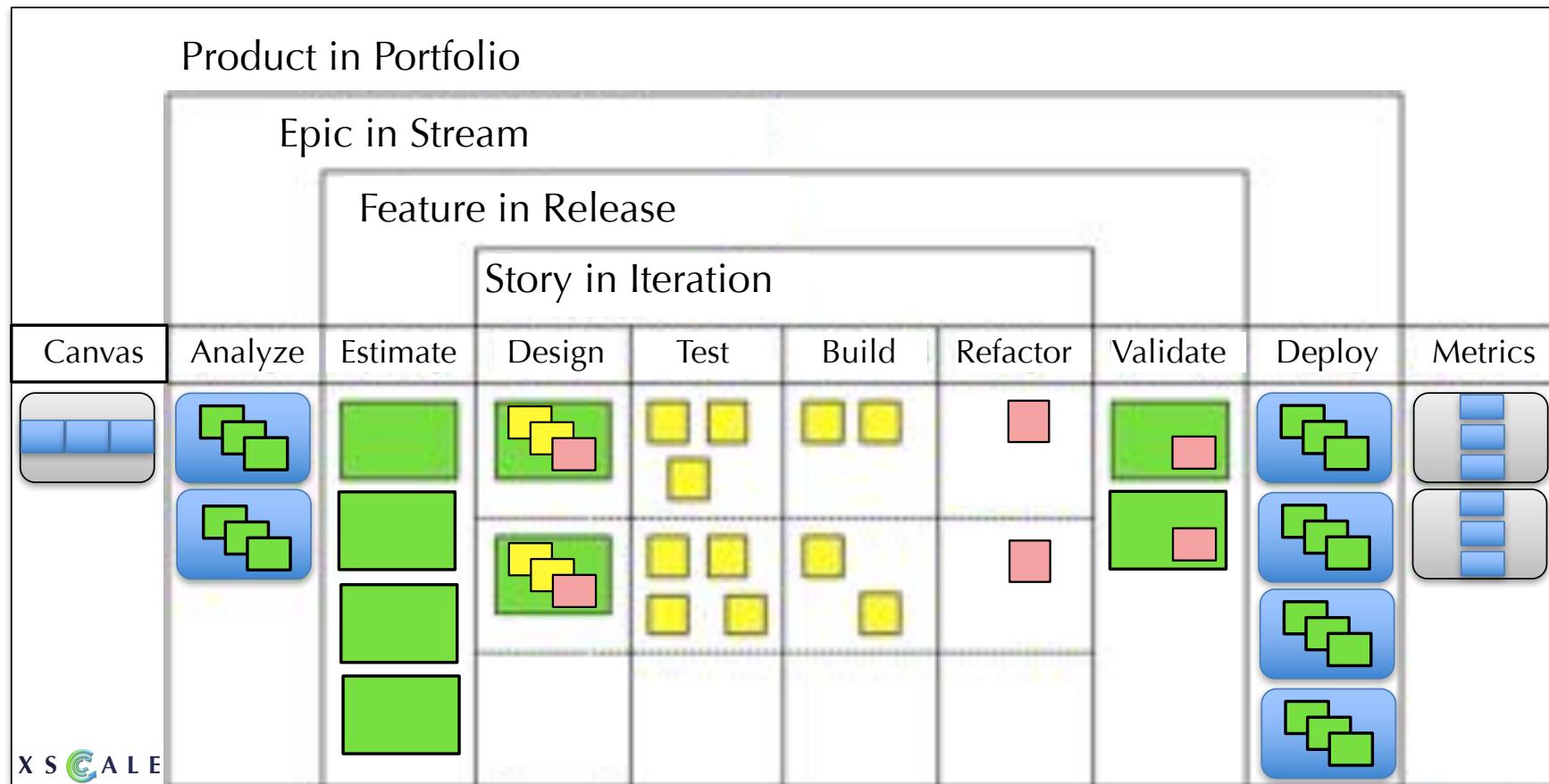
Continuous



By themselves, stories don't generate throughput. Features do.

Continuous

Stream Kanban



Continuous

Not like this....



1



2



3



4

Like this!



1



2



3



4



5

Metric	Criterion	Rate	Return
Acquisition	Starts App / Clicks Past 1 st Page	100%	\$1.00
Acquisition	Views 2+ Screens for 10+ Secs	90%	\$1.10
Activation	Email/FB/Google Signup	80%	\$1.30
Activation	Adas Profile Data	70%	\$1.50
Retention	3+ Visits in 1 st 30 Days	60%	\$1.75
Retention	Email/RSS Subscription	50%	\$2.00
Referral	Shares Contacts	40%	\$2.50
Referral	Refers +1 Users Who Activate	30%	\$3.00
Revenue	One-Off Purchase	20%	\$5.00
Revenue	Billing Subscription	10%	\$10.00

Metric	Criterion	Rate	Return
Acquisition	Starts App / Clicks Past 1 st Page	50%	\$0.50
Acquisition	Views 2+ Screens for 10+ Secs	45%	\$0.60
Activation	Email/FB/Google Signup	80%	\$1.30
Activation	Adds Profile Data	70%	\$1.50
Retention	3+ Visits in 1 st 30 Days	60%	\$1.75
Retention	Email/RSS Subscription	50%	\$2.00
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Activation	Email/FB/Google Signup	40%	\$0.70
Activation	Adds Profile Data	35%	\$0.80
Retention	3+ Visits in 1 st 30 Days	30%	\$0.90
Retention	Email/RSS Subscription	25%	\$1.00
Referral	Shares Contacts	20%	\$1.25
Referral	Refers +1 Users Who Activate	15%	\$1.50
Revenue	One-Off Purchase	10%	\$2.50
Revenue	Billing Subscription	5%	\$5.00

Metric	Criterion	Rate	Return
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Referral	Refers +1 Users Who Activate	15%	\$1.50
Revenue	One-Off Purchase	20%	\$5.00
Revenue	Billing Subscription	10%	\$10.00

Metric	Criterion	Rate	Return
Acquisition	Starts App / Clicks Past 1 st Page	100%	\$1.00
Acquisition	Views 2+ Screens for 10+ Secs	90%	\$1.10
Activation	Email/FB/Google Signup	80%	\$1.30
Activation	Adds Profile Data	70%	\$1.50
Retention	3+ Visits in 1 st 30 Days	60%	\$1.75
Retention	Email/RSS Subscription	50%	\$2.00
Referral	Shares Contacts	20%	\$1.25
Referral	Refers +1 Users Who Activate	15%	\$1.50
Revenue	One-Off Purchase	10%	\$2.50
Revenue	Billing Subscription	5%	\$5.00

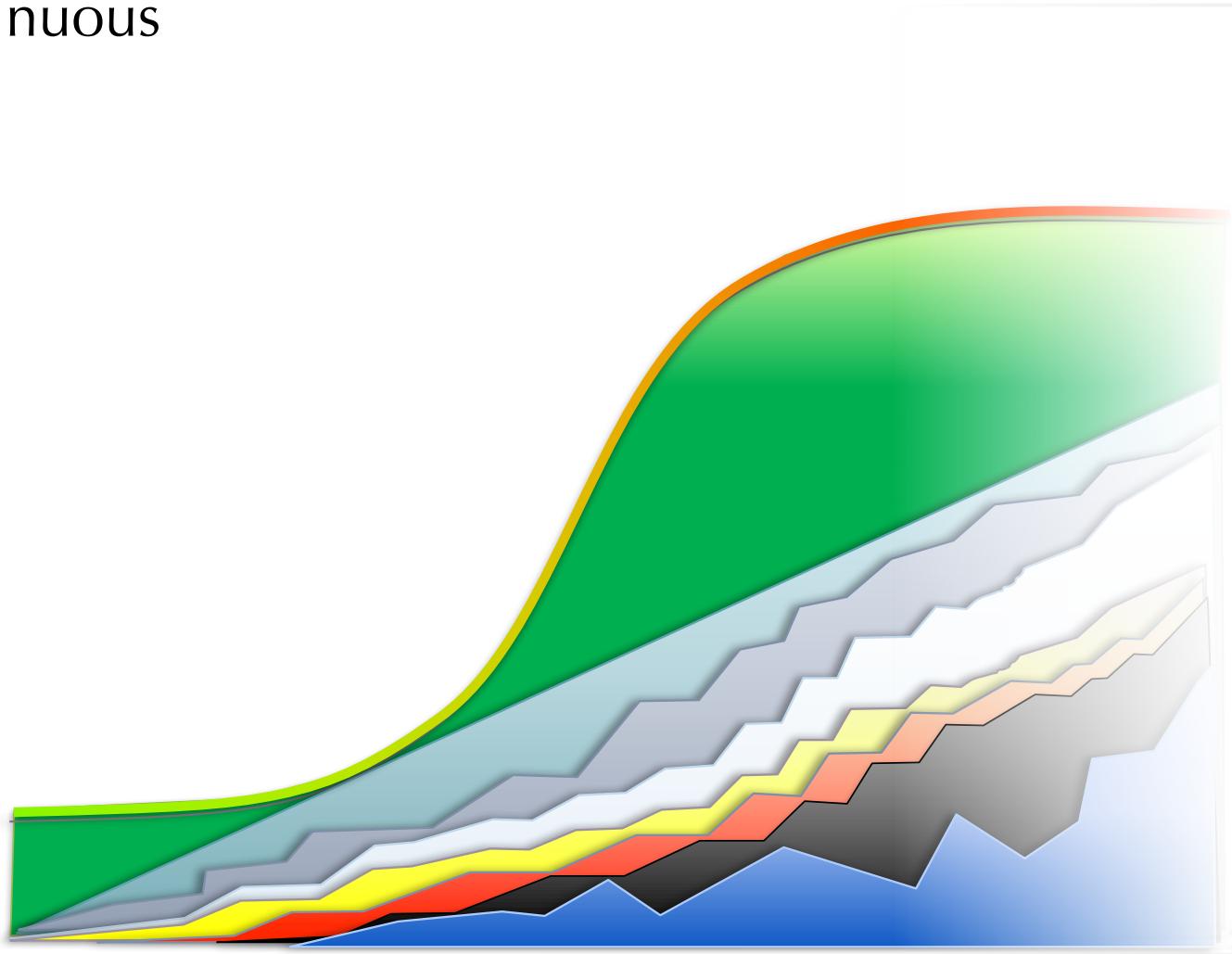
Metric	Criterion	Rate	Return
Acquisition	Starts App / Clicks Past 1 st Page	100%	\$1.00
Acquisition	Views 2+ Screens for 10+ Secs	90%	\$1.10
Activation	Email/FB/Google Signup	80%	\$1.30
Activation	Adas Profile Data	70%	\$1.50
Retention	3+ Visits in 1 st 30 Days	60%	\$1.75
Retention	Email/RSS Subscription	50%	\$2.00
Referral	Shares Contacts	40%	\$2.50
Referral	Refers +1 Users Who Activate	30%	\$3.00
Revenue	One-Off Purchase	20%	\$5.00
Revenue	Billing Subscription	10%	\$10.00

Metric	Criterion	Rate	Return
Acquisition	Starts App / Clicks Past 1 st Page	100%	\$1.00
Acquisition	Views 2+ Screens for 10+ Secs	90%	\$1.10
Activation	Email/FB/Google Signup	80%	\$1.30
Activation	Adas Profile Data	70%	\$1.50
Retention	3+ Visits in 1 st 30 Days	60%	\$1.75
Retention	Email/RSS Subscription	50%	\$2.00
Referral	Shares Contacts	40%	\$2.50
Referral	Refers +1 Users Who Activate	30%	\$3.00
Revenue	One-Off Purchase	10%	\$2.50
Revenue	Billing Subscription	10%	\$10.00

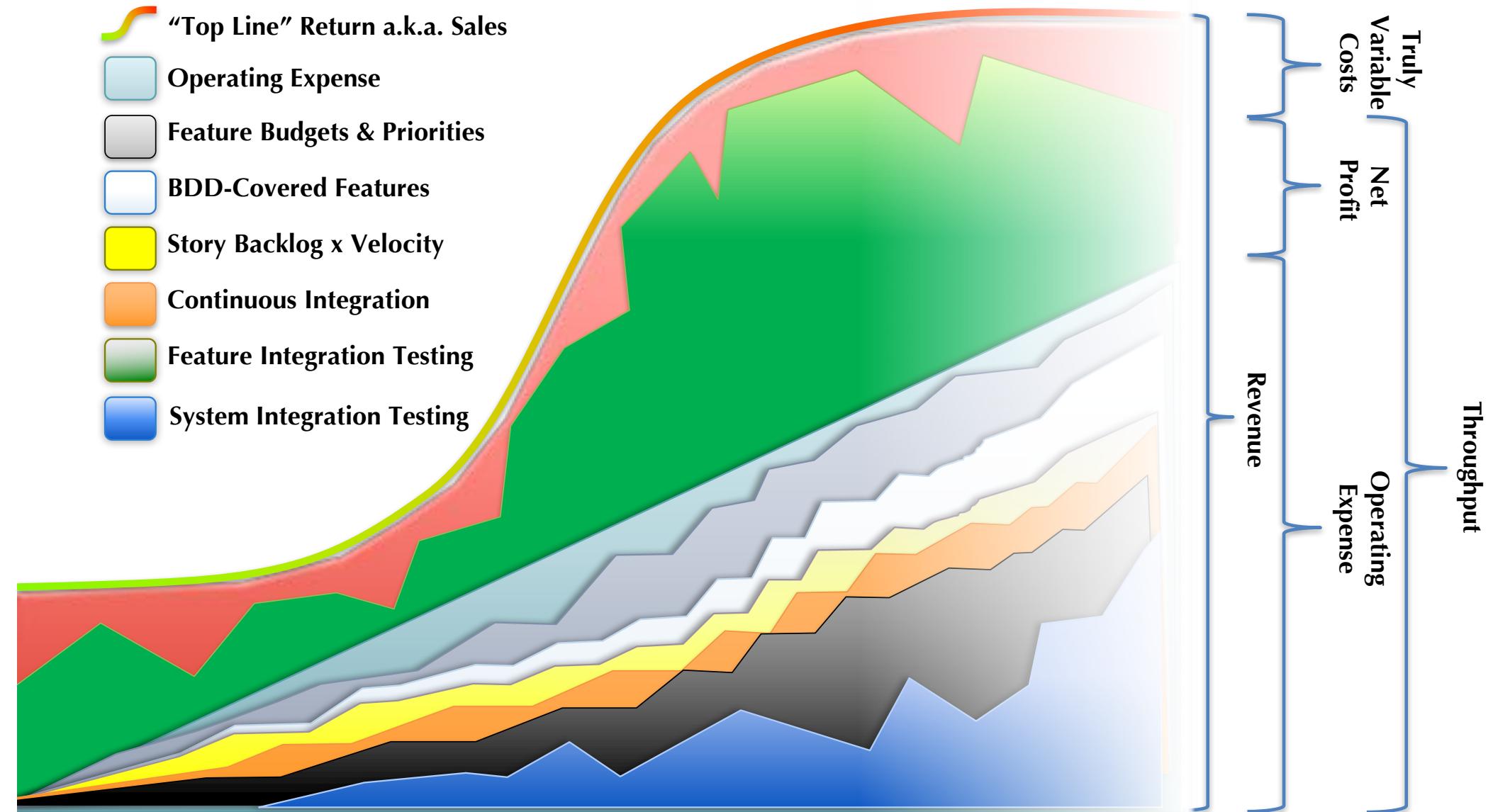
Metric	Criterion	Rate	Return
Acquisition	Starts App / Clicks Past 1 st Page	100%	\$1.00
Acquisition	Views 2+ Screens for 10+ Secs	90%	\$1.10
Activation	Email/FB/Google Signup	80%	\$1.30
Activation	Adds Profile Data	70%	\$1.50
Retention	3+ Visits in 1 st 30 Days	60%	\$1.75
Retention	Email/RSS Subscription	50%	\$2.00
Referral	Shares Contacts	40%	\$2.50
Referral	Refers +1 Users Who Activate	30%	\$3.00
Revenue	One-Off Purchase	10%	\$2.50
Revenue	Billing Subscription	5%	\$5.00

Metric	Criterion	Rate	Return
Acquisition	Starts App / Clicks Past 1 st Page	100%	\$1.00
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Referral	Shares Contacts	40%	\$2.50
Referral	Refers +1 Users Who Activate	30%	\$3.00
Revenue	One-Off Purchase	20%	\$5.00
Revenue	Billing Subscription	10%	\$10.00

