

The End of General
Purpose Languages:

Rubinius 3.0 and the
Next 10 million Programs

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What will the next

10 million programs

look like?

What language will we use?

How will we write them?

Where will they run?

What will they do?

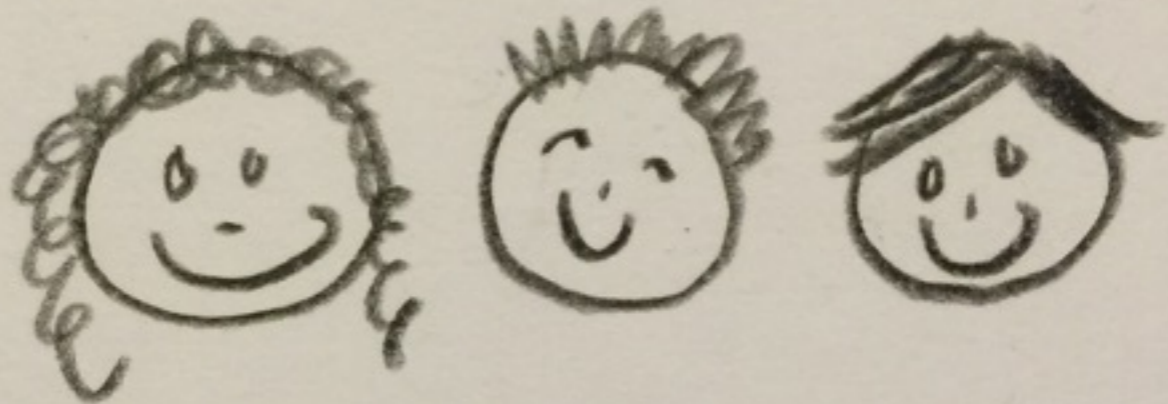
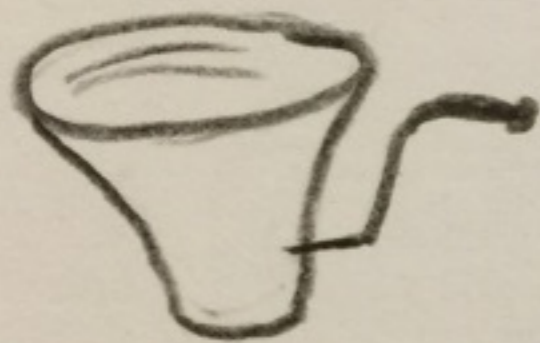
Who will use them?

Why will we write them?

Everything that can be
created, distributed or consumed
digitally, WILL be.

Welcome to the Digital Revolution

An existential struggle -
creating value for our customers



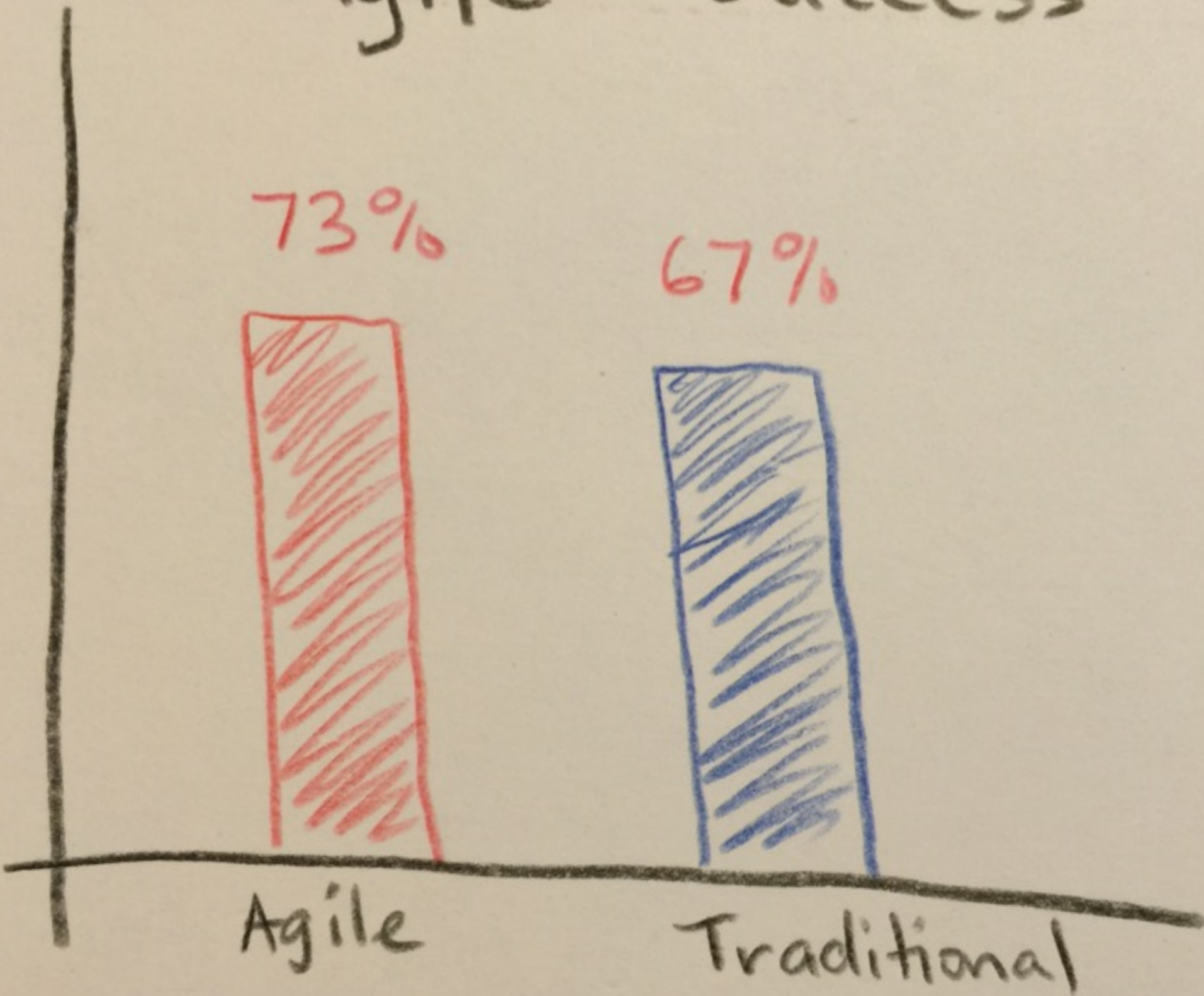
The Problem

Too slow

Cost too much

Fail too often

Agile Success

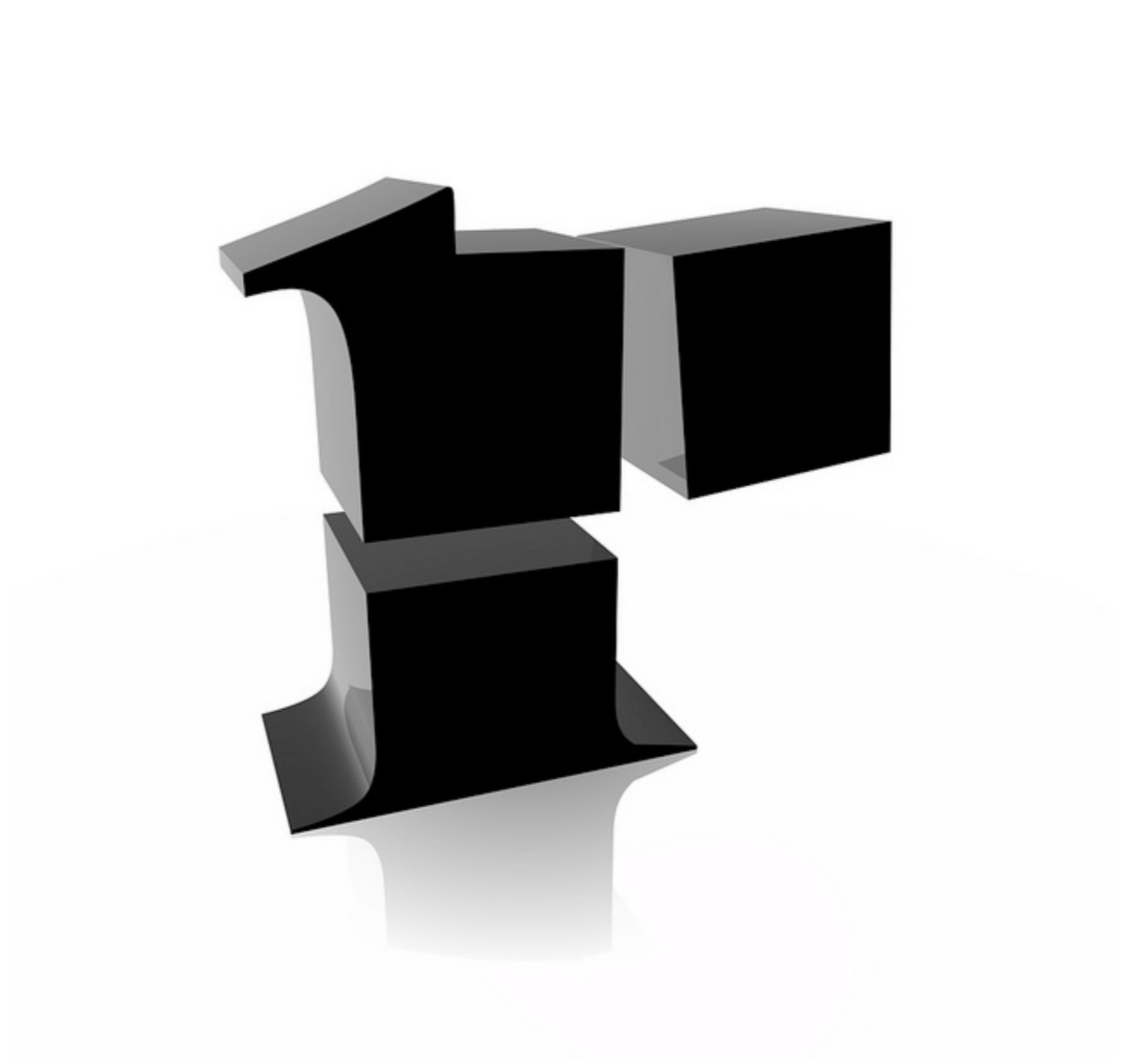


Agile -

you're doing it WRONG



enova.®



MEMO

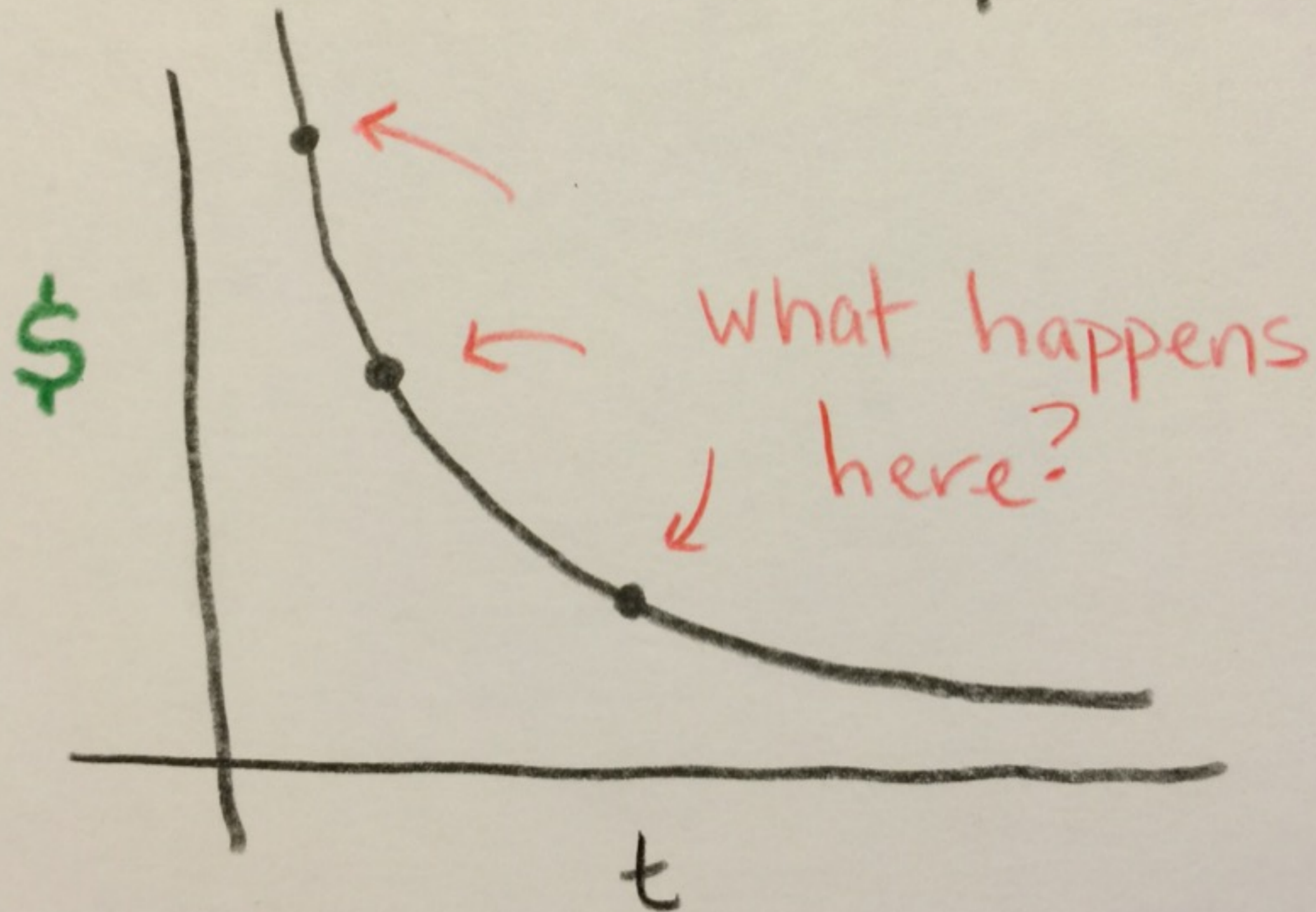
Date: 21st Century

To: Whom it may concern

RE: The Digital Revolution

The world as you know it
no longer exists. Deal with it.