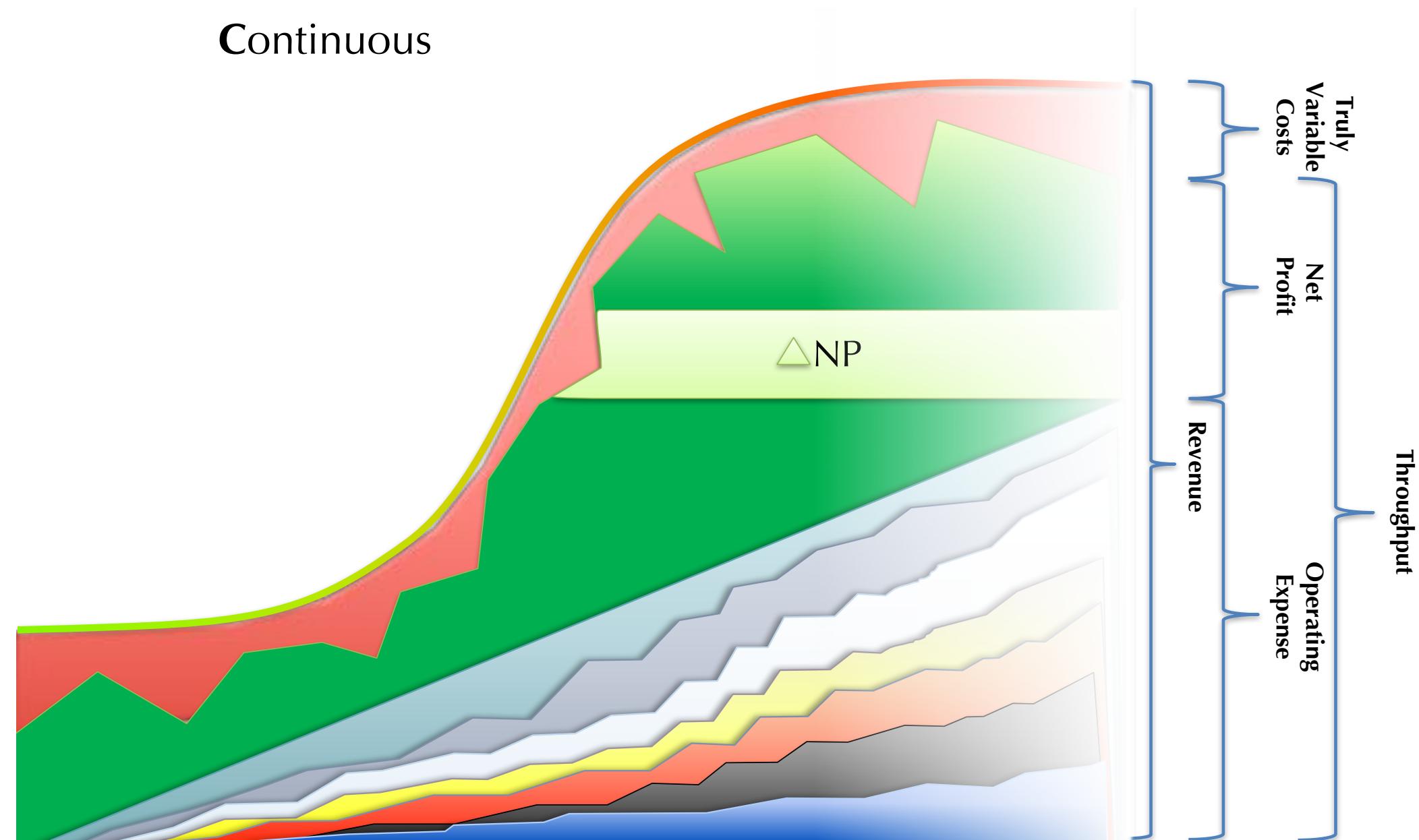
Continuous



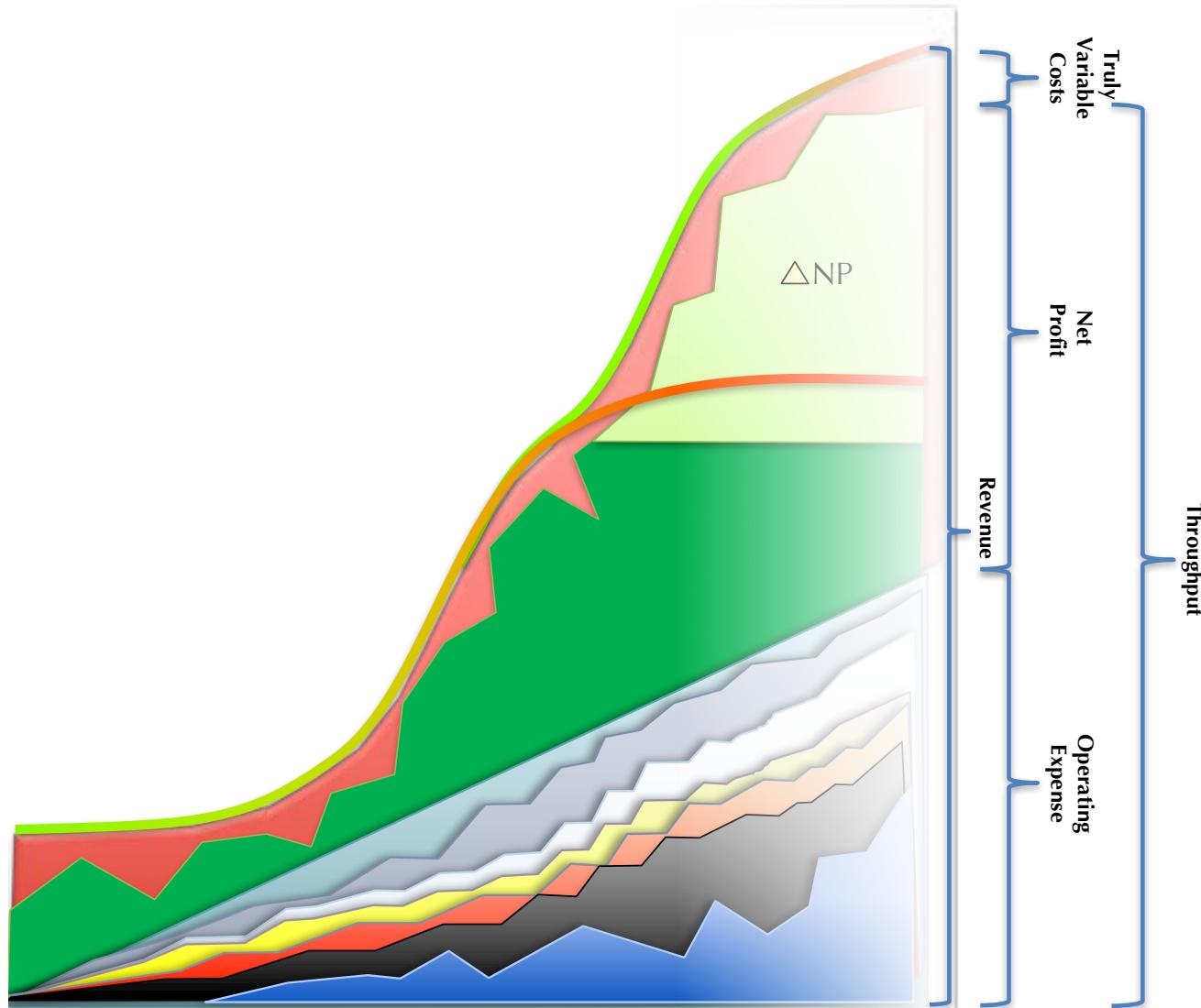
There is no fixed cost per unit of return



Continuous



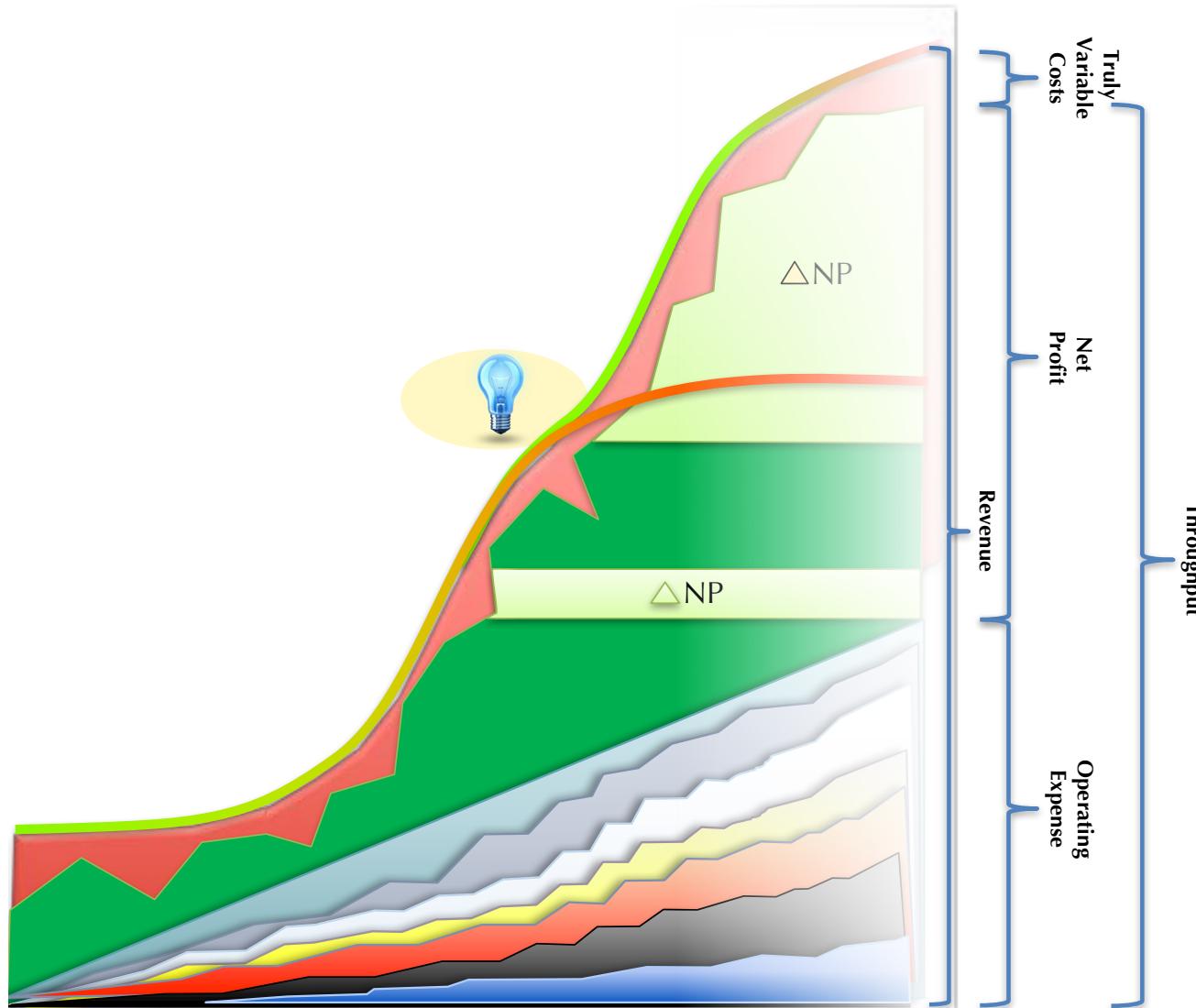
Continuous



Continuously
Prioritize Design to
Open the Bottleneck

- Lift a pirate constraint

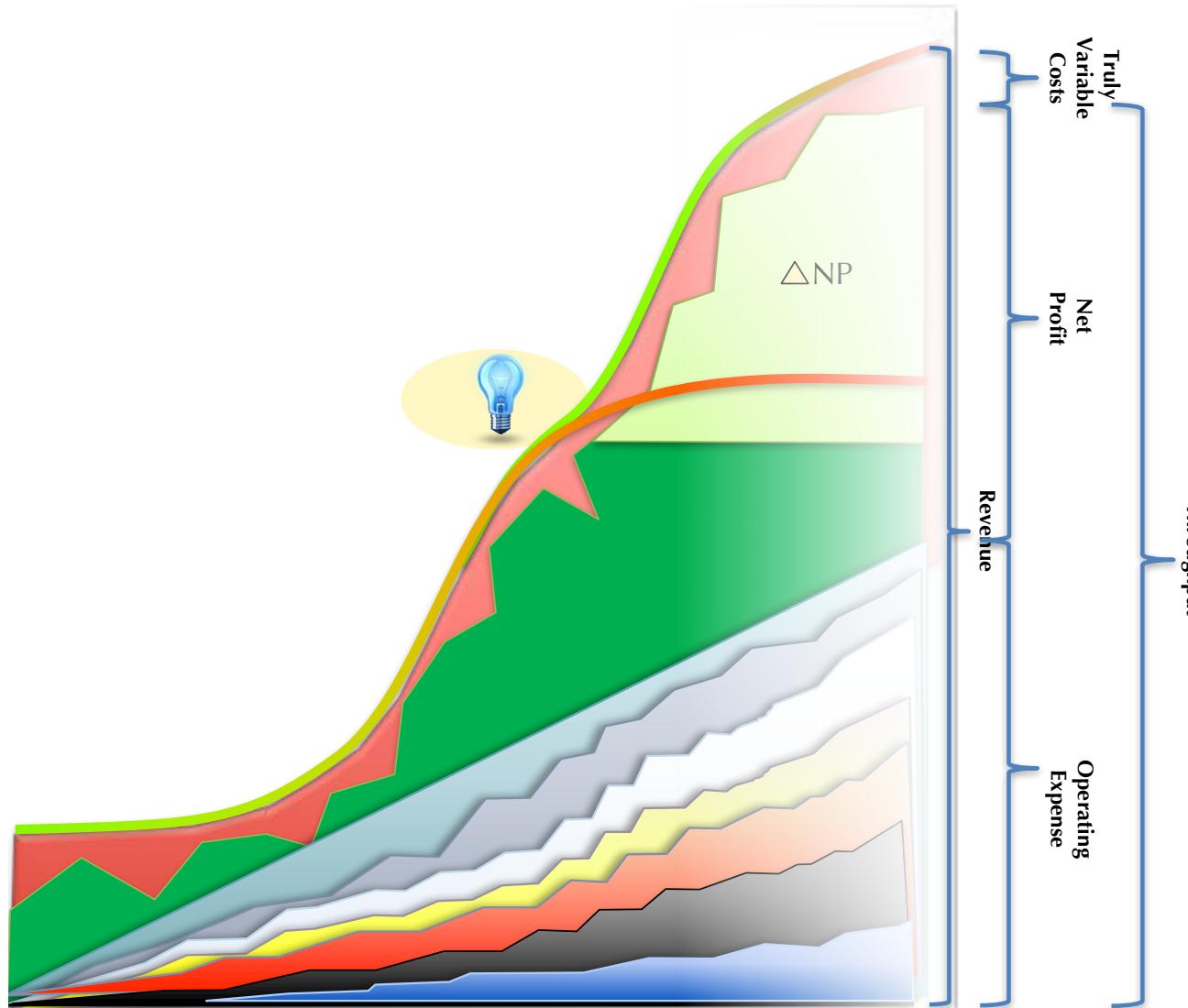
Continuous



Continuously
Prioritize Design to
Open the Bottleneck

- Lift a pirate constraint
- Cut Operating Expense

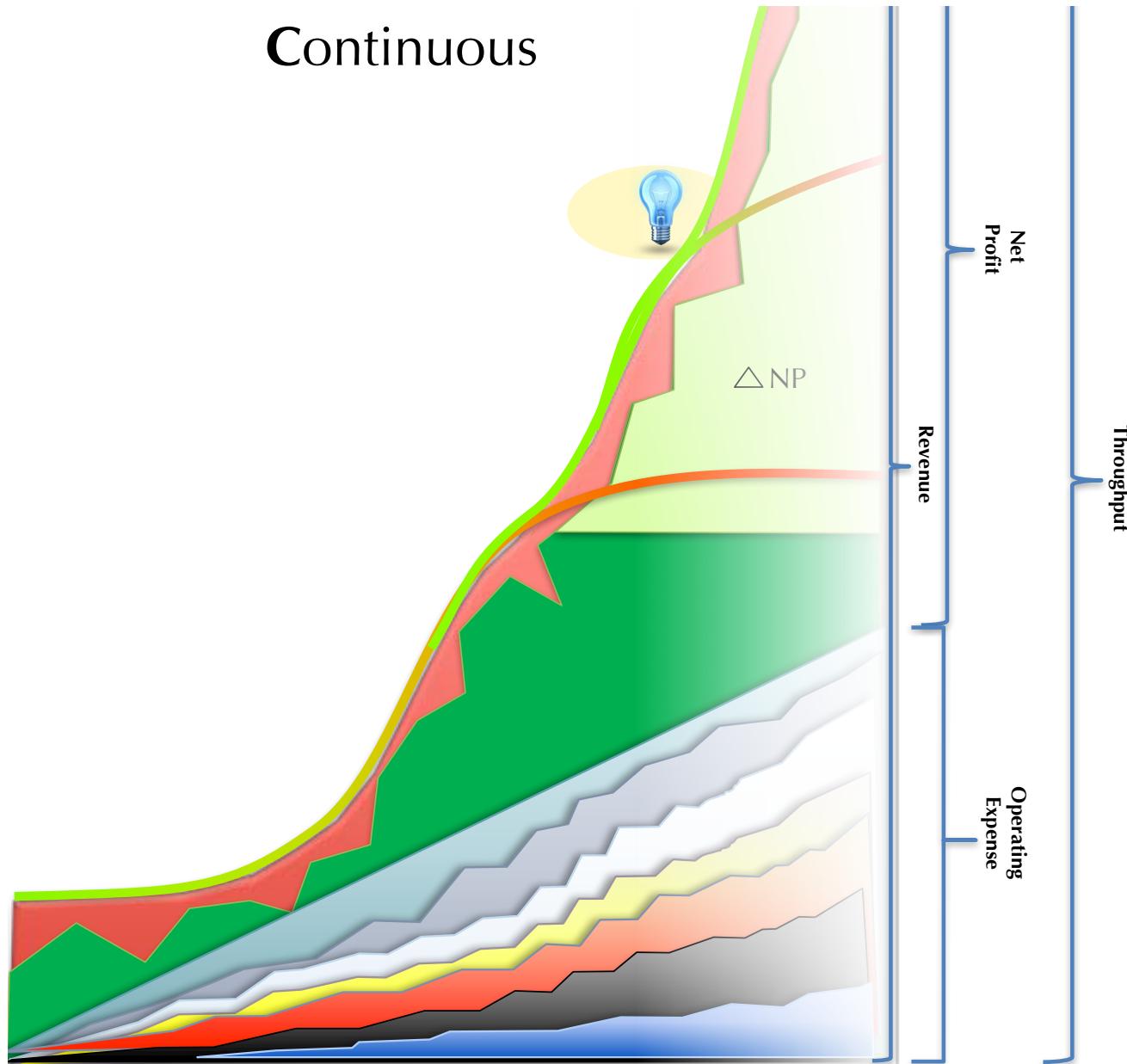
Continuous



Continuously
Prioritize Design to
Open the Bottleneck

- Lift a pirate constraint
- ~~Cut Operating Expense~~
- Lift Efficiency

Continuous

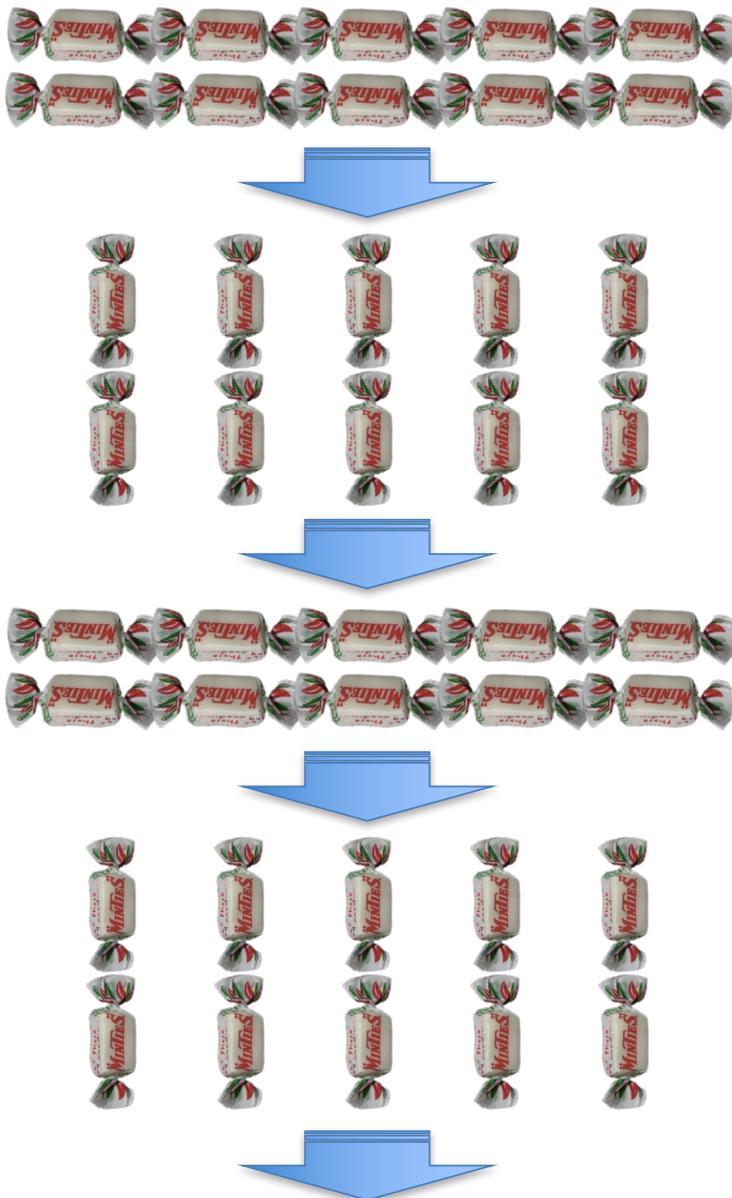


Continuously Prioritize Design to Open the Bottleneck

- Lift a pirate constraint
- ~~Cut operating expense~~
- Lift Efficiency
- Capture a new market
- Open a new ecosystem



Batch Size & Minty Machines



Minty Machine 1: form teams of 2-5 people

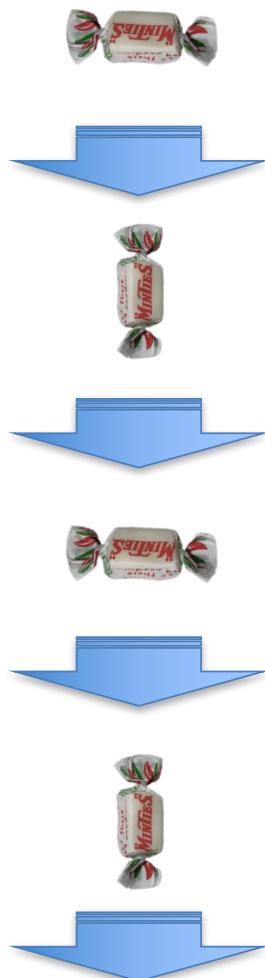
Each to “process” 10 Minties.

Each flips all 10 Minties before passing.

No air but each player can use both hands.

Time each person.

Record who's best and how long end to end.



Minty Machine 2: same teams

Handicap – use only one hand.

Also more passes - pass as each is flipped.

Coordinator to call out seconds.

Each person to time themselves.

Record who's best and how long end to end.

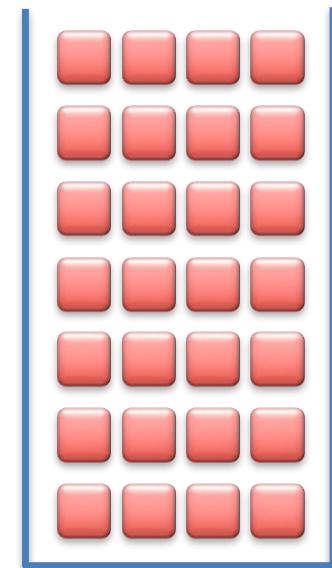
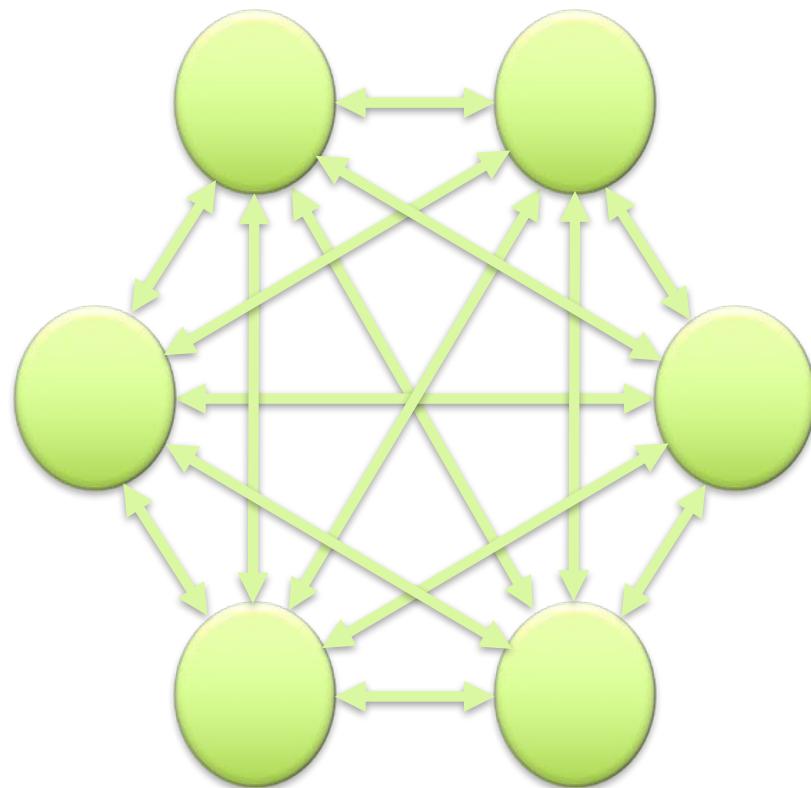
Why was that faster end to end?

Autonomous Teams

- › Self-managing teams don't have masters
- › Self-aligning streams don't have owners
- › Leadership as a Service + Chapter Meetings

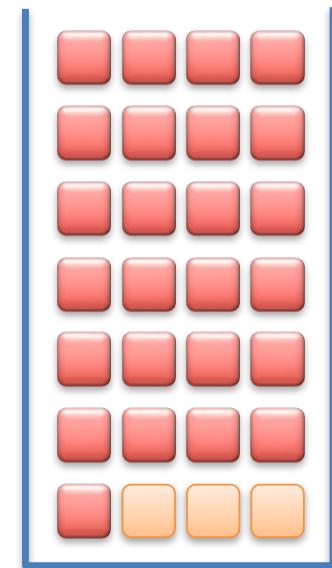
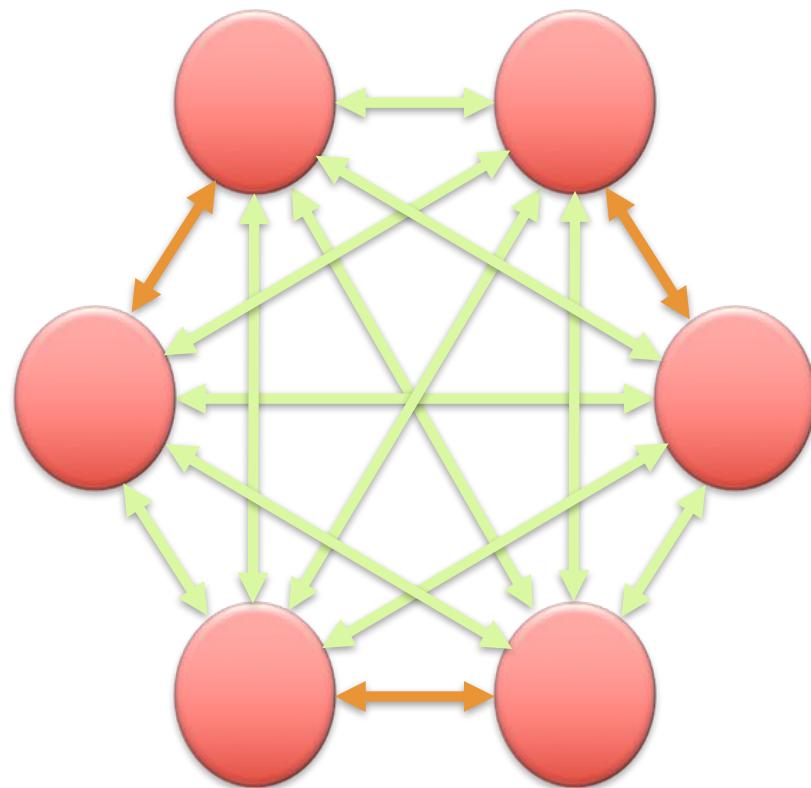


Autonomous Squad



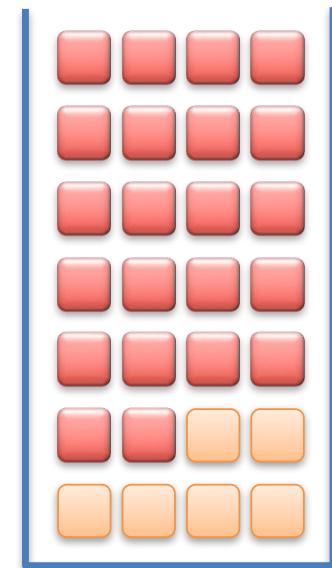
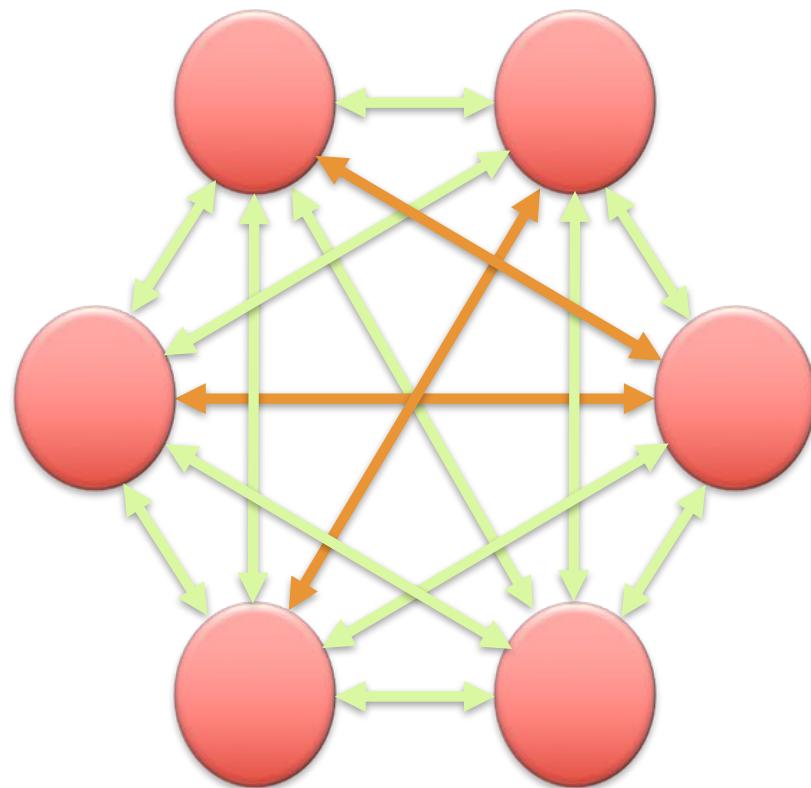
Team Size: 6
Collaboration Loop Limit: 2

Autonomous Squad



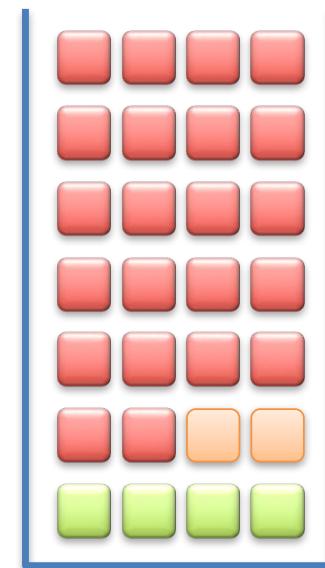
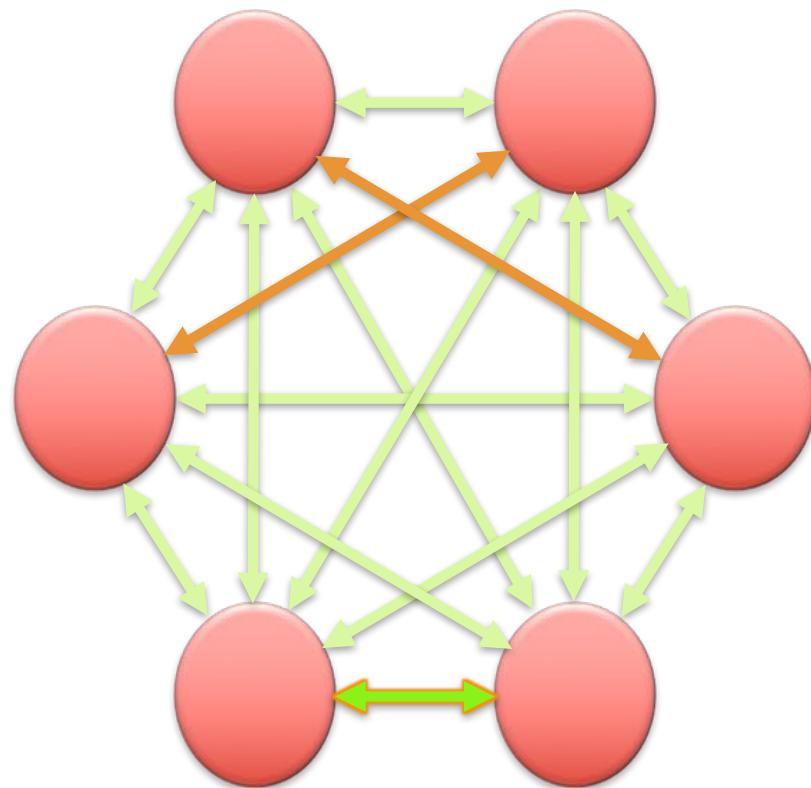
Prioritization + Pairing

Autonomous Squad



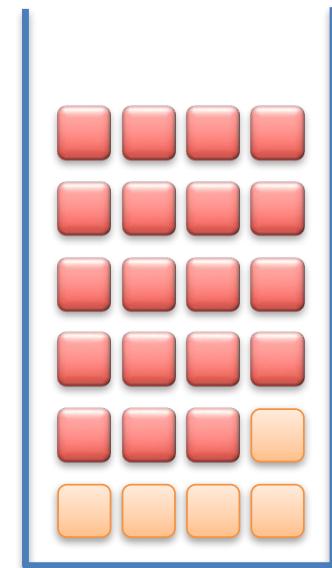
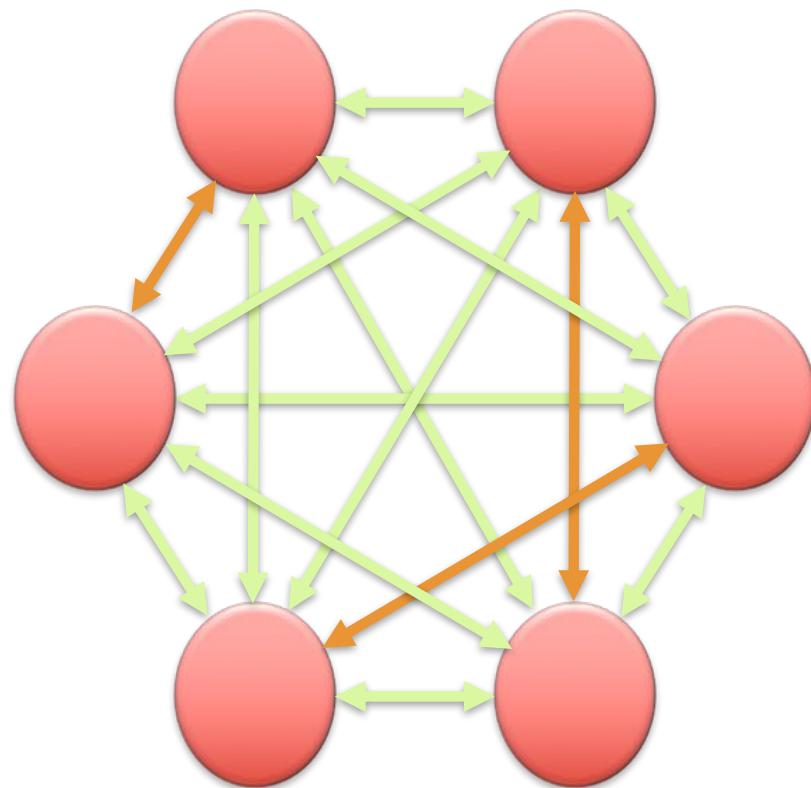
Prioritization + Pairing

Autonomous Squad



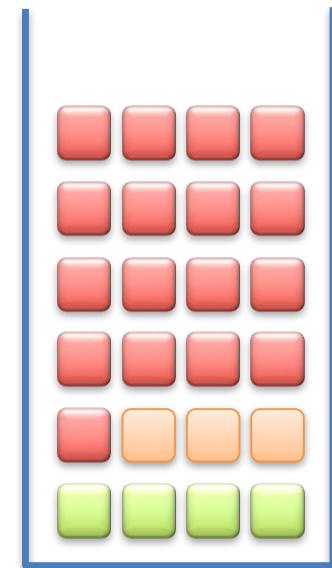
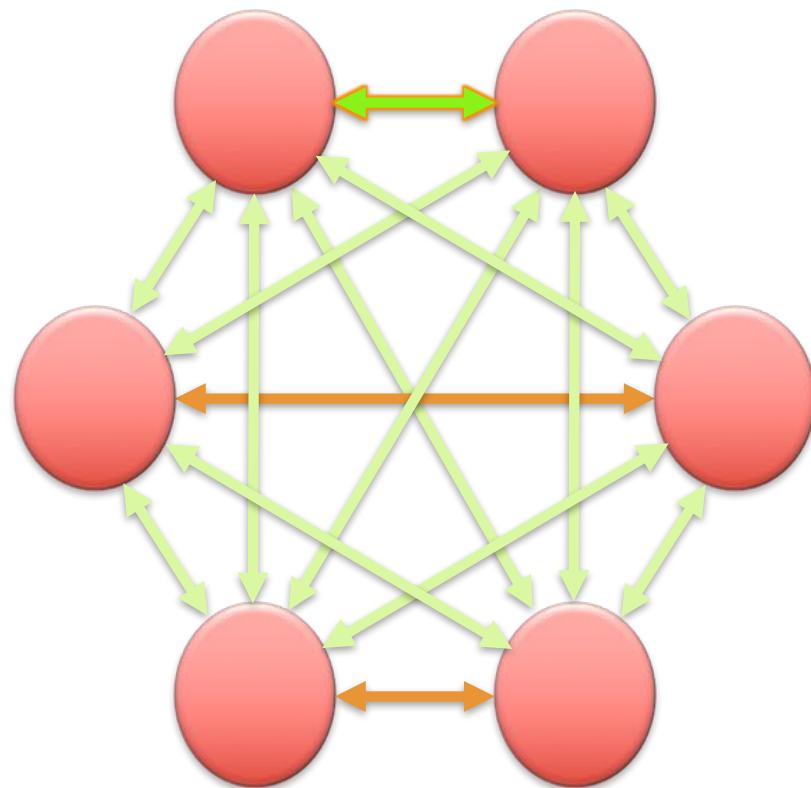
Prioritization + Pairing

Autonomous Squad



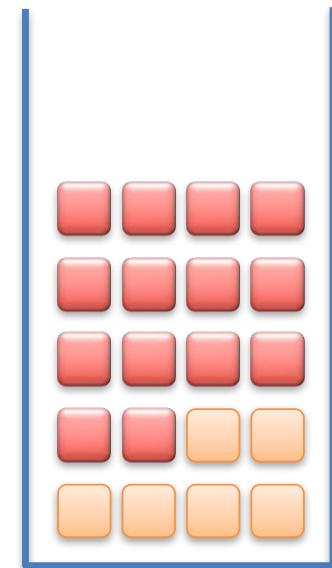
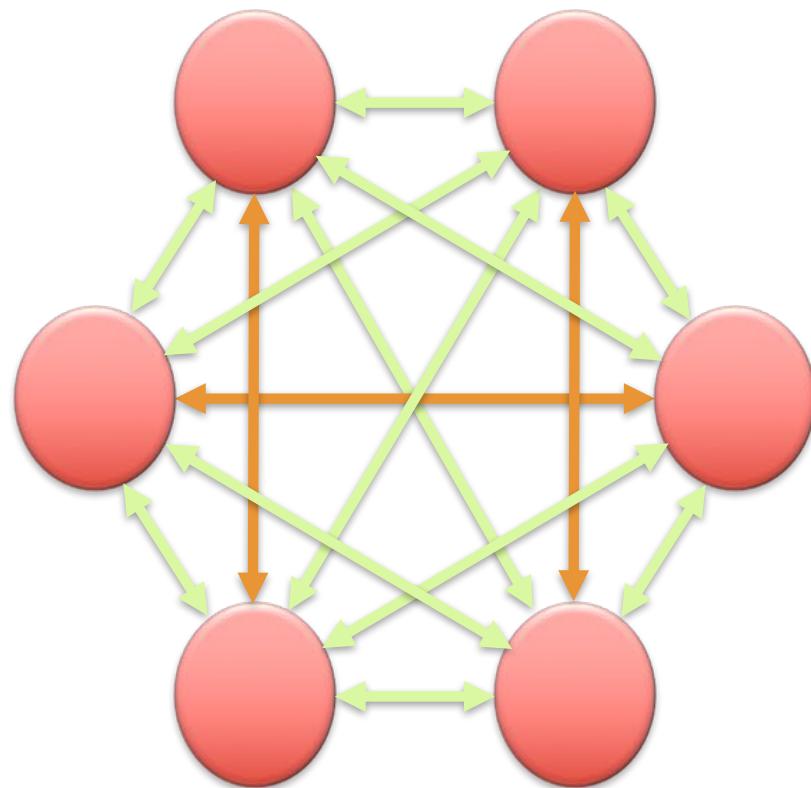
Prioritization + Pairing

Autonomous Squad



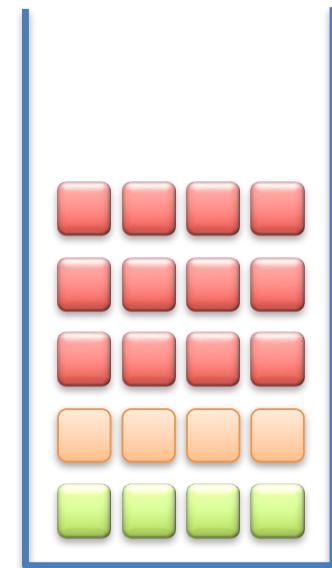
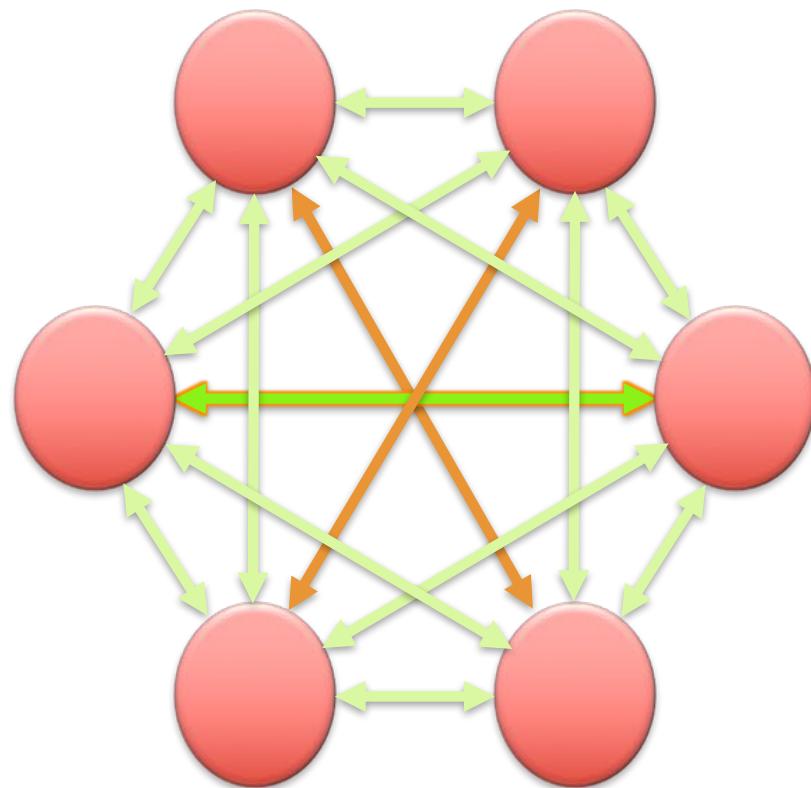
Prioritization + Pairing