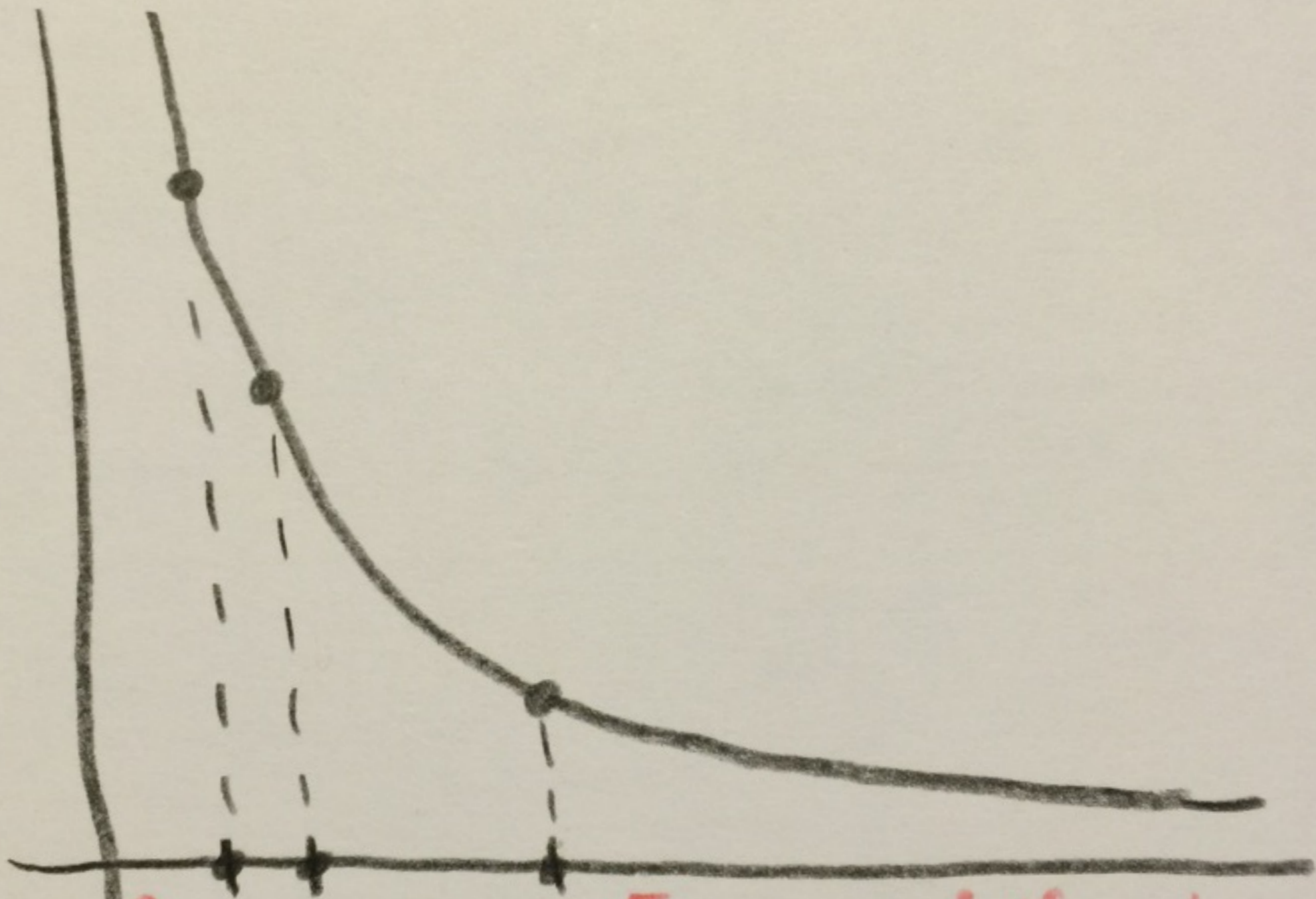
Cost Gravity



"Cost gravity takes emperor's toys and turns them into commoner's tools, and as it does this, it drives profound social, economic, and political change."