Autonomous Squad



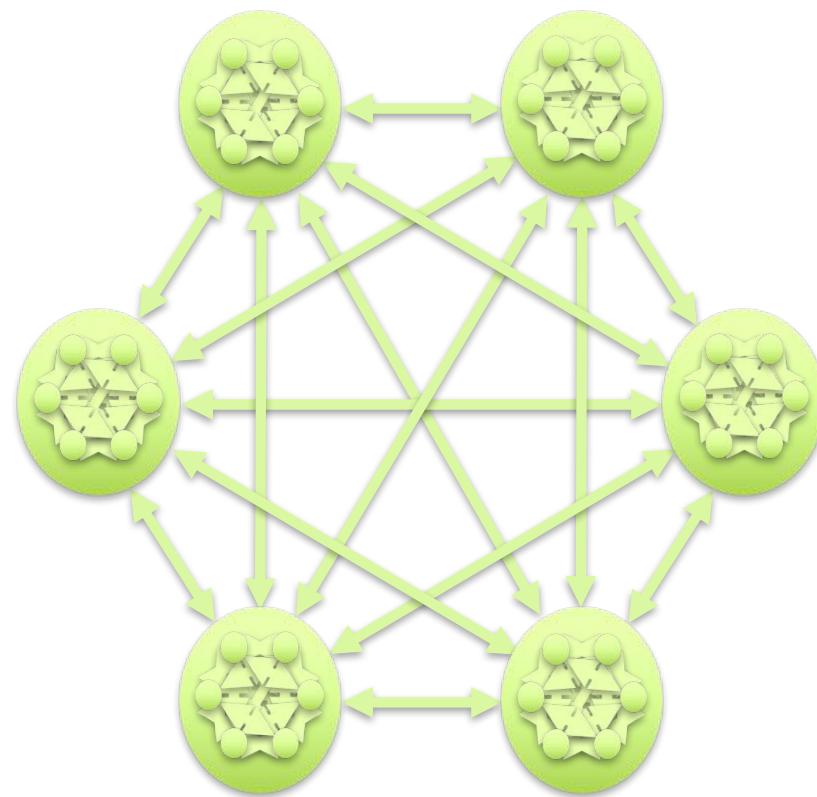
Prioritization + Pairing

Autonomous Squad

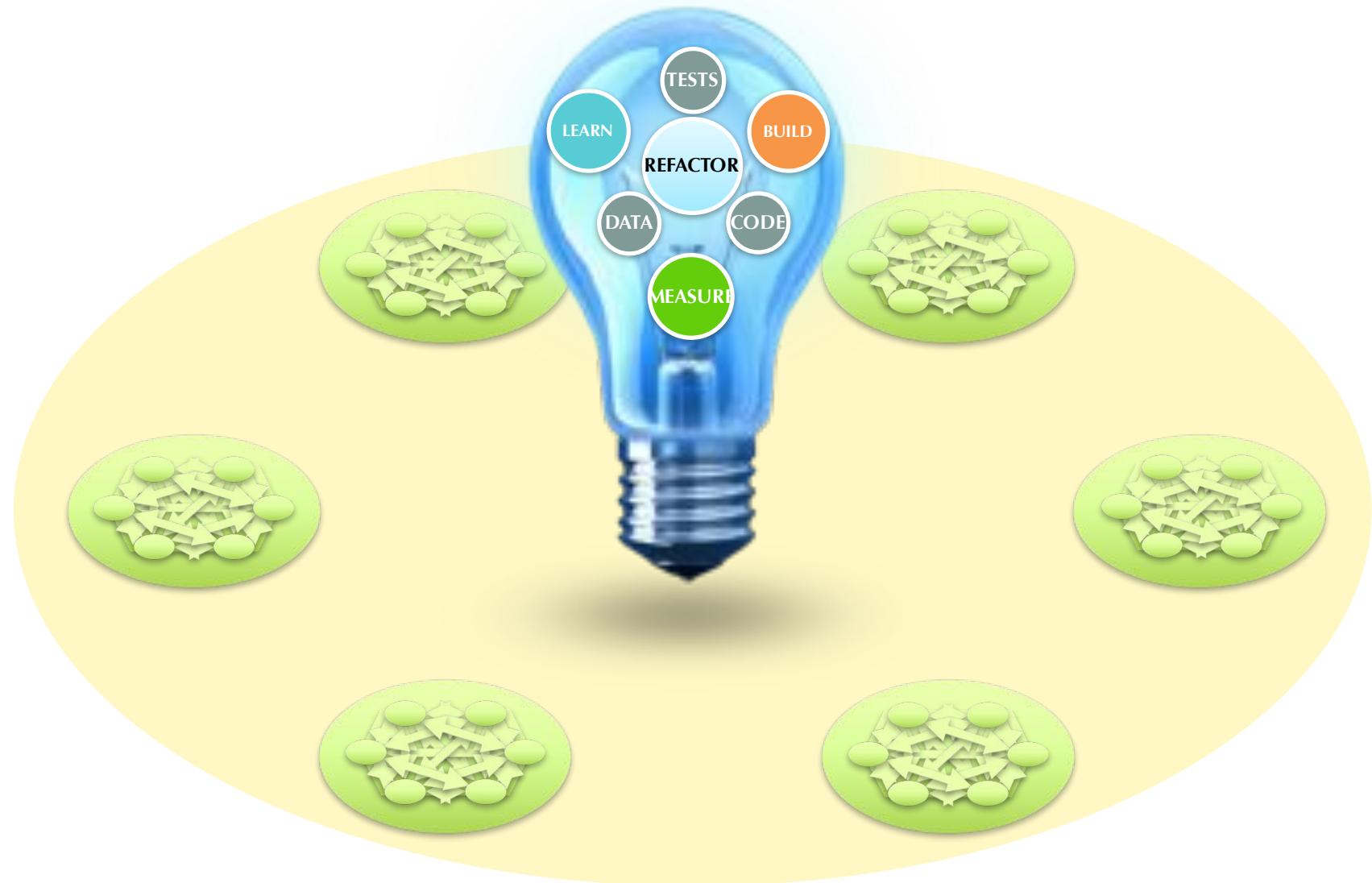


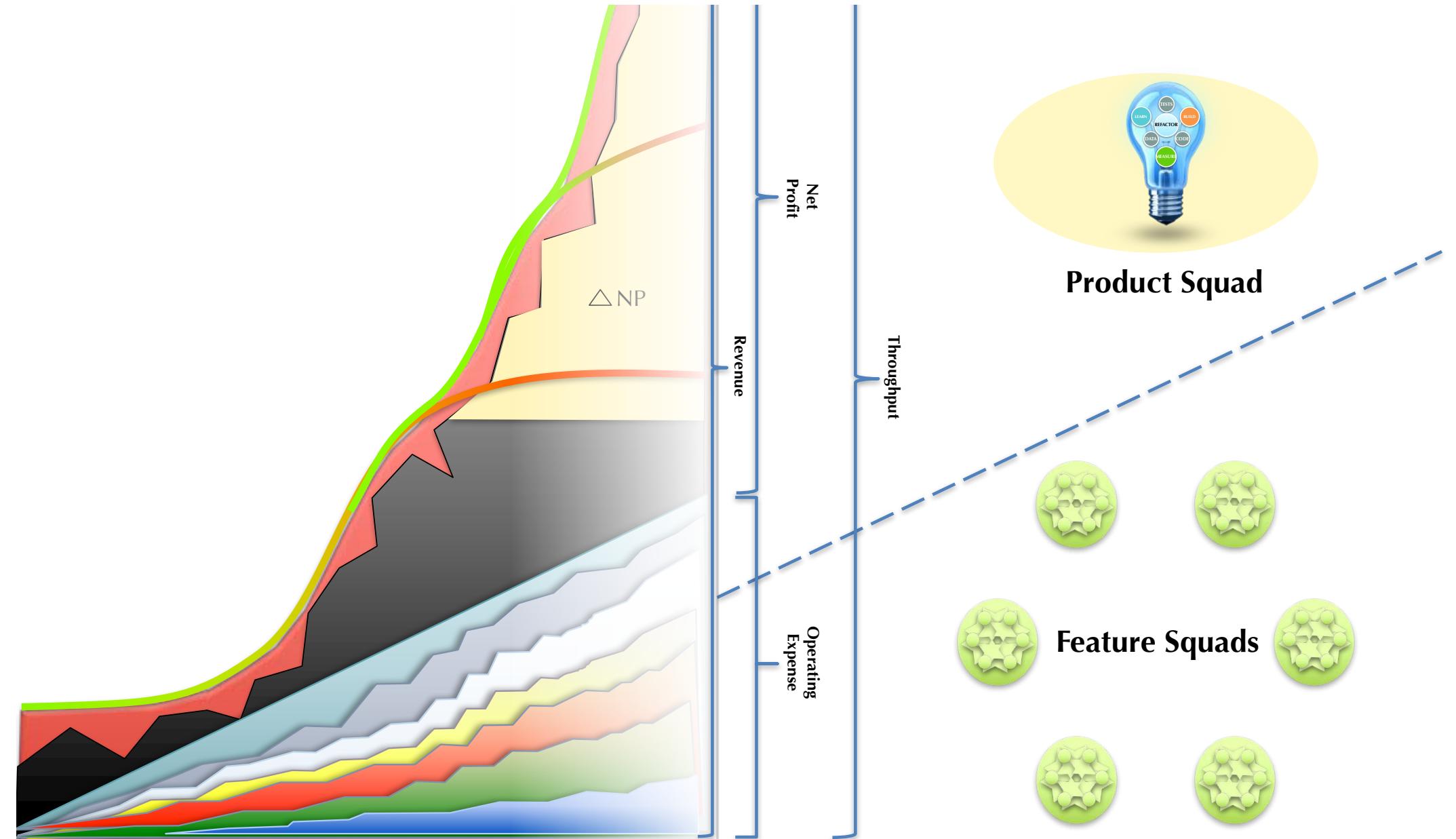
Prioritization + Pairing

Can autonomy scale without hierarchy?

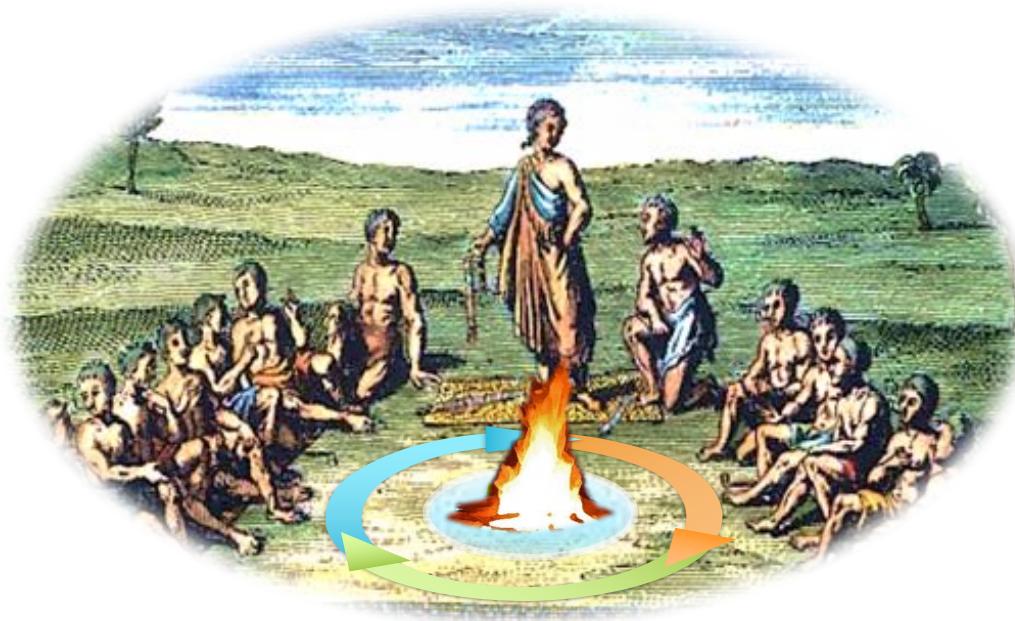


Autonomous Value Stream





Autonomous



The Iroquois “Great Law of Peace”

Leadership as a Service

Split management into three parts:
Coach, Leader and Team.

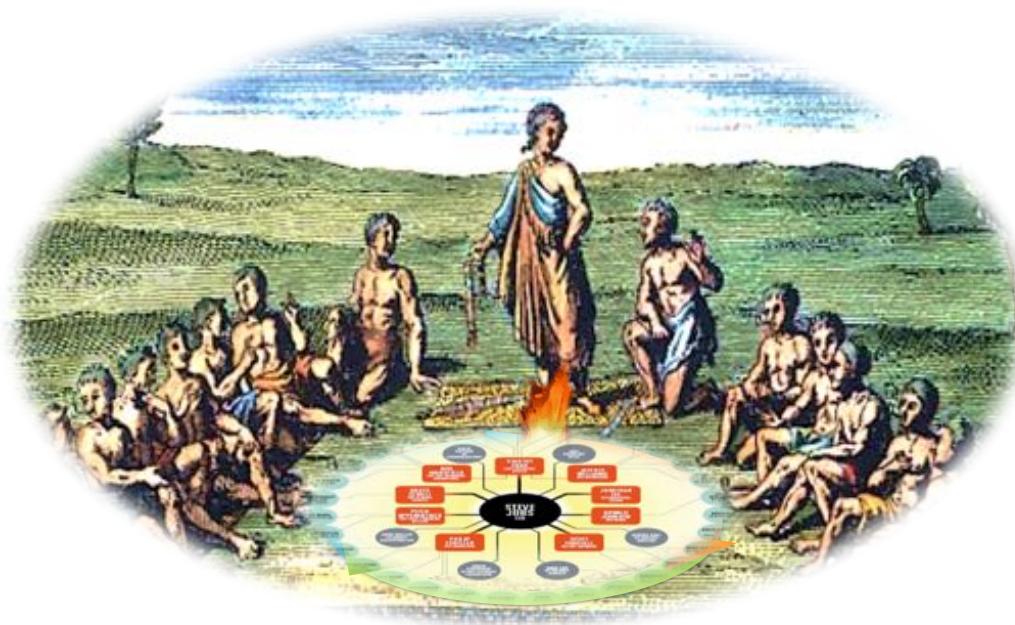
Coach maintains timeframe and
ceremonies for making decisions.

If and only if the Team isn't
unanimous, the Leader decides.

Motivating trade-offs to achieve
consensus without politics.

The Leader role ensures decisions
are always made in good time.

Autonomous



The Iroquois “Great Law of Peace”

Leadership as a Service

Split management into three parts:
Coach, Leader and Team.

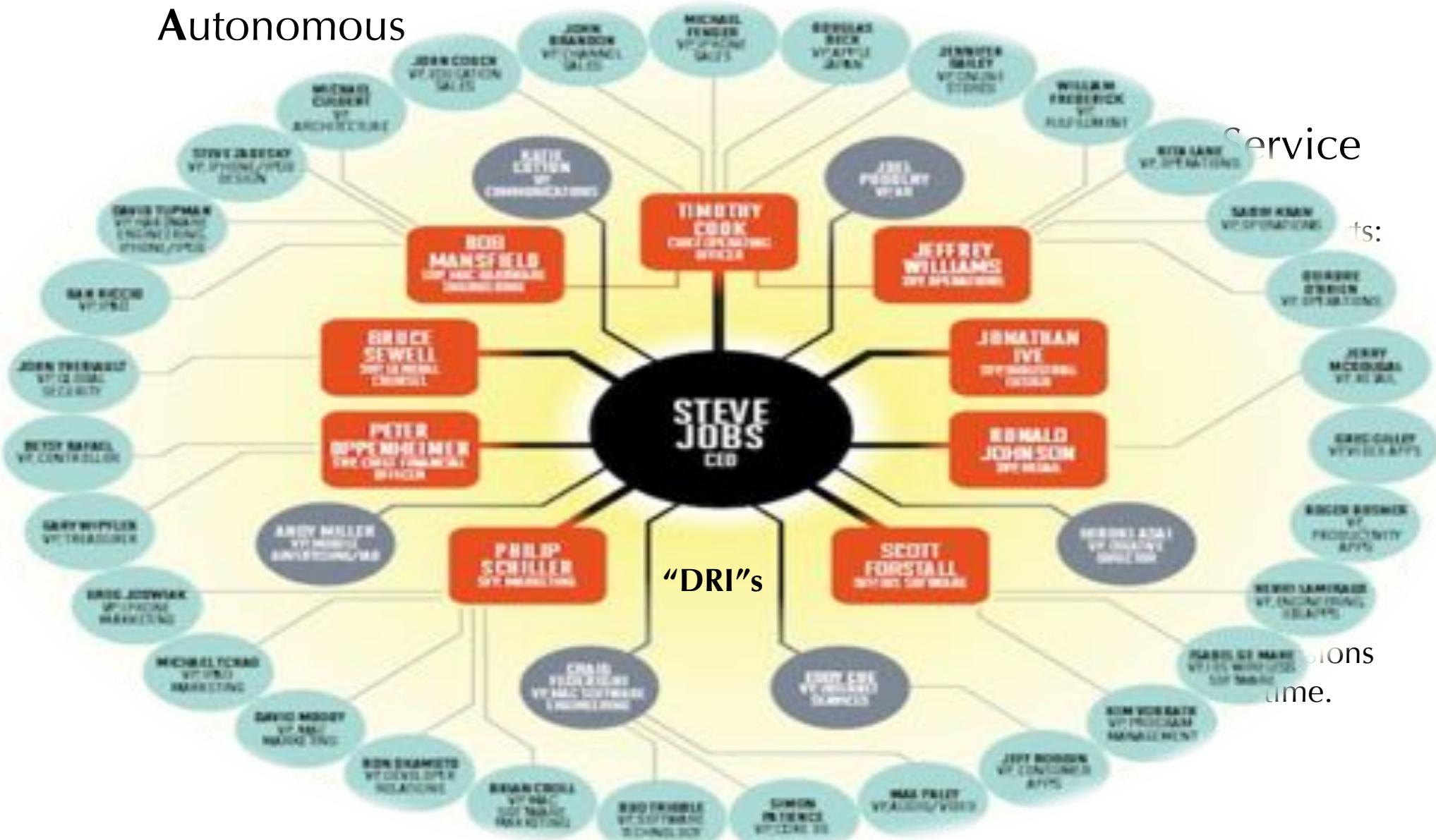
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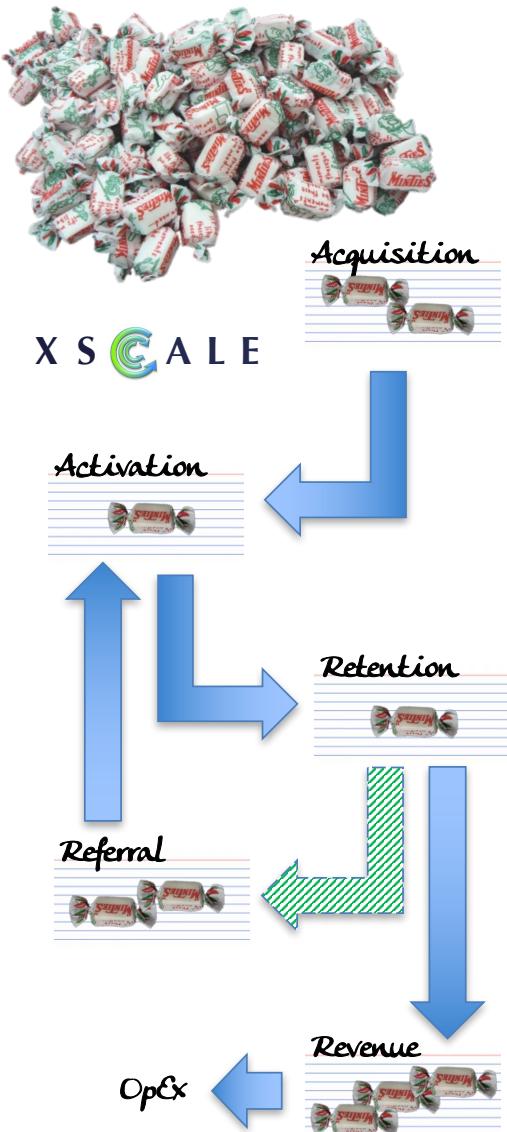
The Leader role ensures decisions
are always made in good time.