- Pieter Hintjens

Culture & Empire:
Digital Revolution



impossible

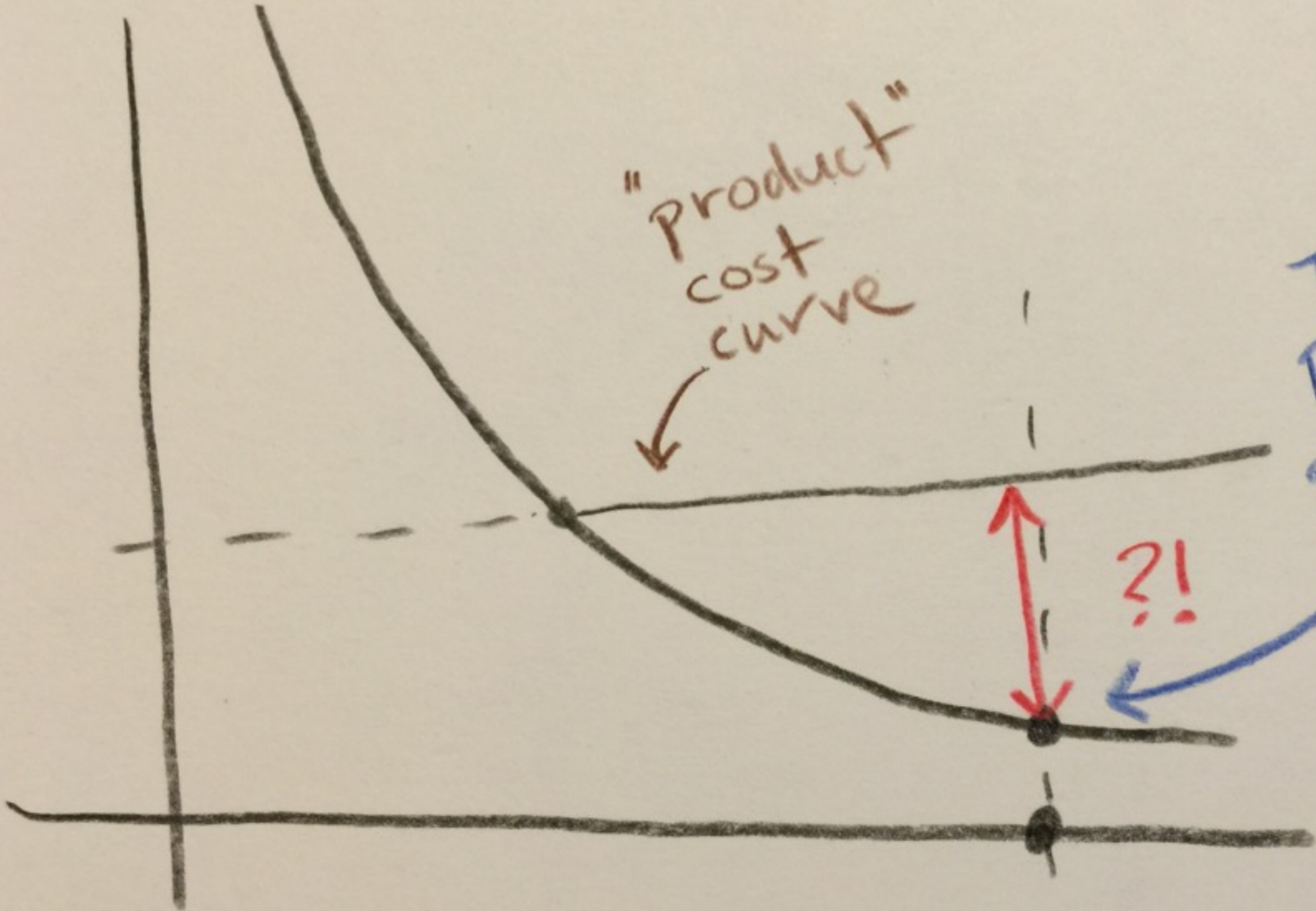
custom

specialized
general purpose

"product
cost
curve"

The
Big
Rewrite

?!



"When you accept the tangible reality that innovation changes who you become, you begin to acquire the ability to innovatively empathize with your customers."

- Michael Schrage

What do you want
your customers
to become?