Autonomous





A Game of Throughput

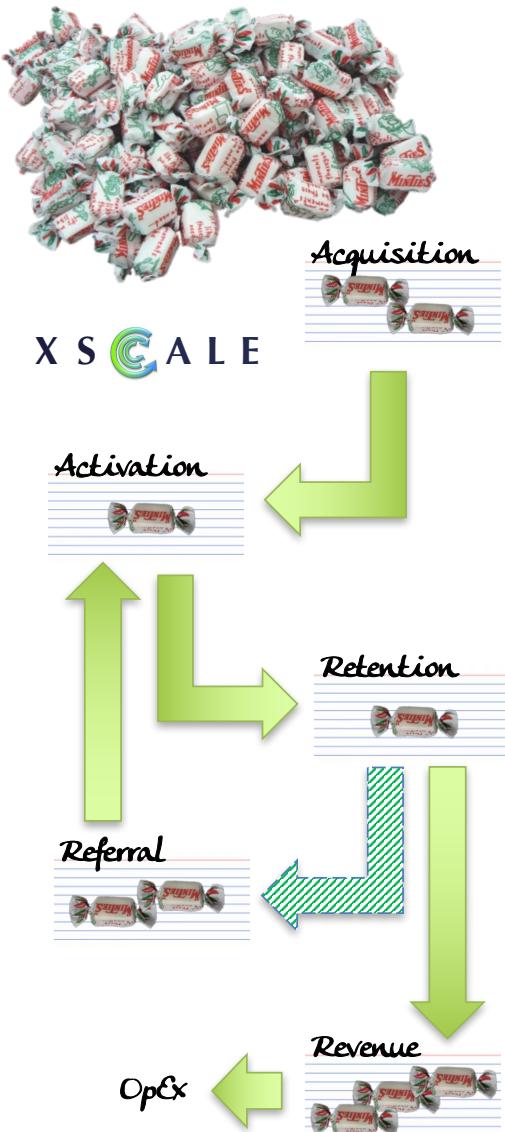


Form a Value Stream of 5 people. Each person has a card representing a pirate metric Constraint.

Each turn, a card can't pass more Minties than its constraint. All constraints start at 1.

Referral's constraint multiplies the Minties that get to Retention. It passes as many as can fit to Activation.

Each turn, any end to end Throughput can be added to open any bottleneck constraints. The rest is Net Profit.



Questions:

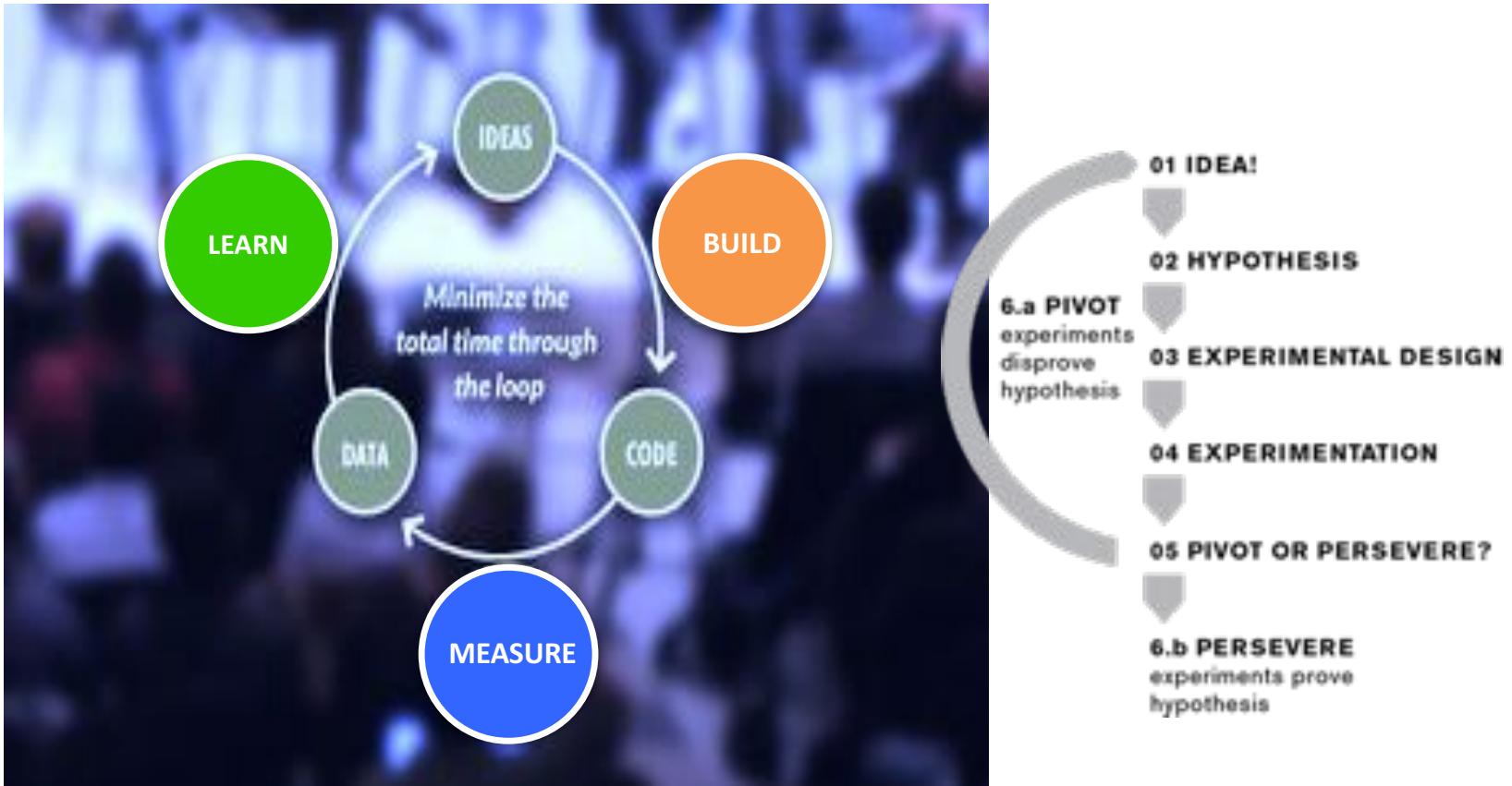
What's the minimum number of turns and the maximum Throughput for one bag of Minties?

What happens if we minimize OpEx and just bank maximum Net Profit every turn? Or just one turn?

What happens if we ignore analytics and just allocate a pre-budgeted OpEx to each constraint each turn?

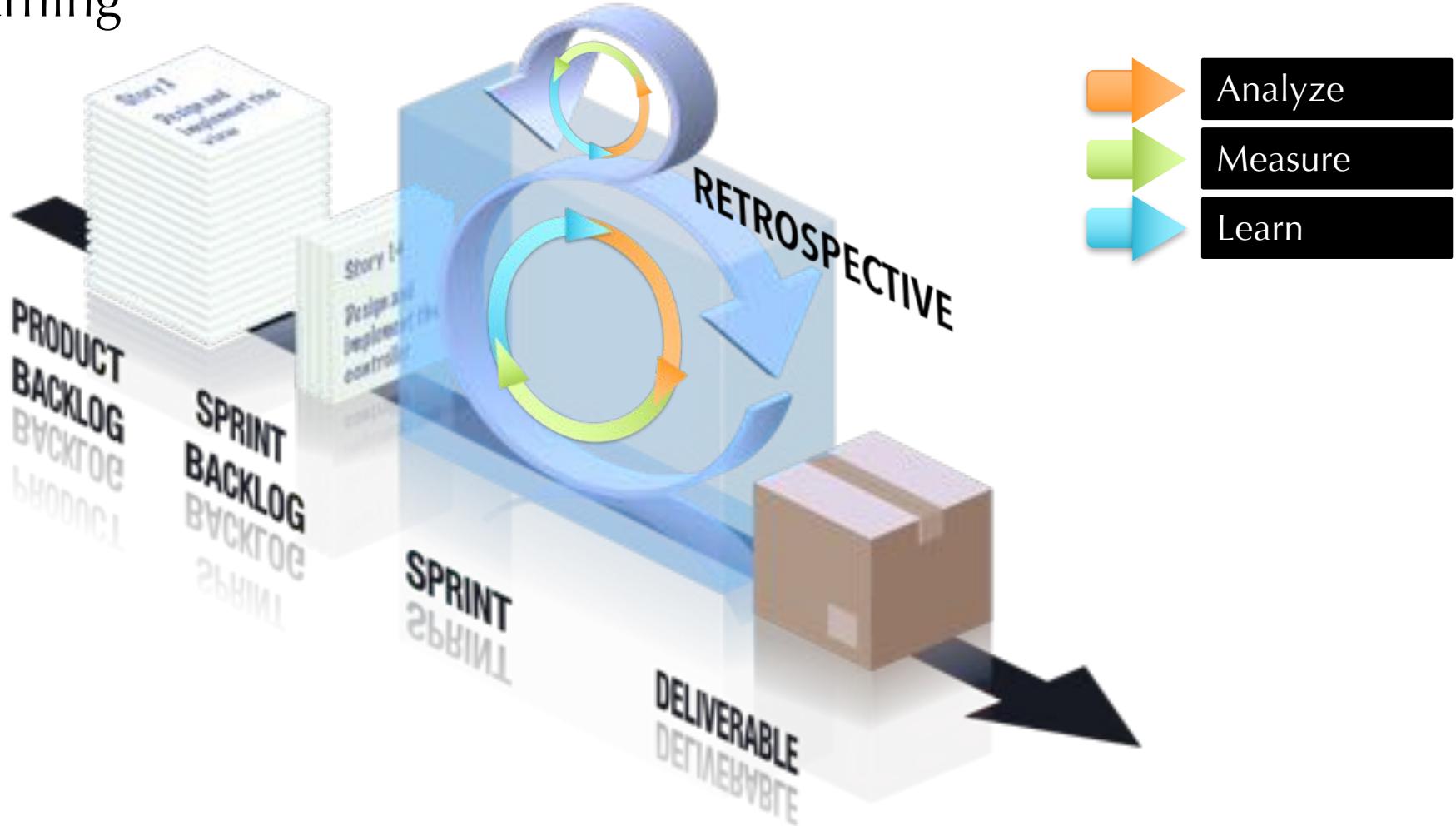
What should we do when the bag of Minties runs out?

Learning

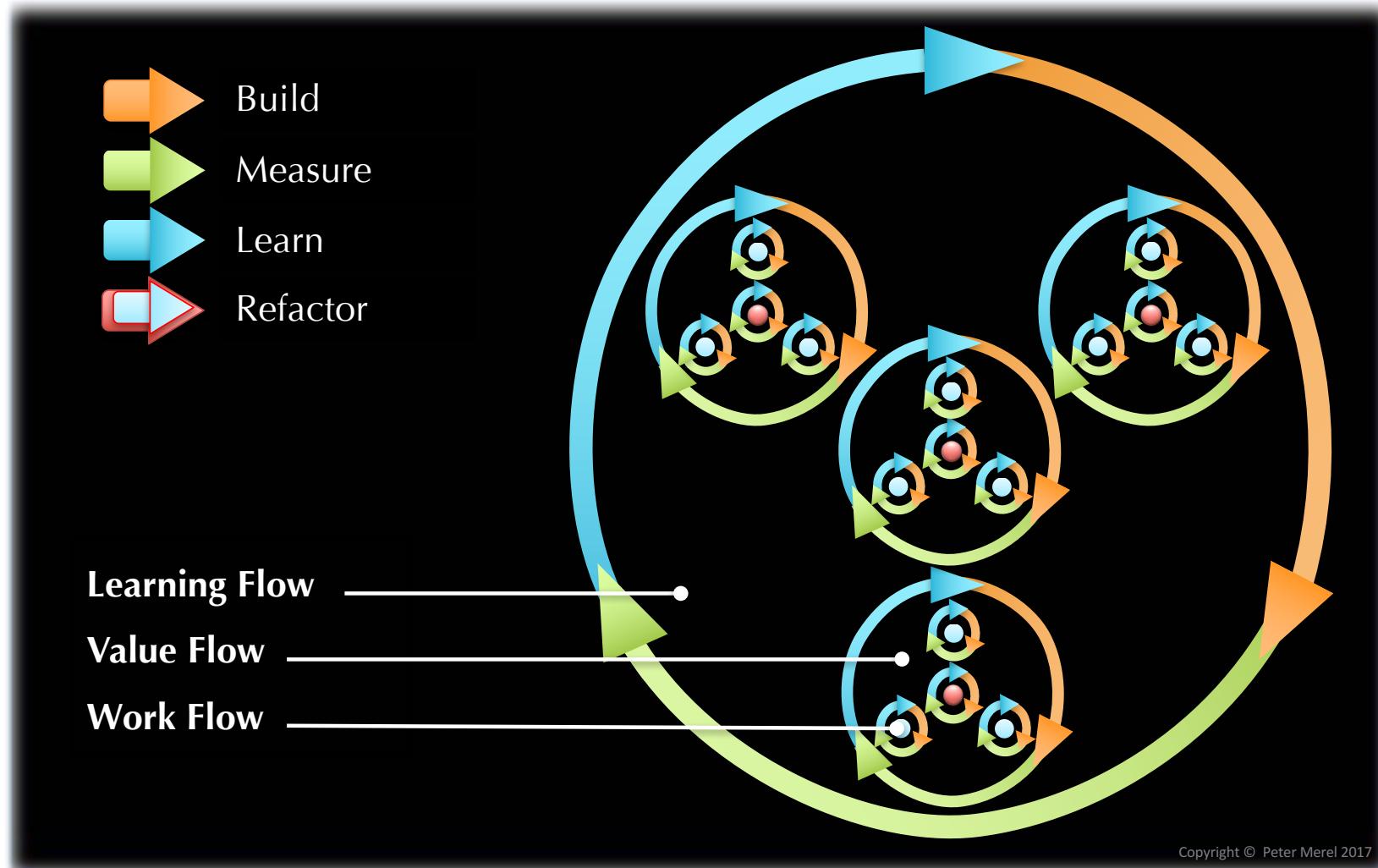


Lean Startup is single loop learning. Startups need profitability, not productivity. They learn fast or die slow.

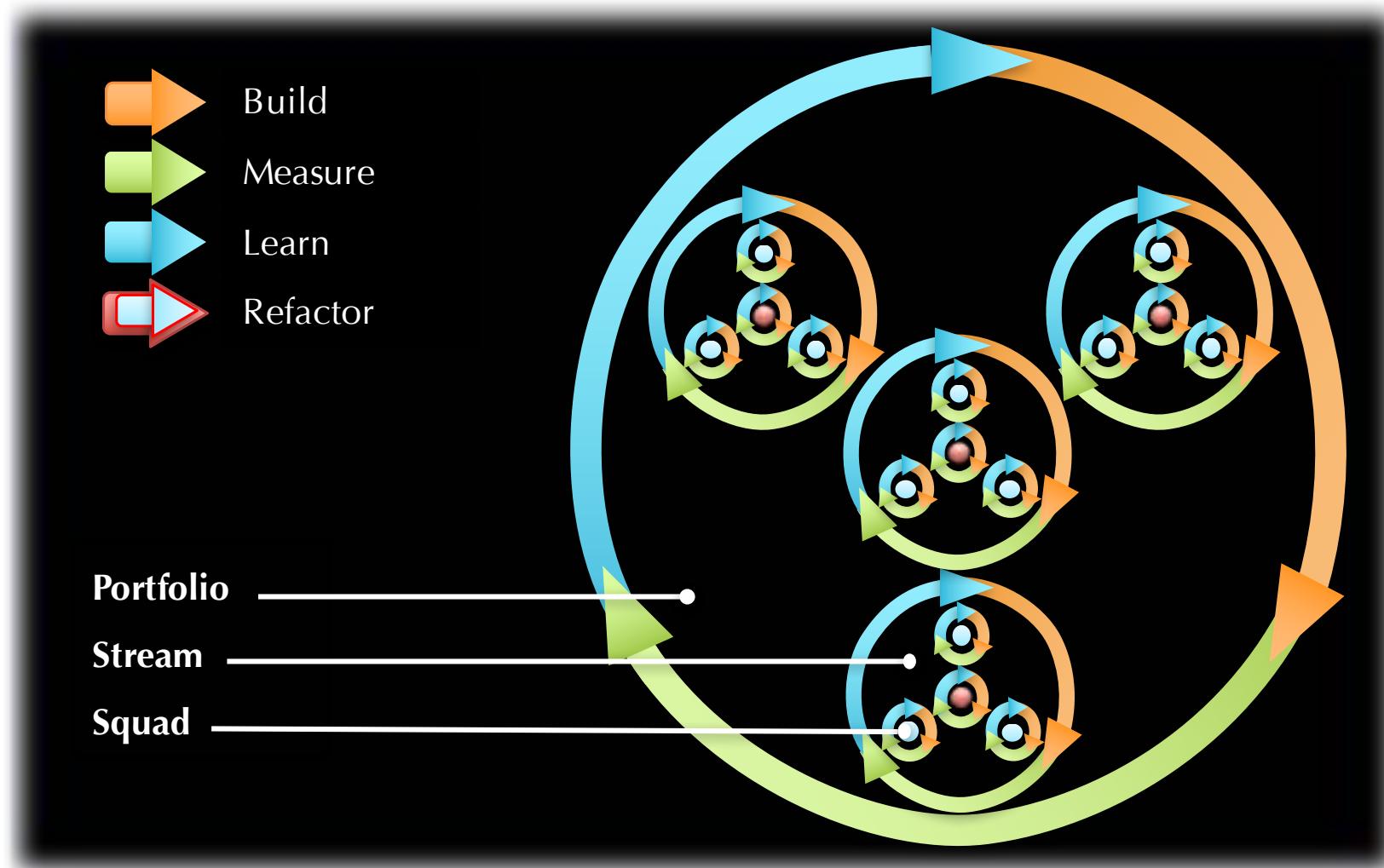
Learning



Scrum is double-loop learning.
It learns what products to deliver, and how.



Learning flow accelerates work flow
which accelerates value flow.



Triple Loop means we treat learning as a product too
and the whole organization as its ecosystem.

Why
Who
How
What

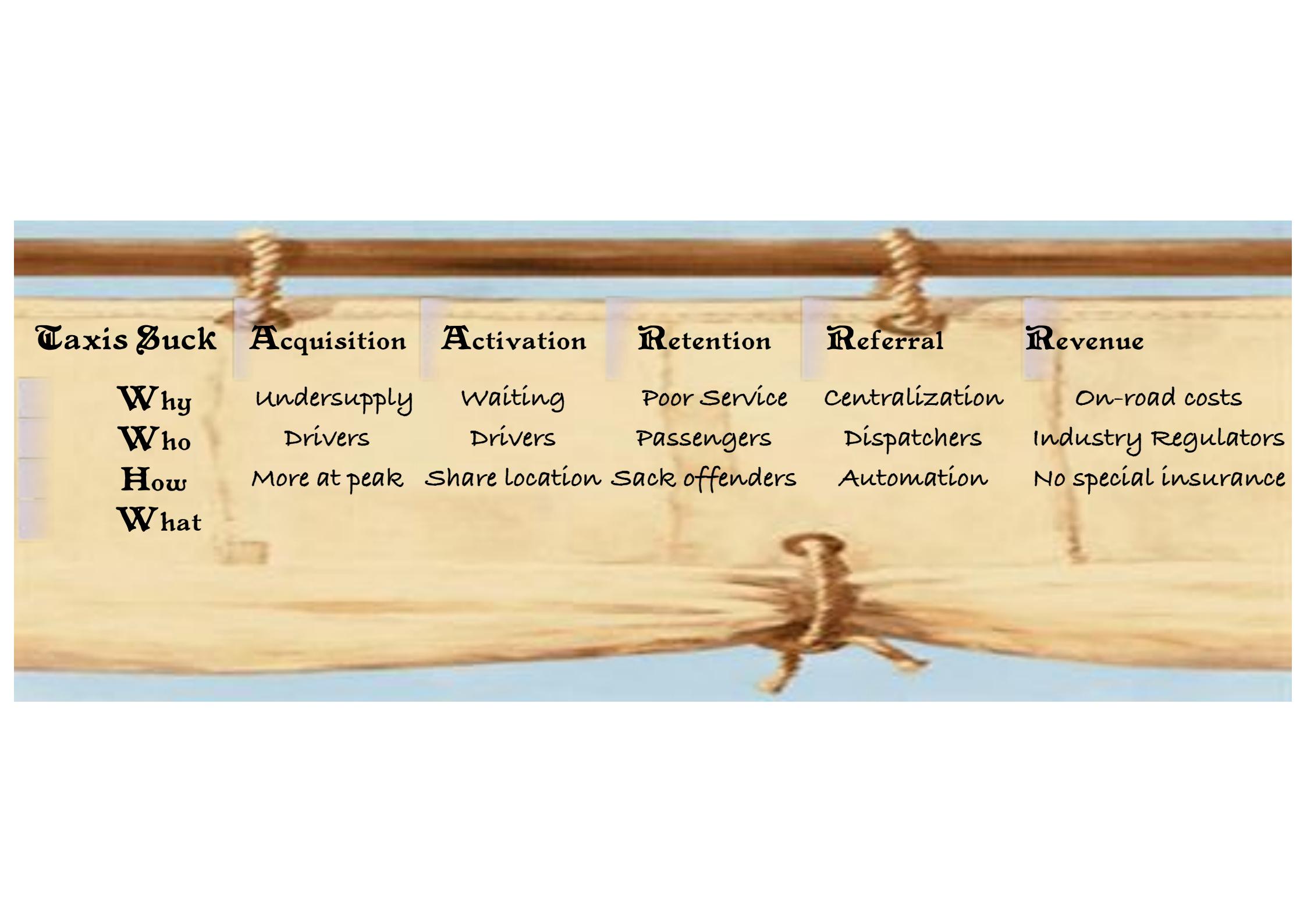
Acquisition Activation Retention Referral Revenue

The Pirate Canvas

Start With What Sucks

Taxis Suck	Acquisition	Activation	Retention	Referral	Revenue
Why	undersupply	waiting	Poor Service	centralization	On-road costs
Who					
How					
What					

Taxis Suck	Acquisition	Activation	Retention	Referral	Revenue
Why	undersupply	Waiting	Poor Service	centralization	On-road costs
Who	Drivers	Drivers	Passengers	Dispatchers	Industry Regulators
How					
What					



Taxis Suck	Acquisition	Activation	Retention	Referral	Revenue
Why	undersupply	Waiting	Poor Service	centralization	On-road costs
Who	Drivers	Drivers	Passengers	Dispatchers	Industry Regulators
How	More at peak	Share location	Sack offenders	Automation	No special insurance
What					

Taxis Suck	Acquisition	Activation	Retention	Referral	Revenue
Why	undersupply	Waiting	Poor Service	Centralization	On-road costs
Who	Drivers	Drivers	Passengers	Dispatchers	Industry Regulators
How	More at peak	Share location	Rate rides	Automation	No special insurance
What	Surge Pricing	GPS Sharing	5-star feedback	Locale Pub/Sub	Lobbying Workflow



Roll your own Pirate Canvas



What sucks for you? Use Leadership as a Service to agree.

Then split into pairs, one per pirate metric.

Iterate to generate an Epic landscape top-down.

5 minute sprints. Don't forget to winnow as you go!

Ecosystems thinking

- › Ecosystems are networks of mutual benefit
- › Whole board: think globally, act locally
- › Avoiding hill-climbing: iterative and **reductive**



Ecosystem



Ecosystems are networks of mutual benefit.

Ecosystem



The more different species they generate,
the more stable with changing constraints.

Ecosystem



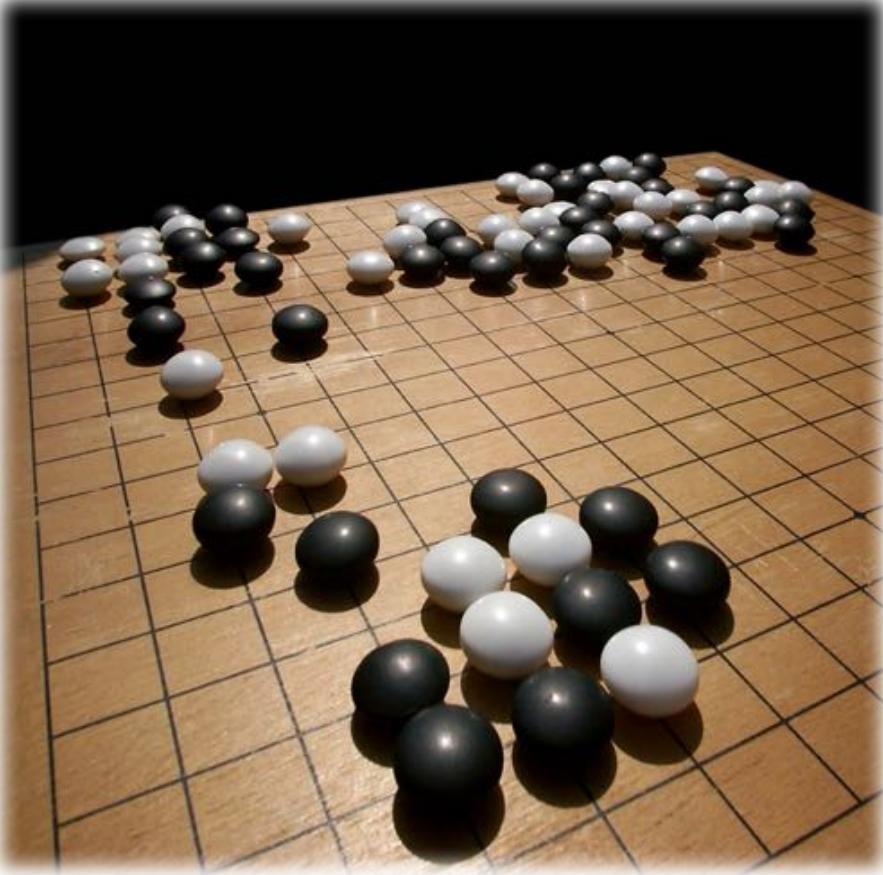
The more different relationships they supply, the more productive they become over time.

Ecosystem



And the less susceptible to catastrophe.

Ecosystem



The Chinese game of **Go** is a close analogy to business ecosystems.

Disconnected groups of stones starve and die as constraints evolve.

Successful Go ecosystems are only designed by “Whole Board Thinking”:

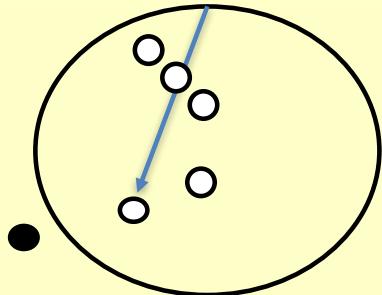
Find the space with the greatest development potential on the board.

Then narrow your focus. Breadth-first, iterative, contractive systems thinking.

Move after move, this is the only way to win. “Think globally, act locally”.

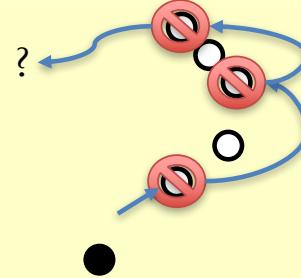
Ecosystem

Deductive Reasoning



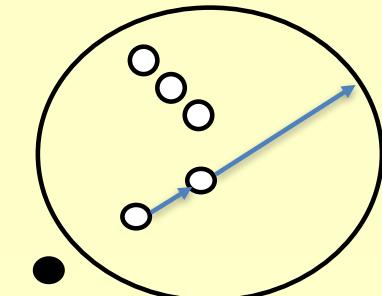
All swans are white.
I have a swan.
My swan is white.

Abductive Reasoning



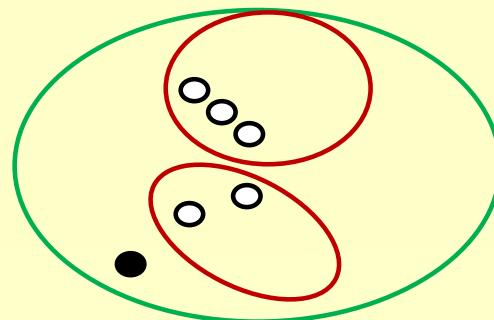
Is it a white swan? **No** but **Warm** ...
Is it a duck? Getting **Colder** ...
A chicken? **Colder** ...

Inductive Reasoning



Grandpa swan is white.
Mama swan is white.
All swans are white.

Reductive Reasoning

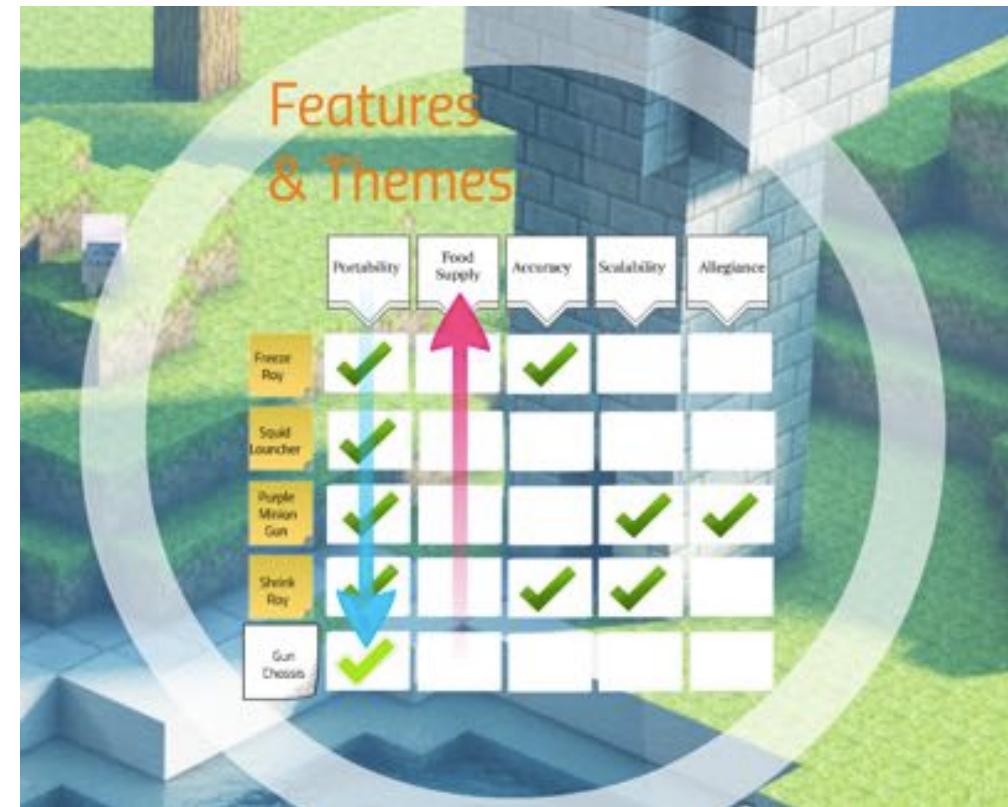


Can it swim? **Yes** ...
Size of a duck? **No** ...
Is it white? **No** ...



Behavior Driven Analysis

Quick, Breadth-first Derivation of
Features & Acceptance Criteria



For each Pirate Canvas Epic

- (a **Why/Who/How/What**):

Generate a starter set of **Features**

- using **CEASAR** or **CRUDITE** pattern
- Create/Edit/Abort/Save/Accept/Request-Help
- Create/Read/Update/Delete/Import/Transform/Export

Pick **Themes** (key categories of acceptance criteria)

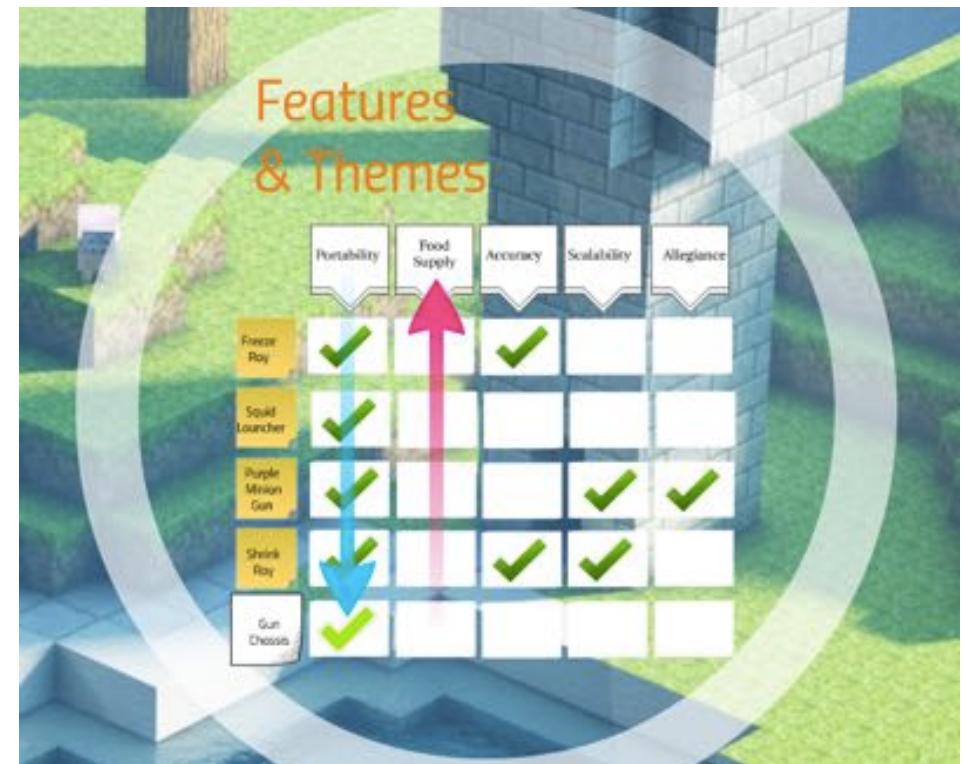
- UX Personas
- Architectural Components
- Non Functional Qualities
- Business Rules

For each Feature/Theme box, **mark it** if all agree:

- Acceptance criteria exist for that **Feature x Theme**
- Don't record detailed criteria – just go breadth-first

Sanity-checking questions generate matrix closure:

- For each Feature are there any missing Themes?
- For each Theme, are there any missing Features?
- If a Theme is all ticks, break out a Technical Feature

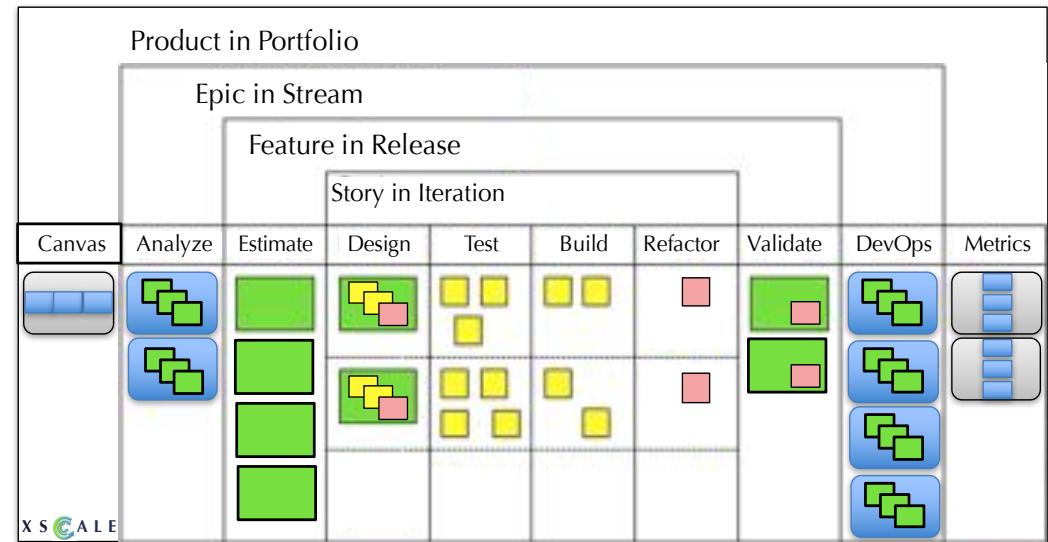
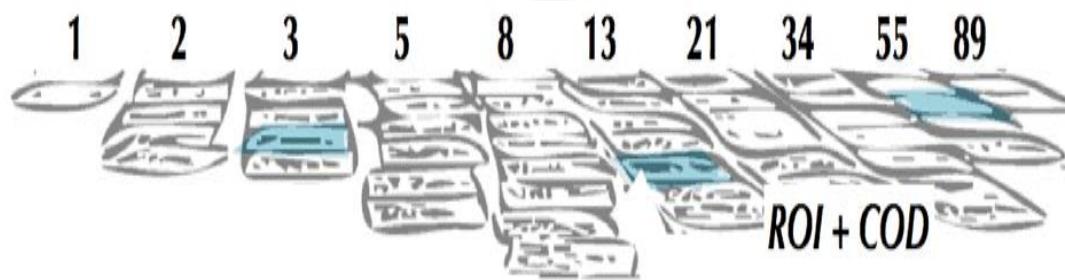
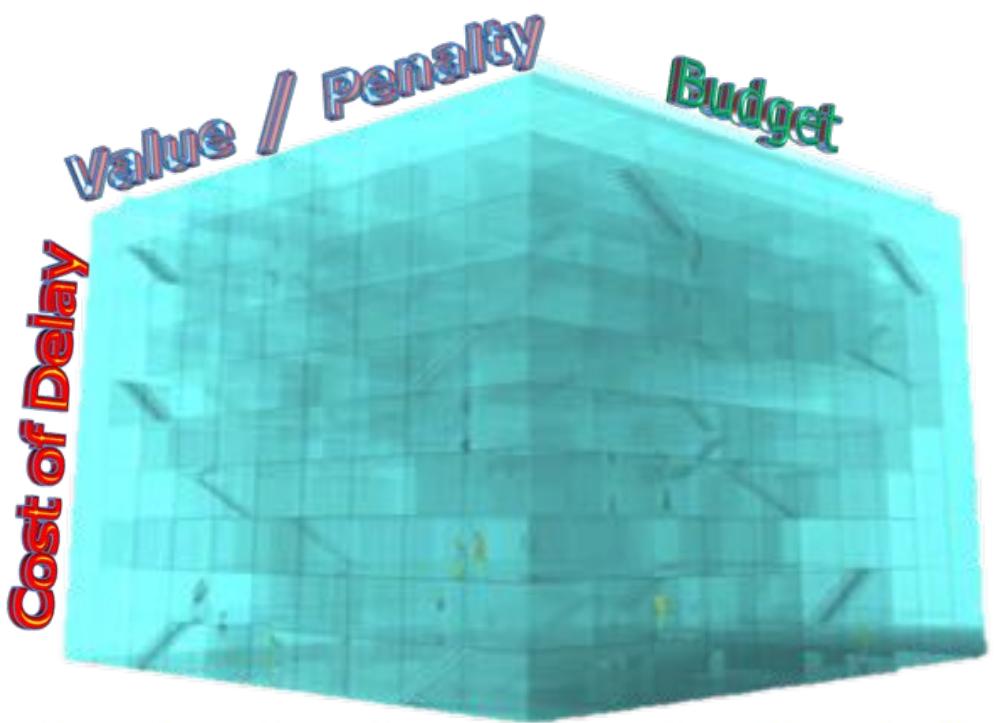




Business Bingo

Fast, Breadth-First Feature Budgets & Priorities





$$\text{ROI} = 1 + \frac{(\text{Value}^2 - \text{Budget})}{\text{Budget}}$$

Priority = ROI + COD

Lay out 10 Fibonacci Numbers to estimate Features per Epic

- Add the last 2 Fibonacci numbers to make the next
- We use Fibonacci because it makes people fight!
- Use DRIs & LaaS to get Consensus

Pick 3 "Budget Bears" – three pre-costed metric probes

- Not relative; "Feature Points" are actual budget/Feature
- Best Bears are previous Features everyone is familiar with
- Baby Bear "was easy, no surprises" – say 3 team days
- Poppa Bear big and hairy, ~20 times more expensive at 55
- Mamma Bear is the mode – about same as most features

Tech authorities estimate, Business & Design question!

- Compare feature cards one at a time vs. all on table
- Split large Features by Theme; ideally all < 21.

Record estimates on cards and do over ...