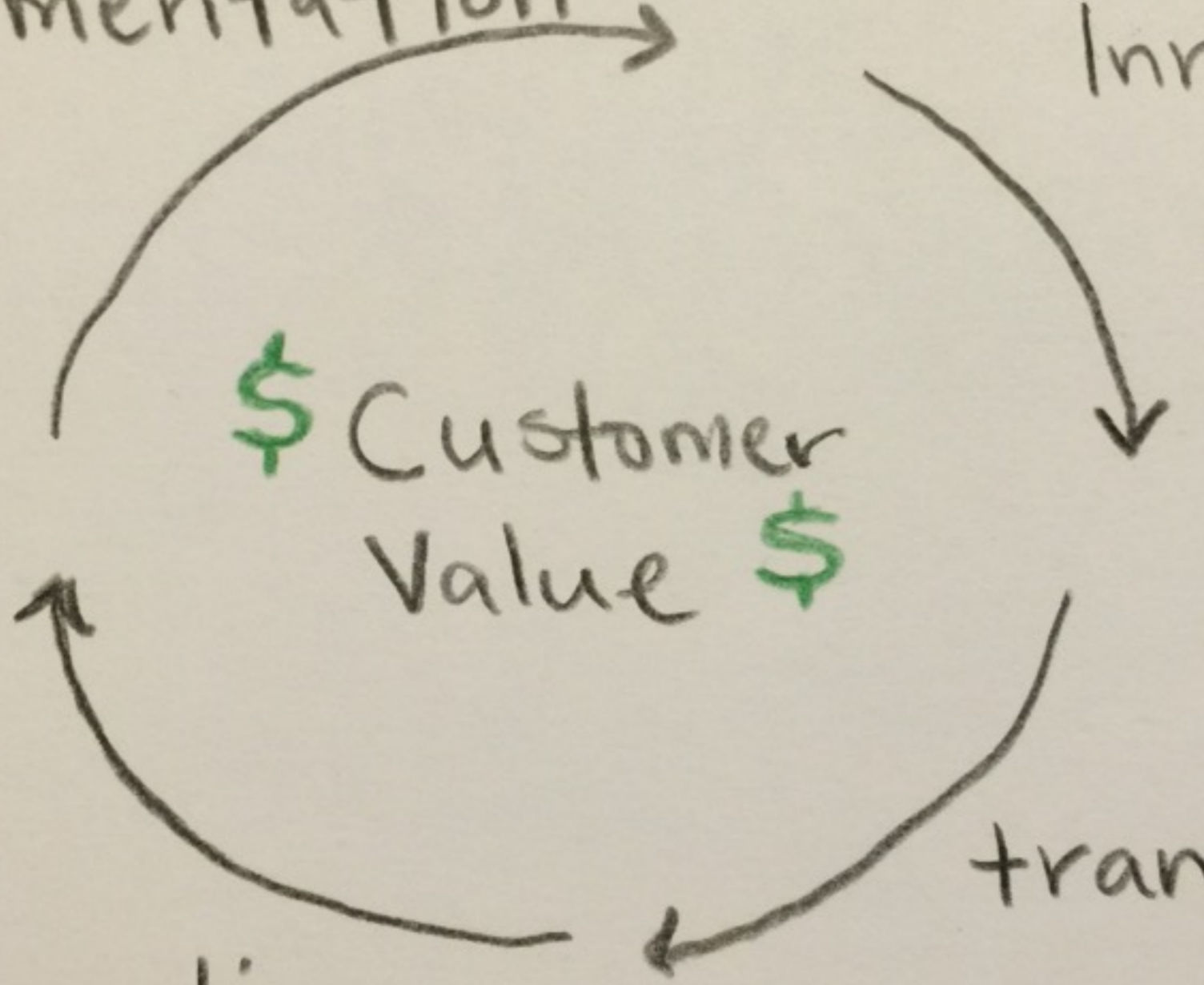
experimentation →

Innovation

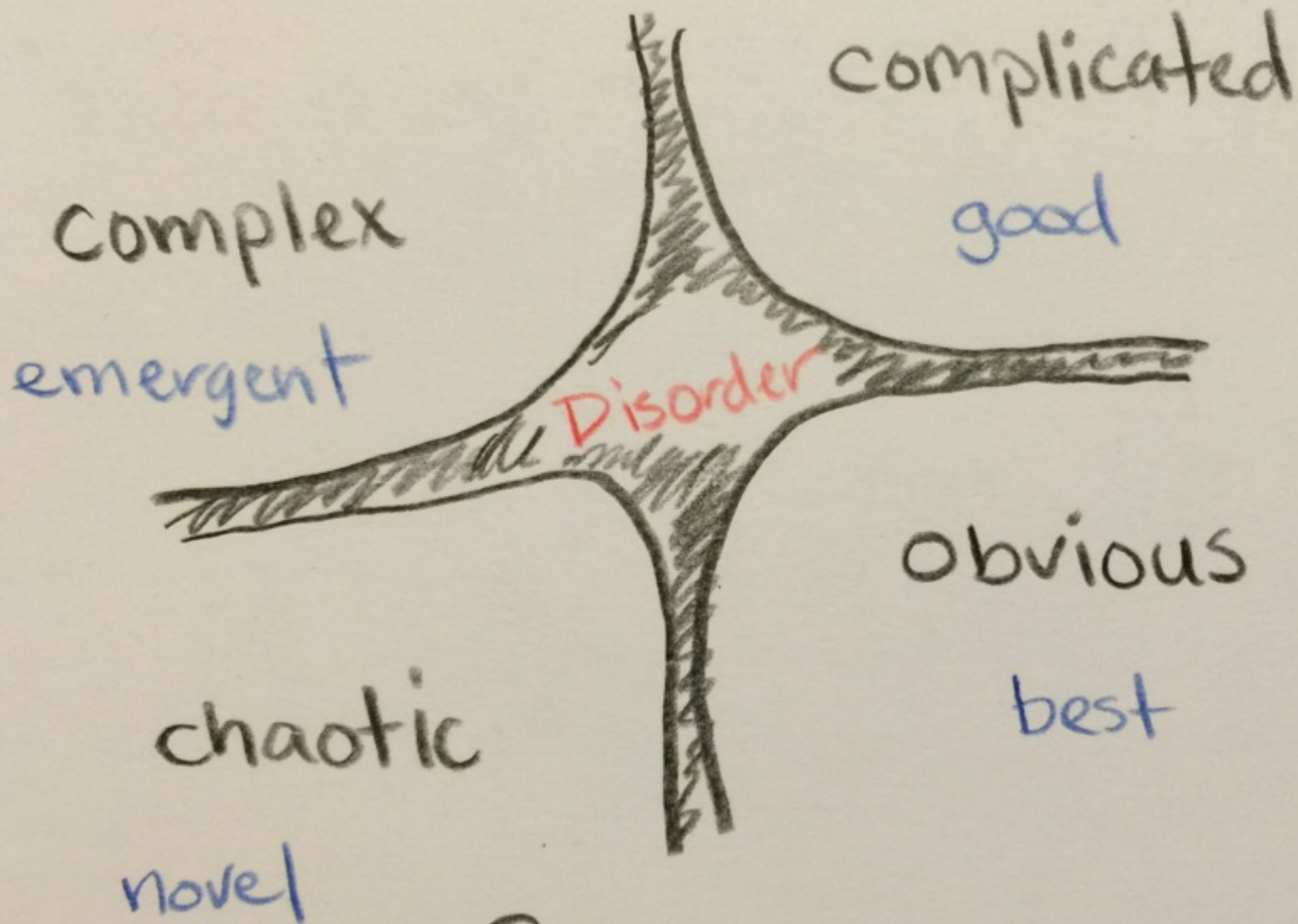
\$ Customer Value \$

transformation

collaboration



Types of Order



Cynefin

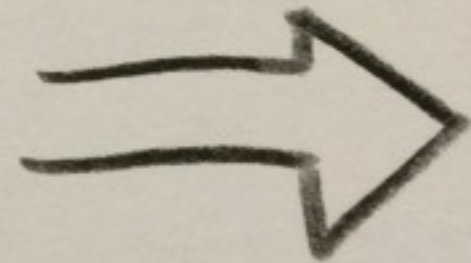
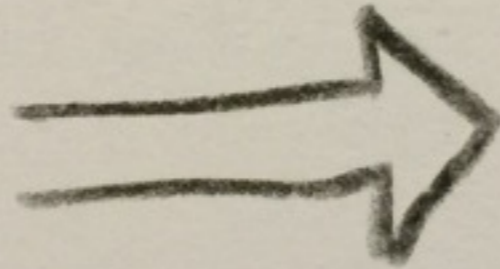
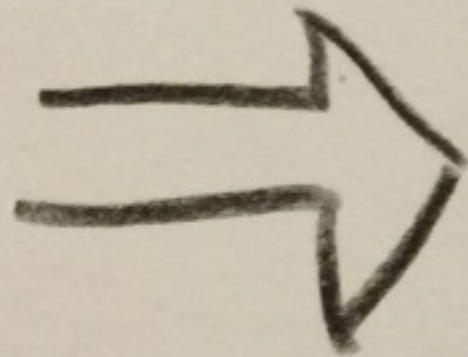
Cause and Effect

predictability

A

B

C

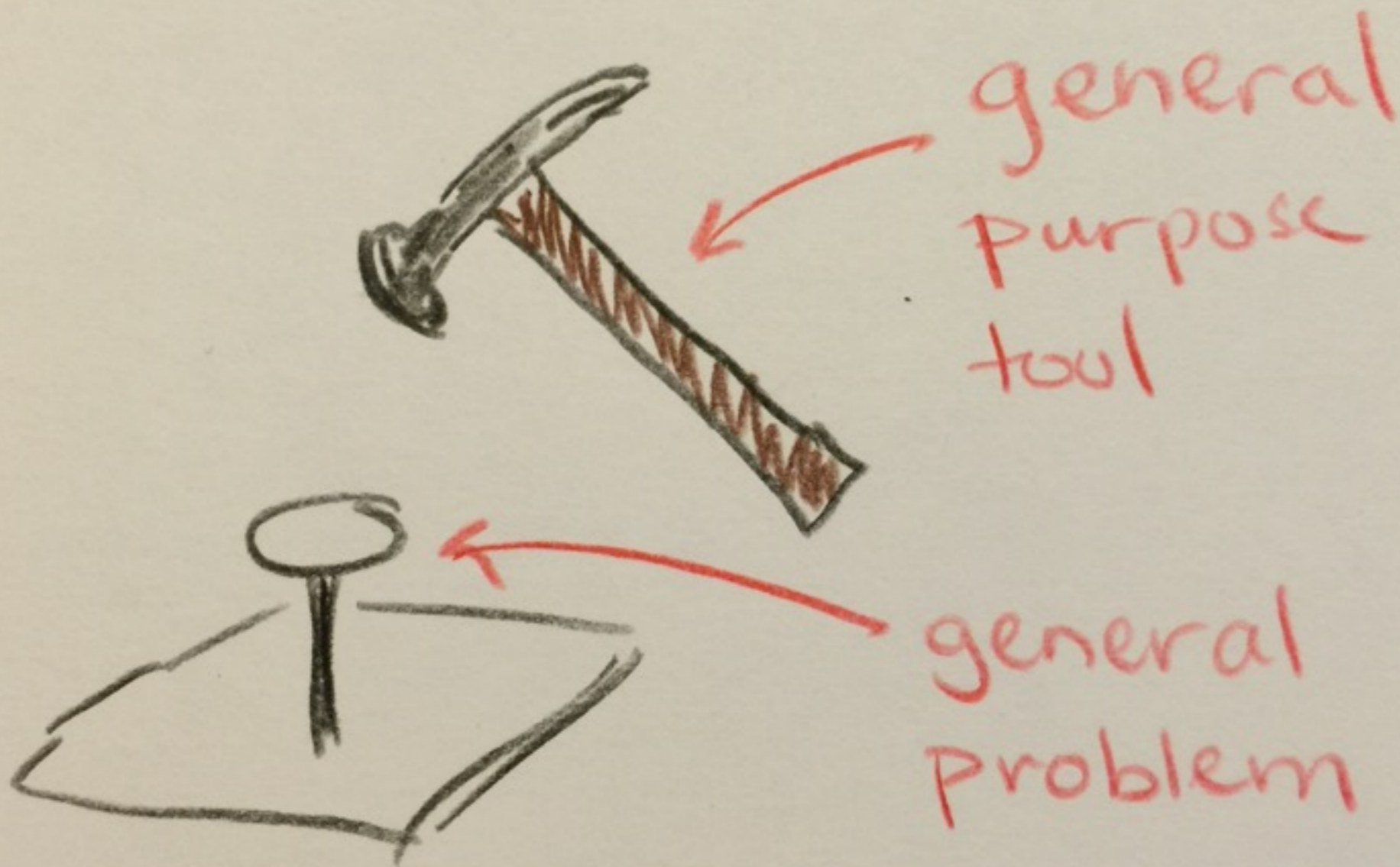


"Simple, fast, and frugal experiments inspire creativity and capability in a way that better analytics and planning can't."

— Michael Schrage

The Innovator's
Hypothesis

General Purpose Bias



Information

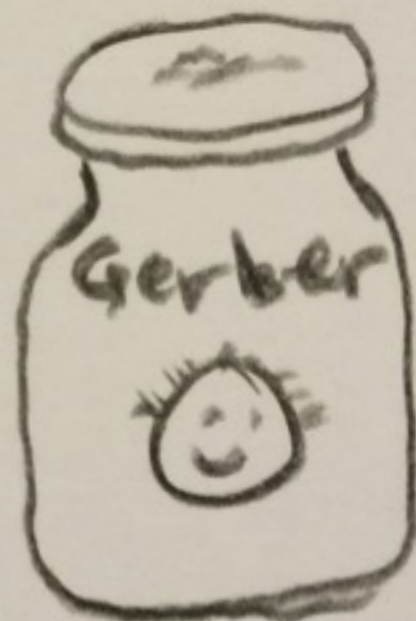
Abstraction



Vegetables



Salad



Purée

Function vs Task

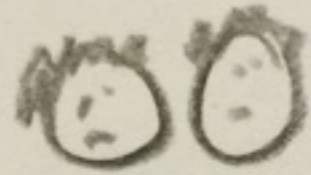


function -
deliver
running
water



task -
wash hands
dishes
food

Application Development



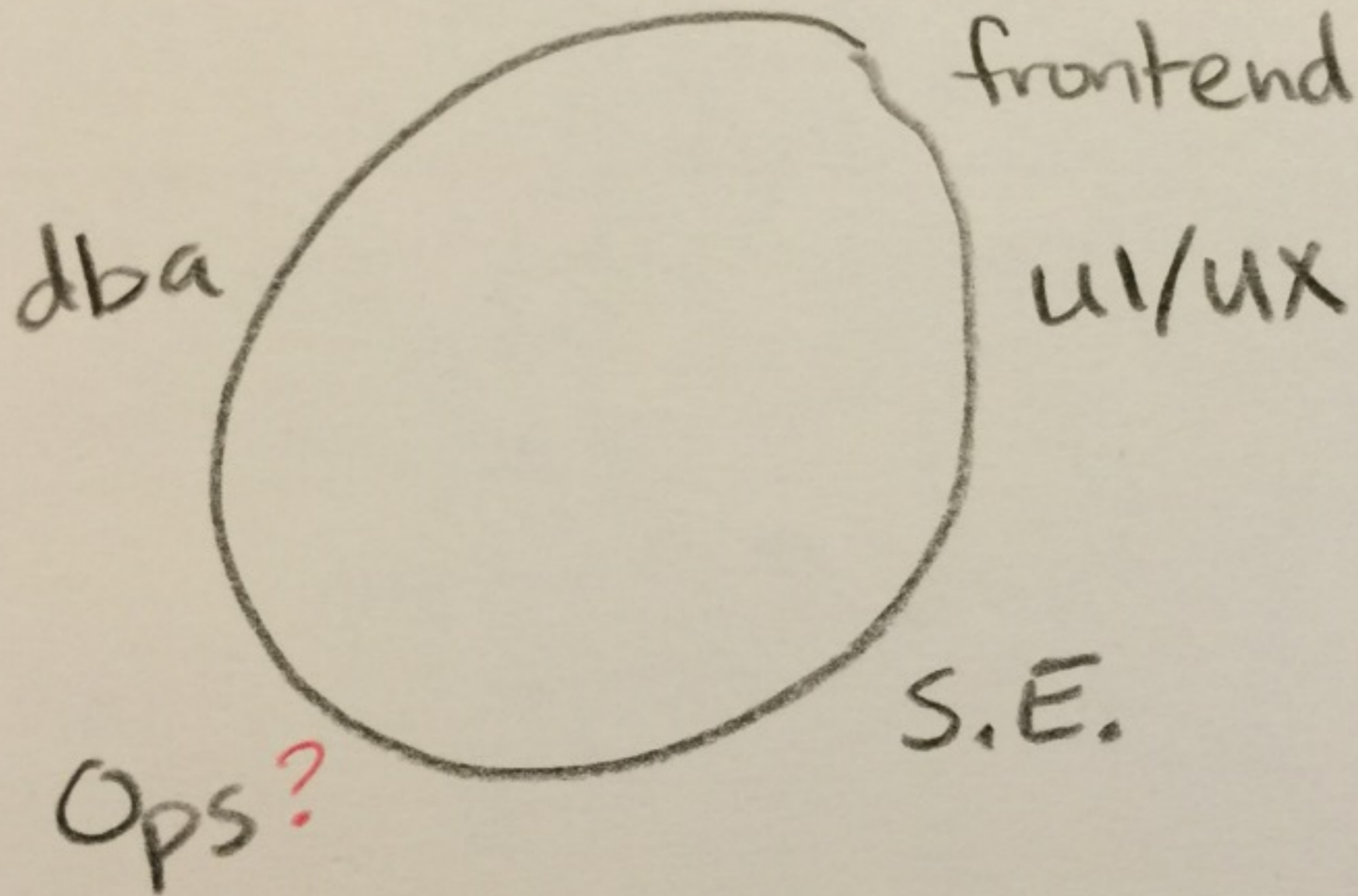
"business"