- Pick 3 previous "Business Value Bears"
- Baby Bear Feature just a bell or whistle
- Mamma is in 80% we could live without
- Poppa one of the 20% we use every day
- Business estimates, Design/Tech question

Record Business Value number and then ROI:

- $ROI = 1 + ((Value^2 - Budget) / Budget)$
- +1 prevents negative ROI when $B \gg V$
- Squared Value prevents "ties" when $V=B$

Prioritize by descending ROI. Add COD if:

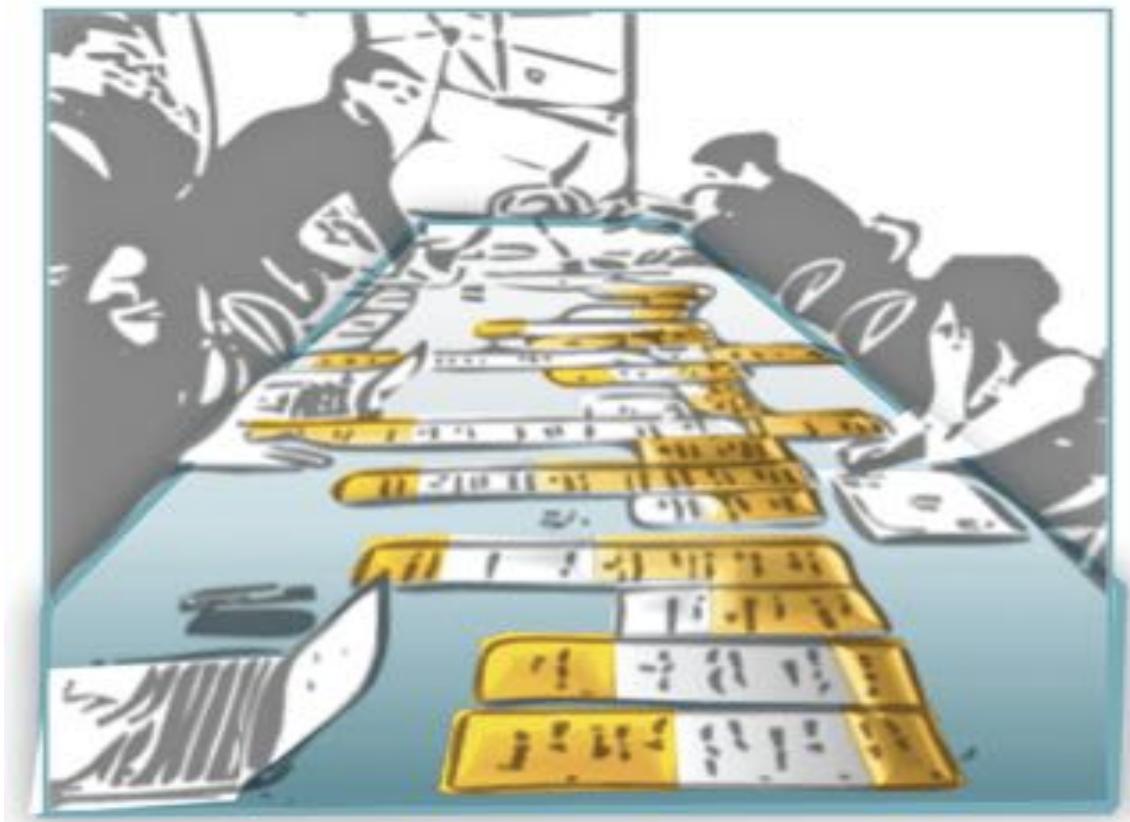
- Technical dependency trumps ROI or,
- Business forces trump ROI.





Release Refactoring

Quick, easy, reliable,
collaborative release planning.



Per Epic, lay out Features in descending ROI+COD priority

- To hit a specific date, calculate FPs you have by then given your resourcing. Otherwise calculate release dates after.

Per Epic, top-down, ask Business “could we include any of this Epic in our next Release without this Feature?”

- If not, this Feature is marked “Bronze”.

When you’re out of Bronze, ask, “Would leaving this next Feature out significantly reduce the Impact of next Release?”

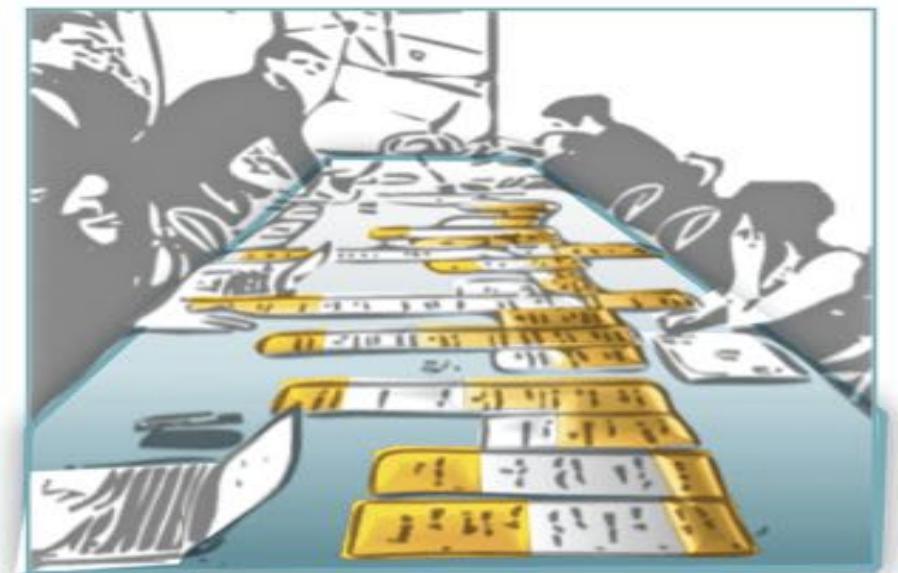
- If so, this Feature is marked “Silver”
- Otherwise it’s marked “Gold”.

Now calculate how many total FPs and how much total ROI per each Bronze, Silver and Gold Group for each Epic.

To fit a Release Date, figure which mix of Bronze, Silver and Gold Groups > max ROI within the FP budget of the release.

- Assume Silver requires Bronze, and Gold requires Silver.

Otherwise determine Release Dates by grouping for business drivers. IE. RAT, MVP, Next Bottleneck, Next Market, etc.





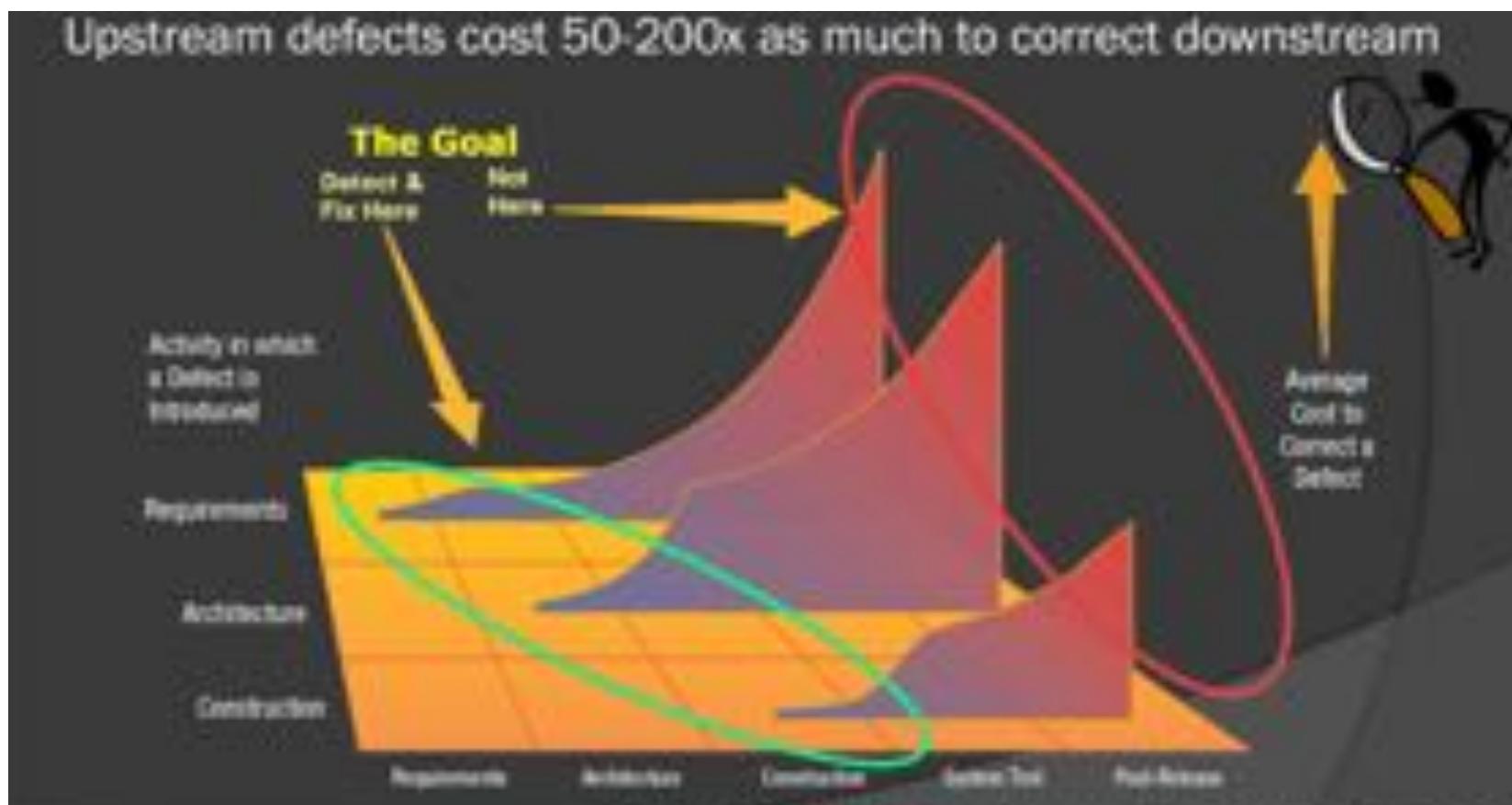
Optional:

Introduction to BDD in Gherkin.

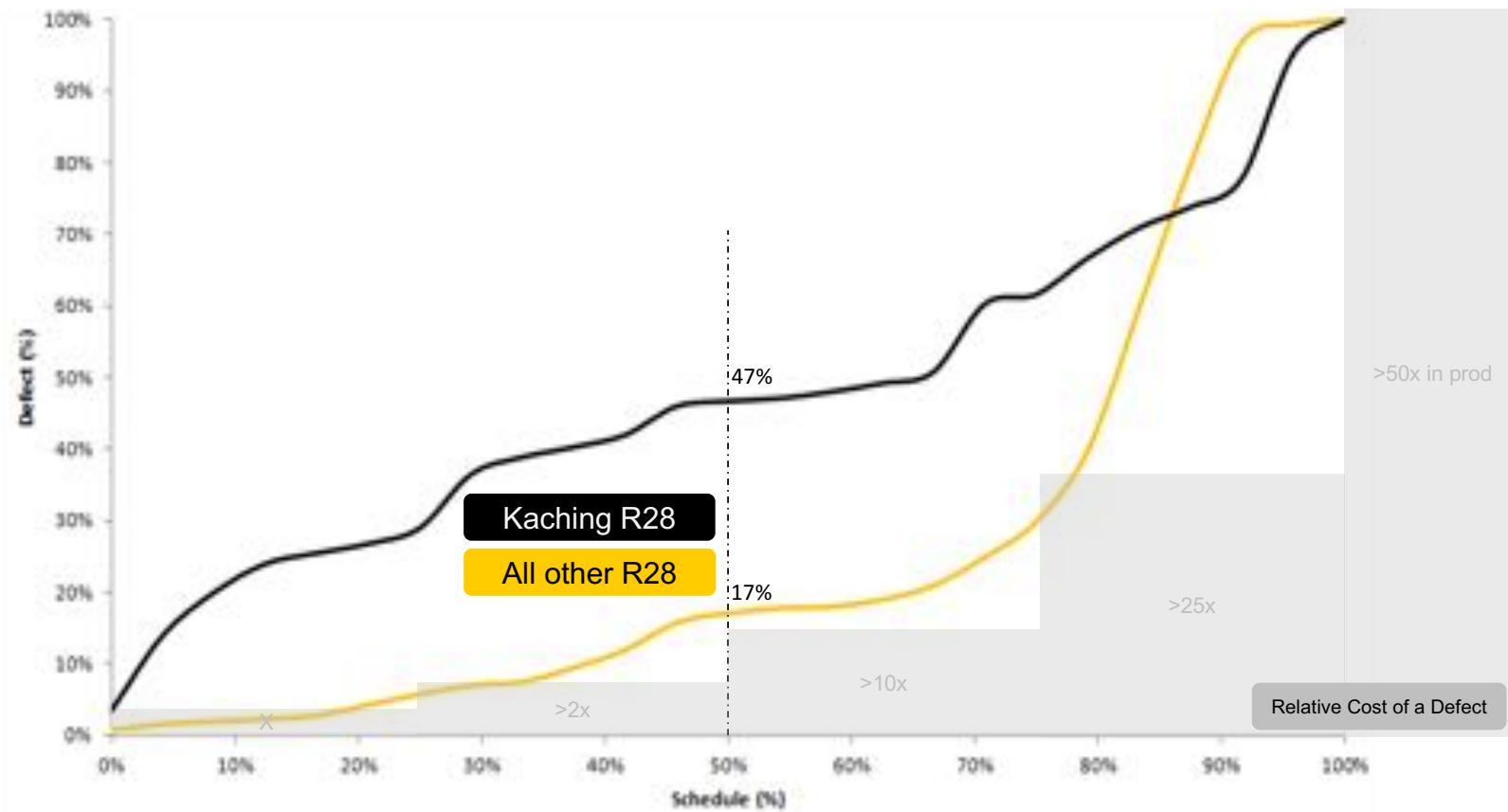
How does Product Management drive Delivery?



The cost of quality is not linear ...



Real numbers from CBA's first BDD program

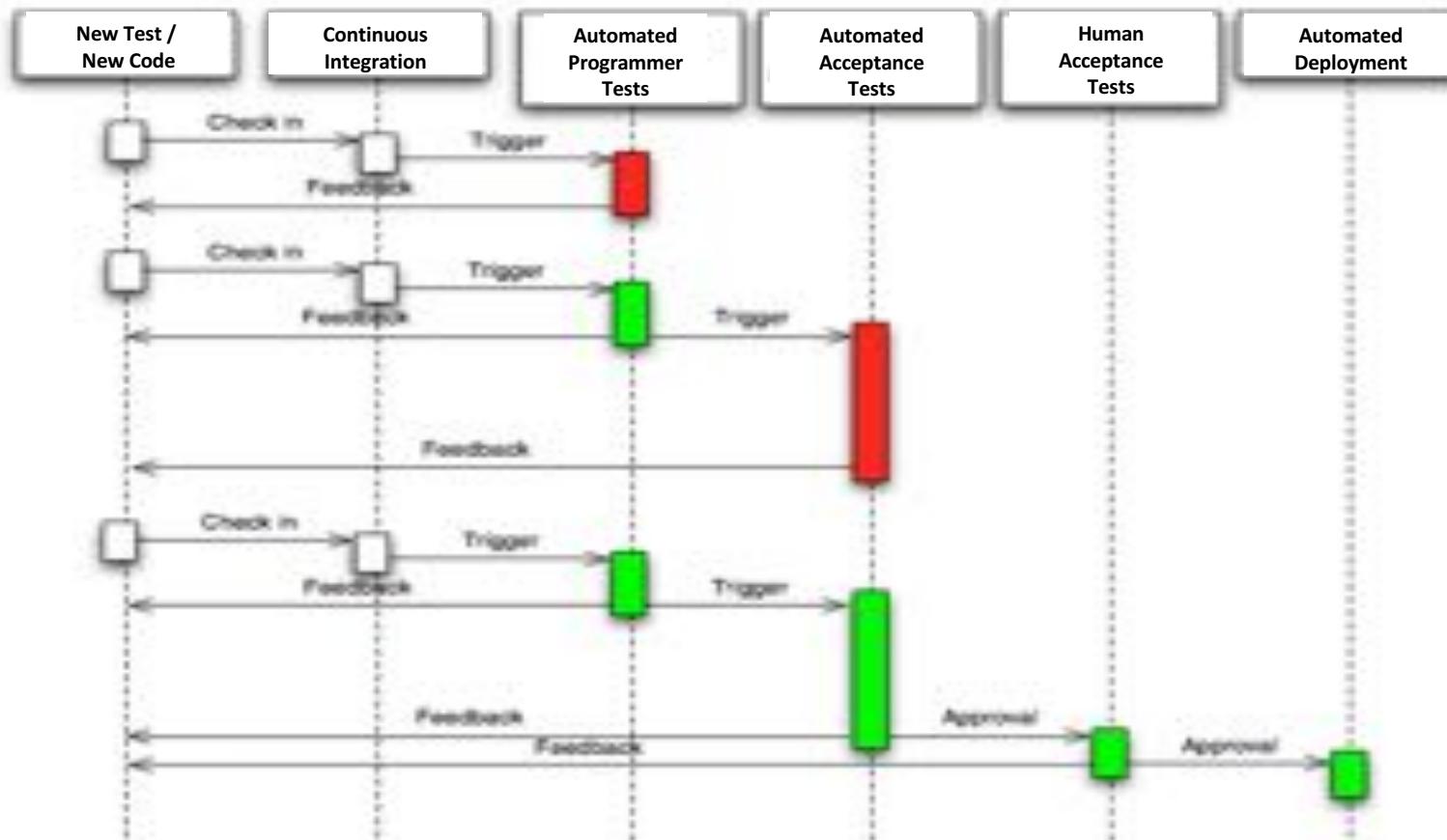


It's an old story ...

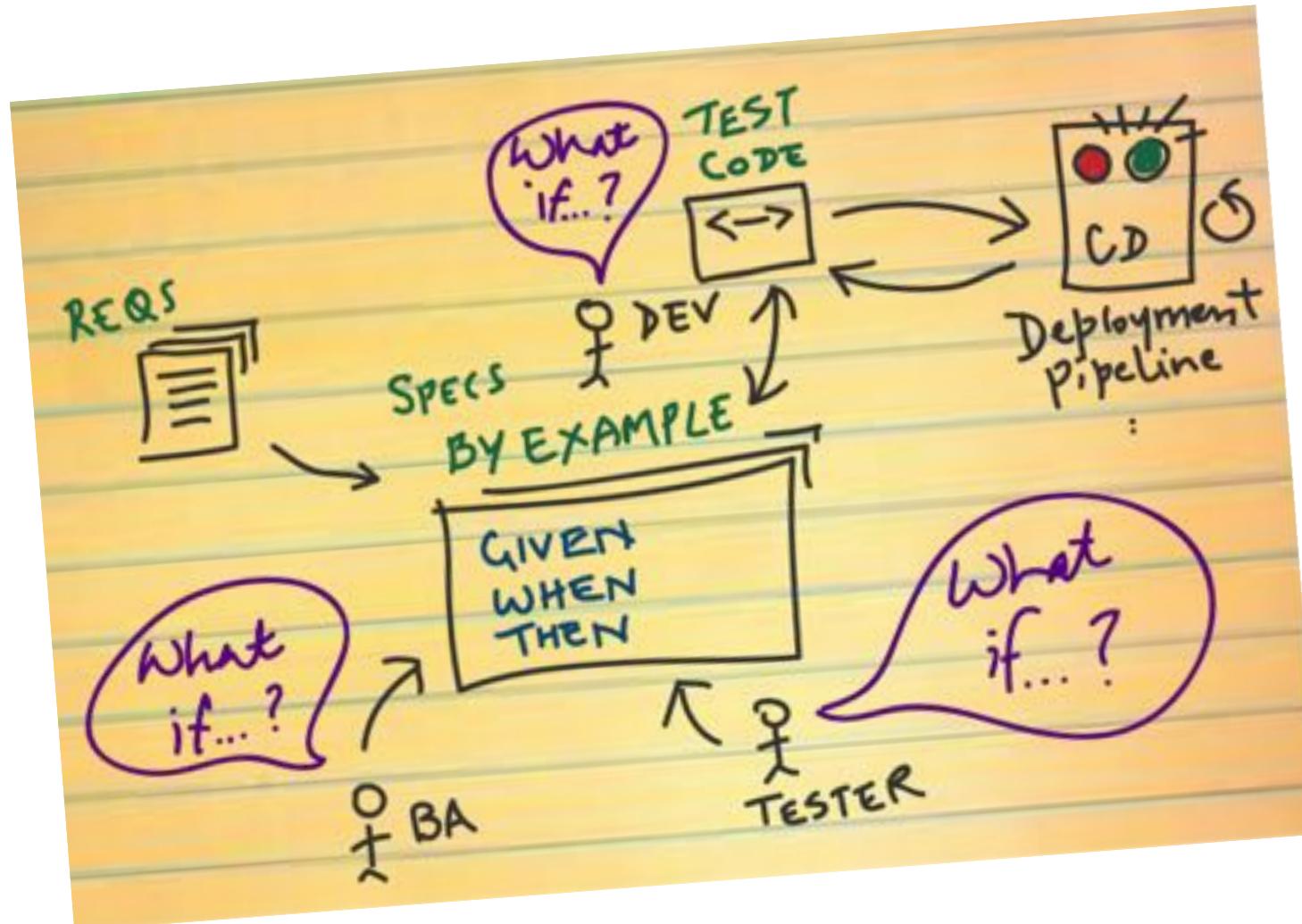
Toyota, 1965: Automated acceptance tests halt the line.
“Poka-Yoke” eliminates rework in manufacturing.