Software
Engineering

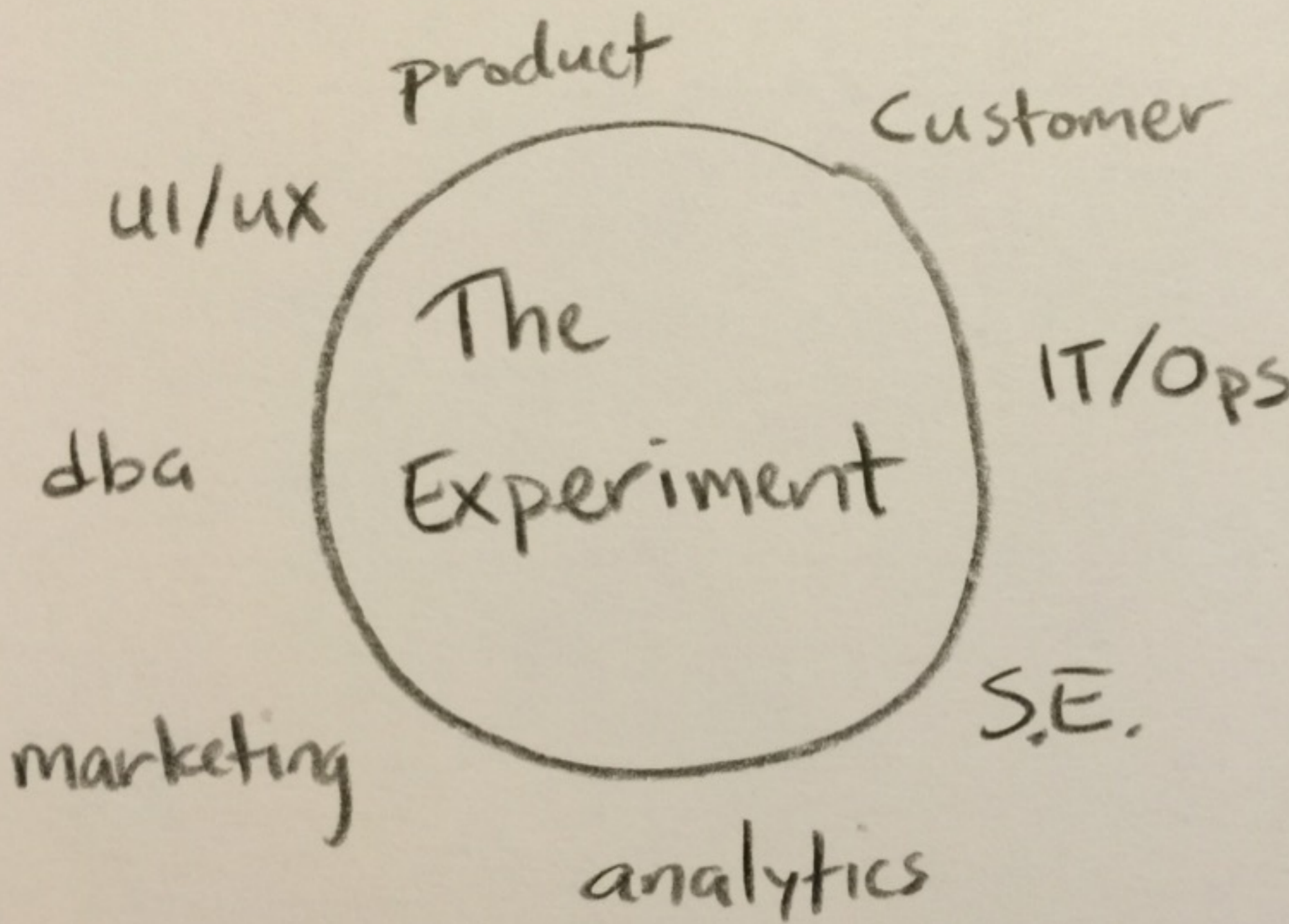
IT/Ops

Customers

The "full-stack" Team

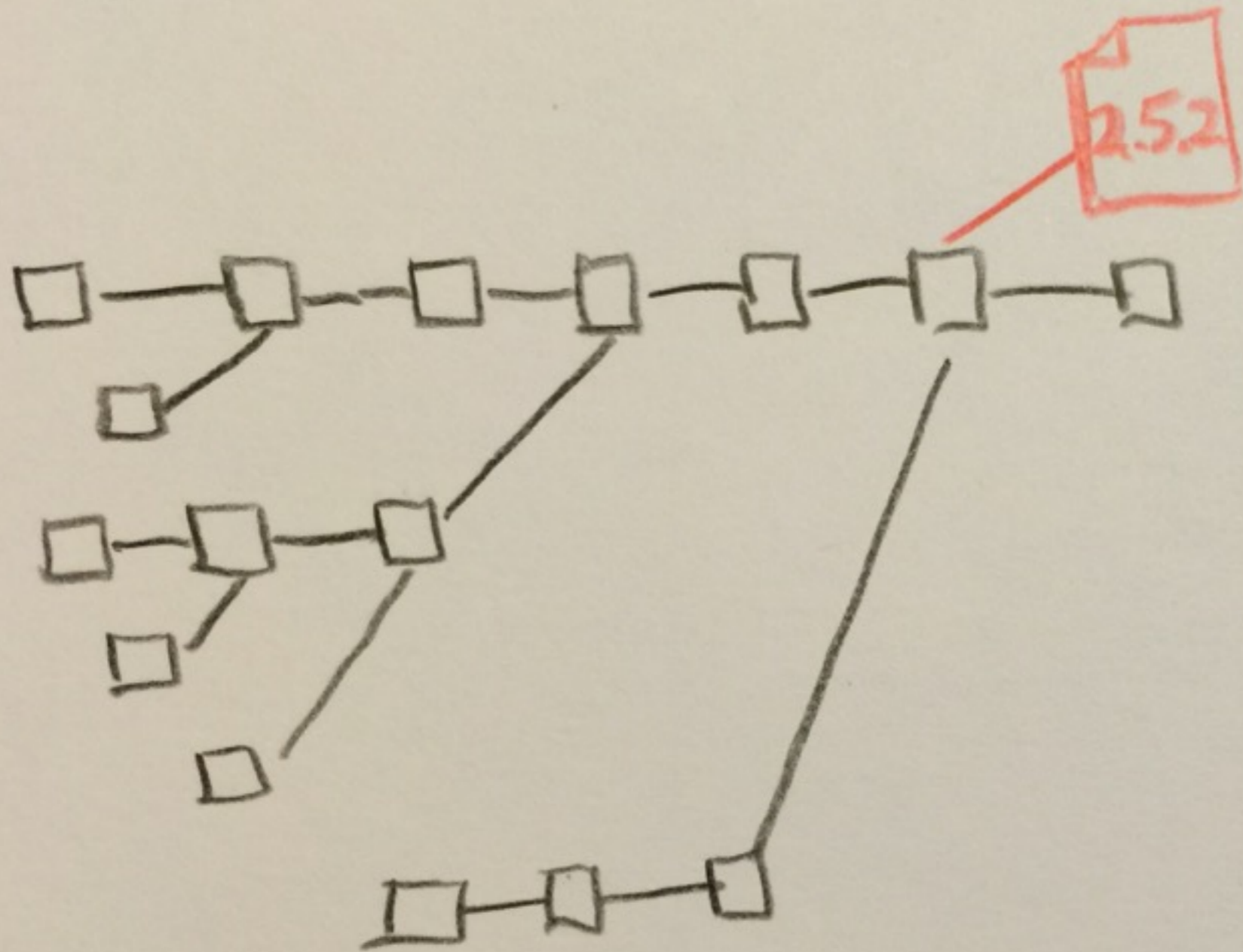


Where is
business,
analytics,
customer,
IT?