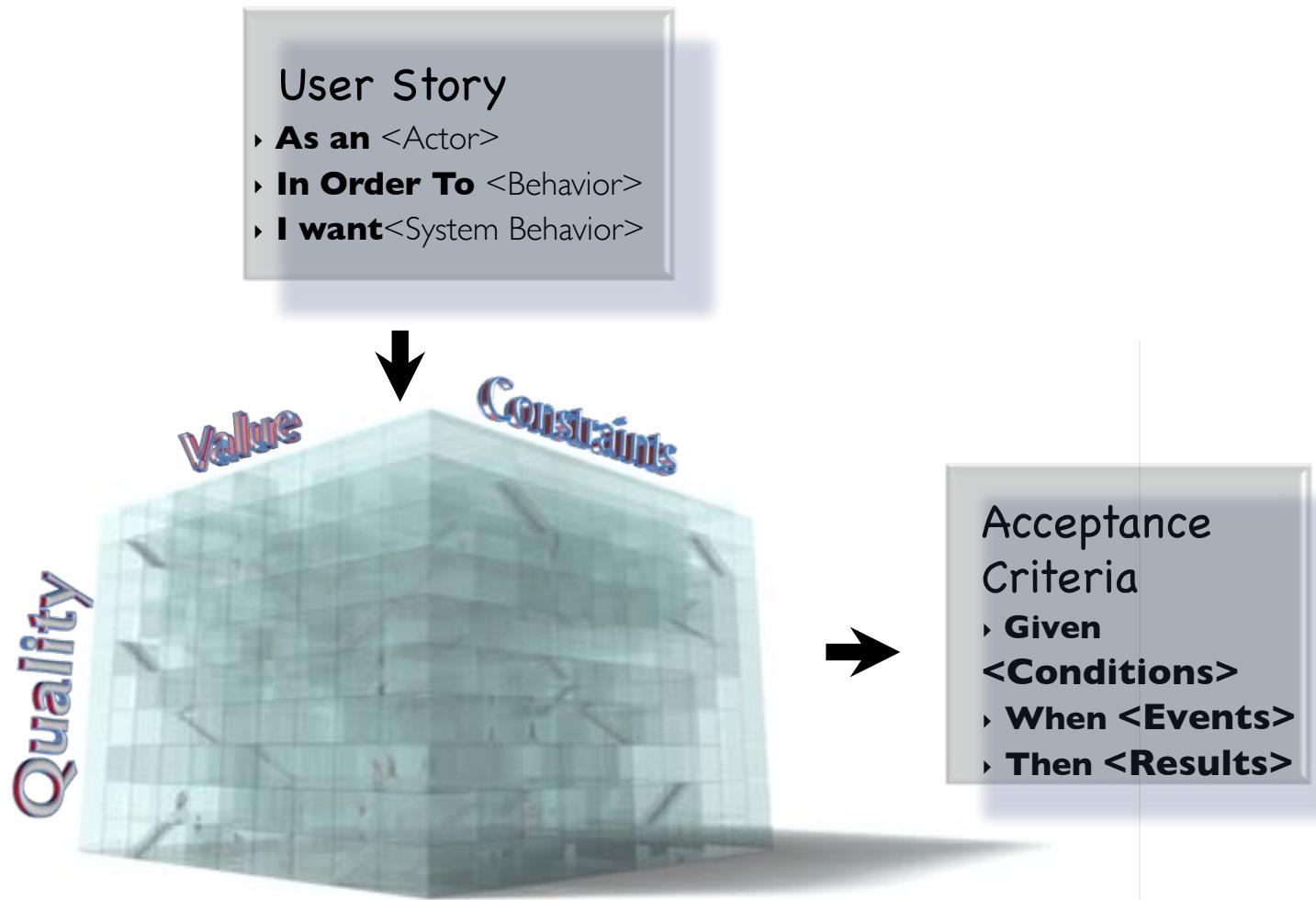
BDD eliminates rework in Software Delivery ...
More than that, it's how we align on "Done".



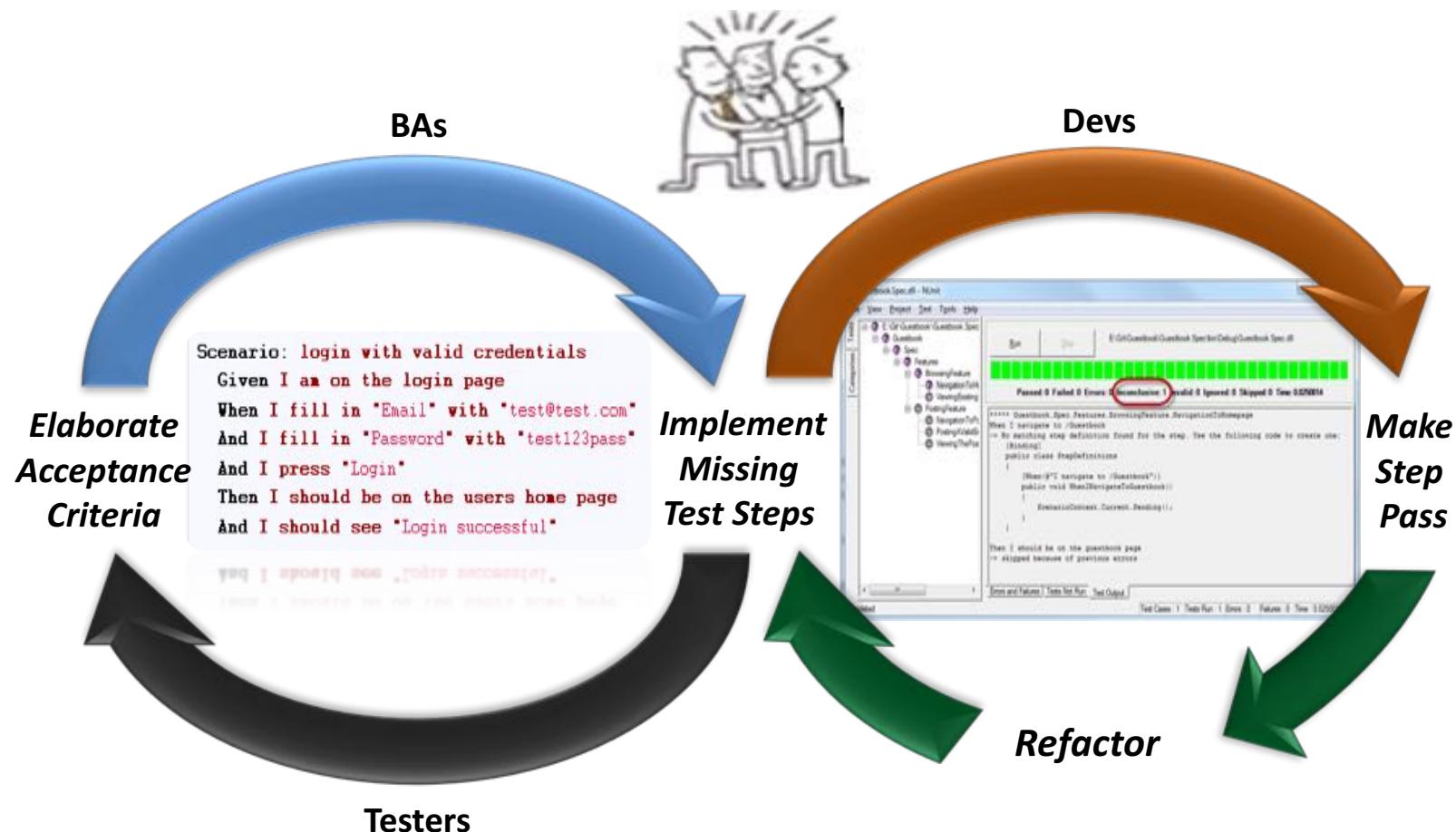
BDD is something we do together.



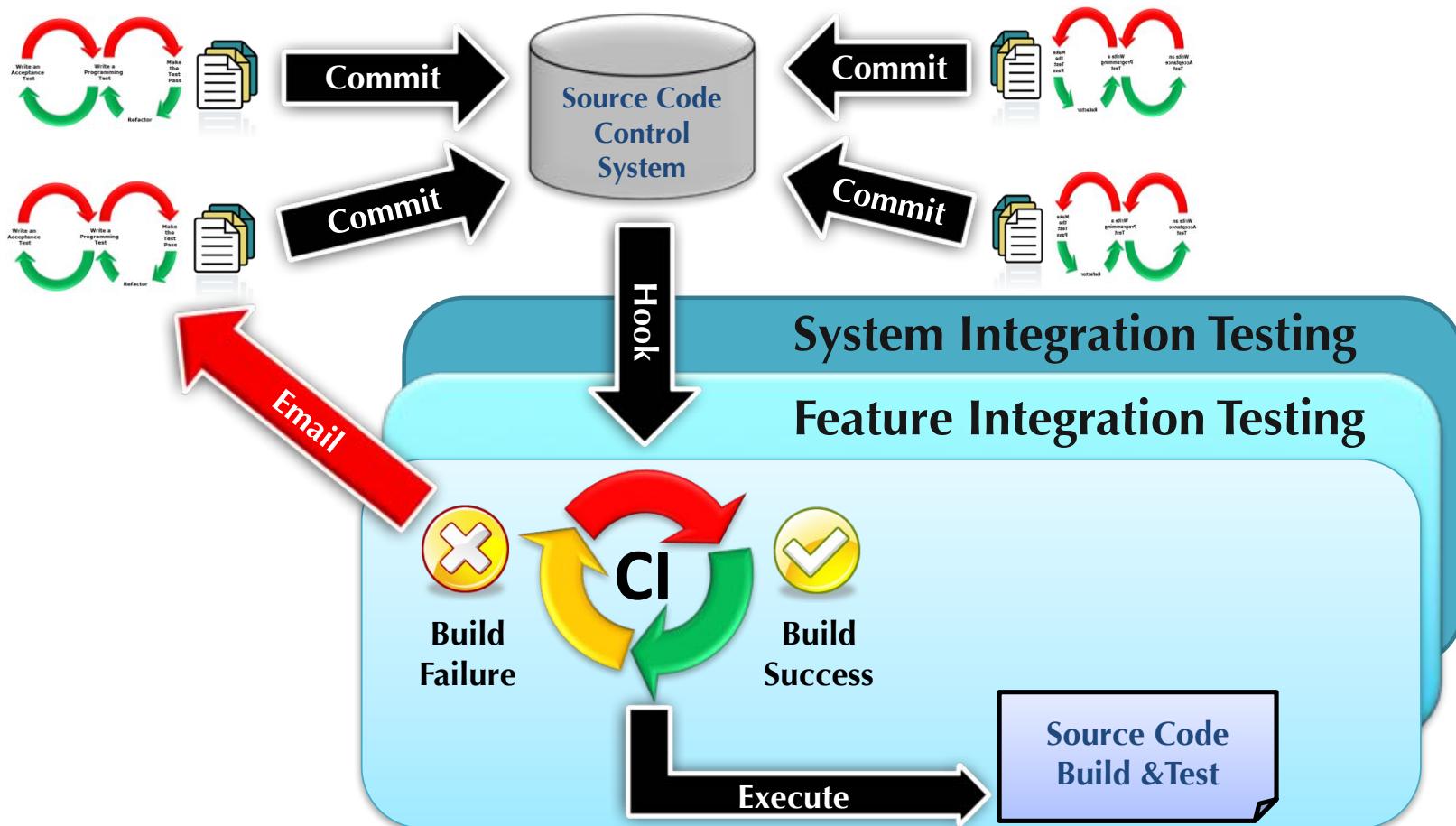
Acceptance criteria expand those ticks in the Acceptance Matrix.



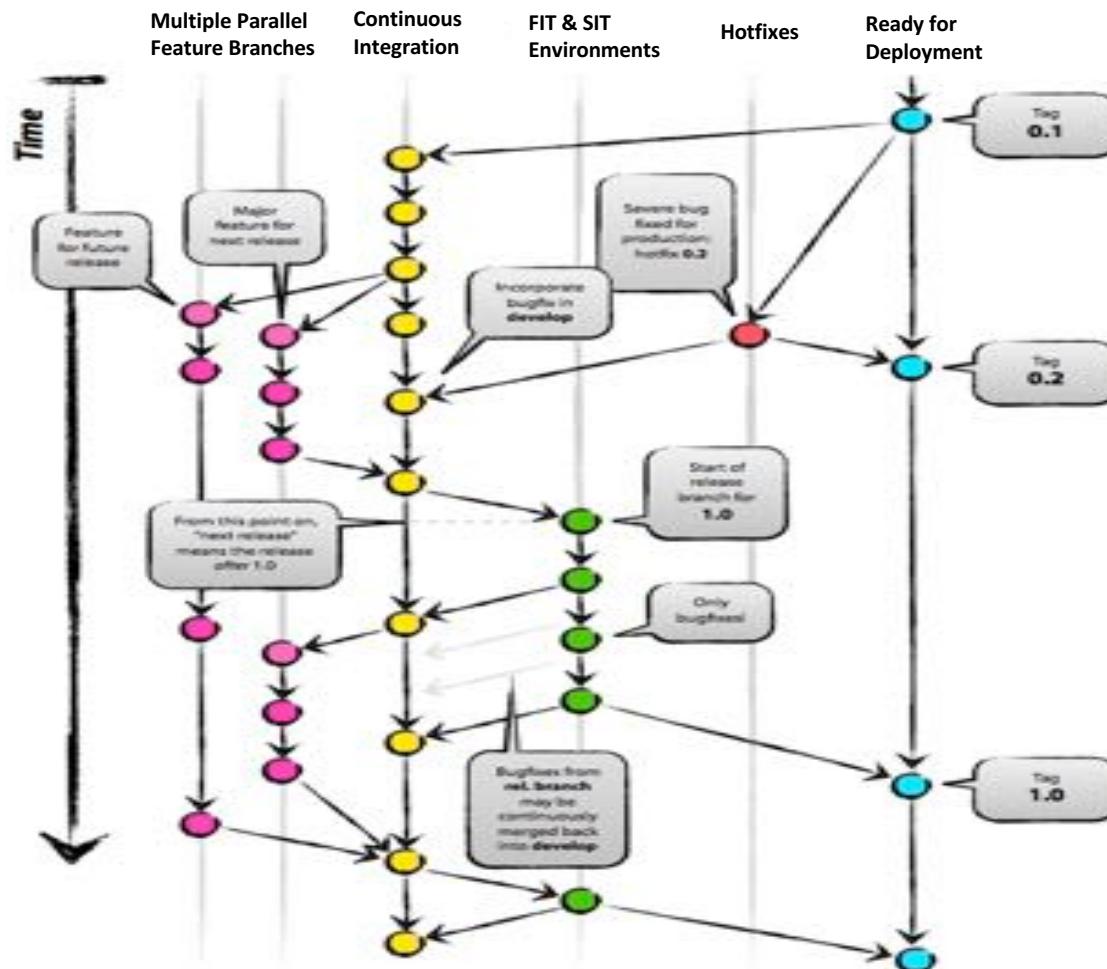
Acceptance criteria automated by **Three Amigos** Delivery Teams collaborate on each “sushi” requirement



CI is the modern “Poka-Yoke”. Zero Defect Tolerance.



BDD enables Decentralized Continuous Delivery.



Acceptance Criteria

• Given, When, Then, And, But

- Given: put the system in a known state before the user (or external system) starts interacting with the system (in the When steps)
- Whens: describe the key action the user performs
- Then: observe outcomes related to the business value/benefit in your feature description. The observations should inspect the output of the system (a report, user interface, message, command output)
- And, But: If you have several Given, When or Then steps you can use And or But steps, allowing your Scenario to read more fluently:

Scenario: Multiple Givens

Given one thing

Given an other thing

Given yet an other thing

When I open my eyes

Then I see something

Then I don't see something else



Scenario: Multiple Givens

Given one thing

And an other thing

And yet an other thing

When I open my eyes

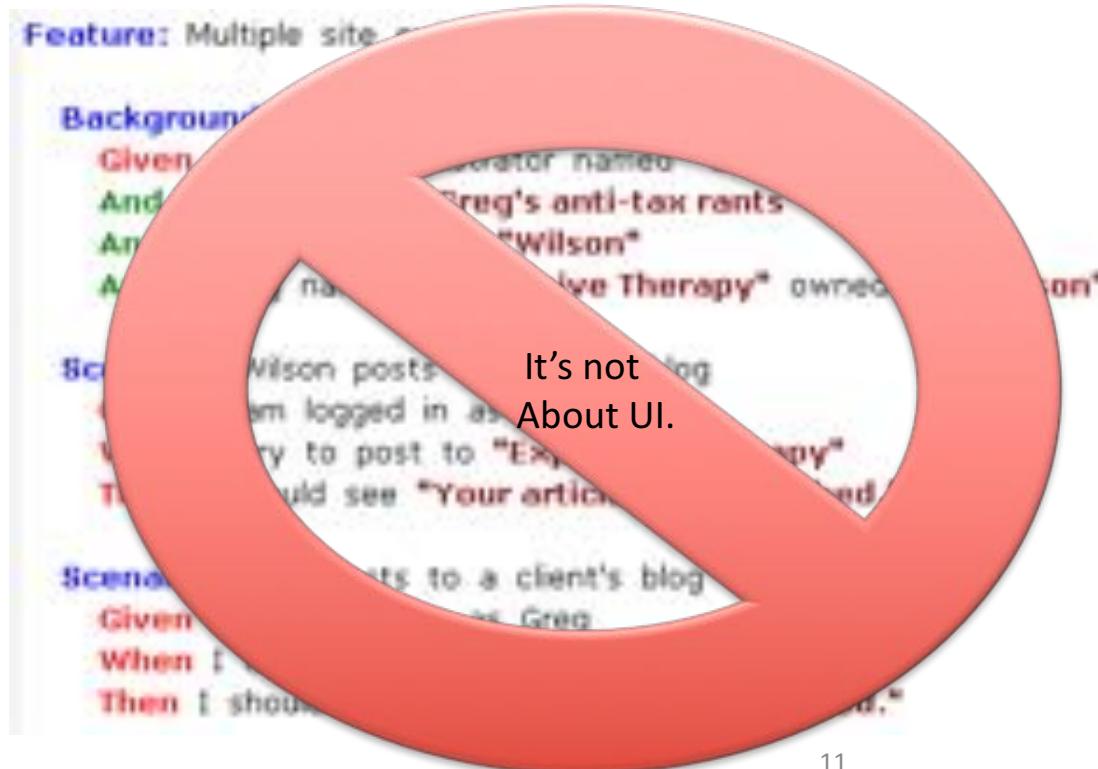
Then I see something

But I don't see something else

Gherkin Syntax

Backgrounds

- Backgrounds allows you to add some context to all scenarios in a single feature. A Background is like an untitled scenario, containing a number of steps.
- The difference is when it is run: the background is run before each of your scenarios





Practical: Pick a Feature, generate the Gherkin

Gherkin Syntax - Tables

Tables

- Tables as arguments to steps are handy for specifying a larger data set - usually as input to a Given or as expected output from a Then.

Scenario:

Given the following people exist:

name	email	phone
Aslak	aslak@email.com	123
Joe	joe@email.com	234
Bryan	bryan@email.org	456

Gherkin Syntax - Outlines

Scenario Outline

- Scenario Outlines allow us to more concisely express these examples through the use of a template with placeholders

The diagram illustrates the conversion of multiple scenarios into a single scenario outline. On the left, two separate scenarios are shown:

Scenario: Eat 5 out of 12
Given there are 12 cucumbers
When I eat 5 cucumbers
Then I should have 7 cucumbers

Scenario: Eat 5 out of 20
Given there are 20 cucumbers
When I eat 5 cucumbers
Then I should have 15 cucumbers

A large blue arrow points from these two scenarios to the right, where they are transformed into a scenario outline and an examples table:

Scenario Outline: Eating
Given there are <start> cucumbers
When I eat <eat> cucumbers
Then I should have <left> cucumbers

Examples:

start	eat	left
12	5	7
20	5	15

- The Scenario outline steps provide a template which is never directly run. A Scenario Outline is run once for each row in the Examples section beneath it (not counting the first row of column headers).

Gherkin Syntax - Tags

Tags

- Tags are a great way to organize your features and scenarios and to be able to report on different sets of scenarios, e.g. business critical scenarios @businesscritical, @highvolume
- A Scenario or Feature can have as many tags as you like, just separate them with spaces:

```
@billing
```

```
Feature: Verify billing
```

```
@important
```

```
Scenario: Missing product description
```

```
Scenario: Several products
```

```
@billing @bicker @annoy
```

```
Feature: Verify billing
```



Take existing scenarios and refactor with gherkin syntax.

- Background
- Step Table
- Scenario outline
- Example Table
- Tags



Lean Tea Q&A

Exponential Product Management

- Why, Who, How & What?
 - The XSCALE Principles
- Game: Exponential Throughput
 - Via “Minty Machines”
- Game: Set-based Logo Design
 - Working as a Product Squad
- Product Squad Ceremonies
 - Leadership as a Service & DRIs
- Throughput & Batch Size
 - How to design for Ecosystems Growth
- Practice: Pirate Canvas
 - Impact Mapping the Pirate Metrics
- Practice: Behavior Driven Analysis
 - How to use Kanban to whip WIP
- Practice: Business Bingo
 - Change as a Product
- Practice: Release Refactoring
 - Lean Tea
- Practice: Behavior Driven Development
 - Continuous Delivery



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