If there is a barrier, why does it exist?

Rubinius Release

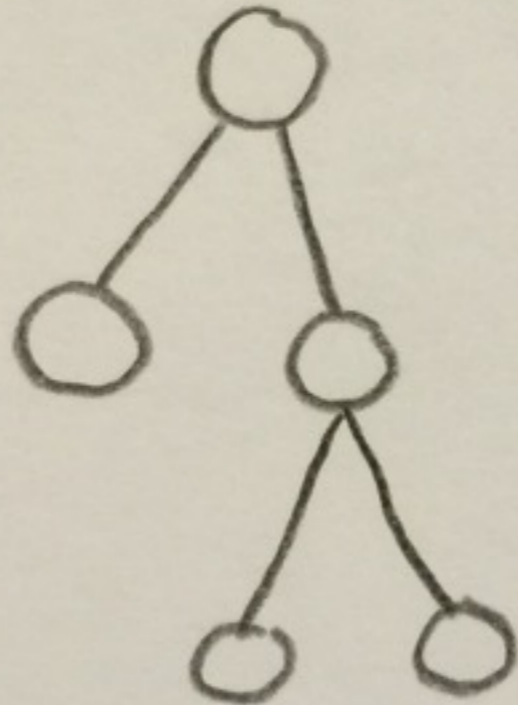


Release is
distinct from
deployment
artifact

Program Transformation

```
def m(a, b)  
  ~~~~~  
end
```

Code



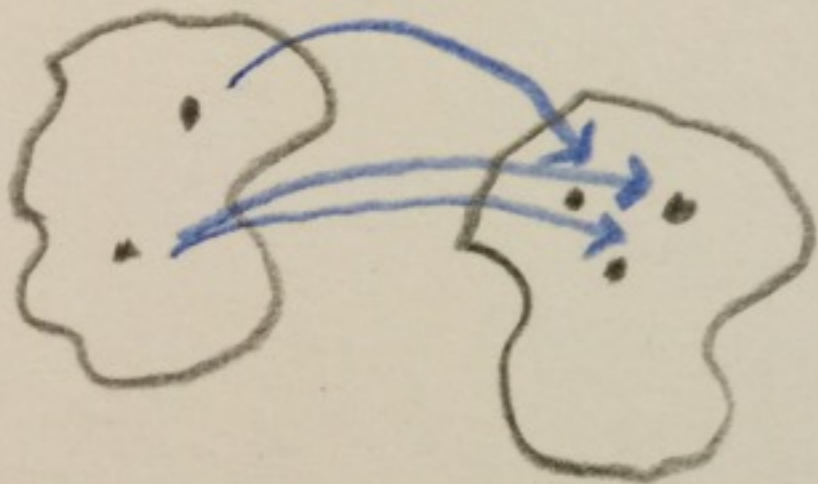
Tree

```
001 push-local 0  
002 push-self  
003 push-literal "x"  
004 send :foo, 2  
005 ret
```

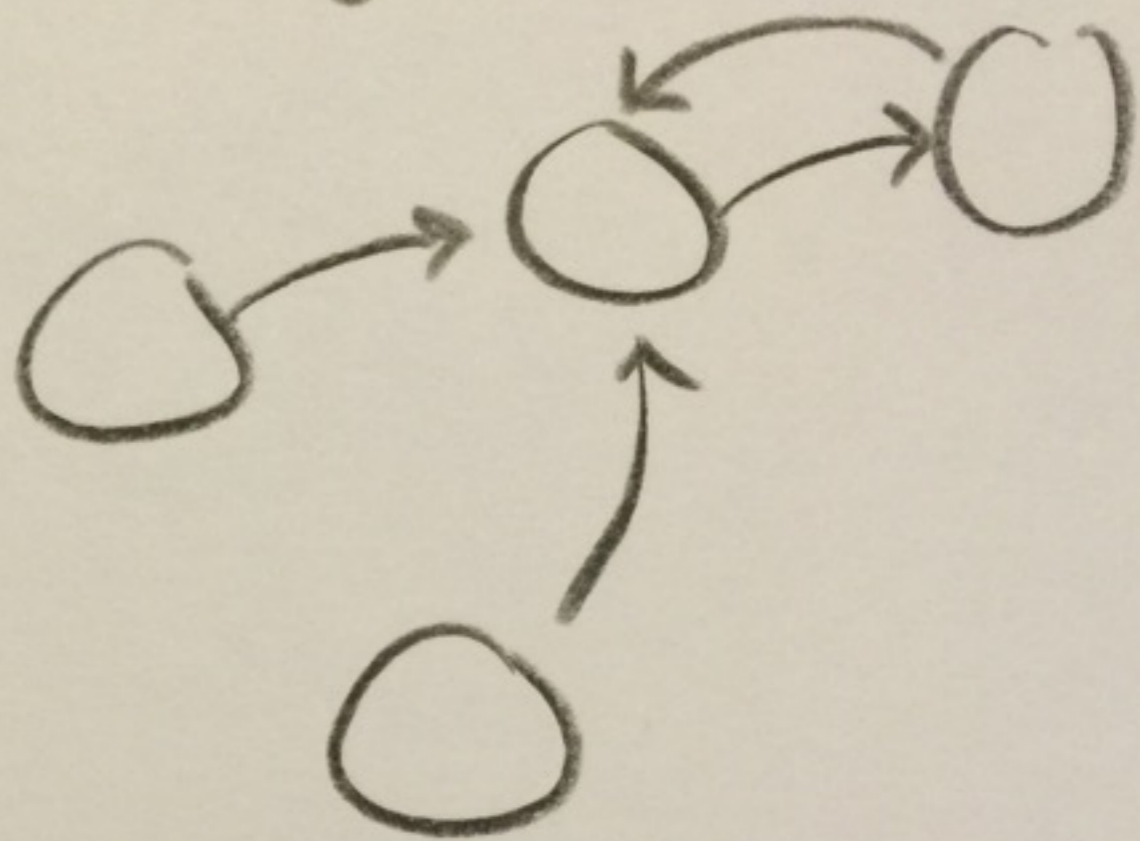
Instructions

Functions vs Objects

$$y = f(x)$$



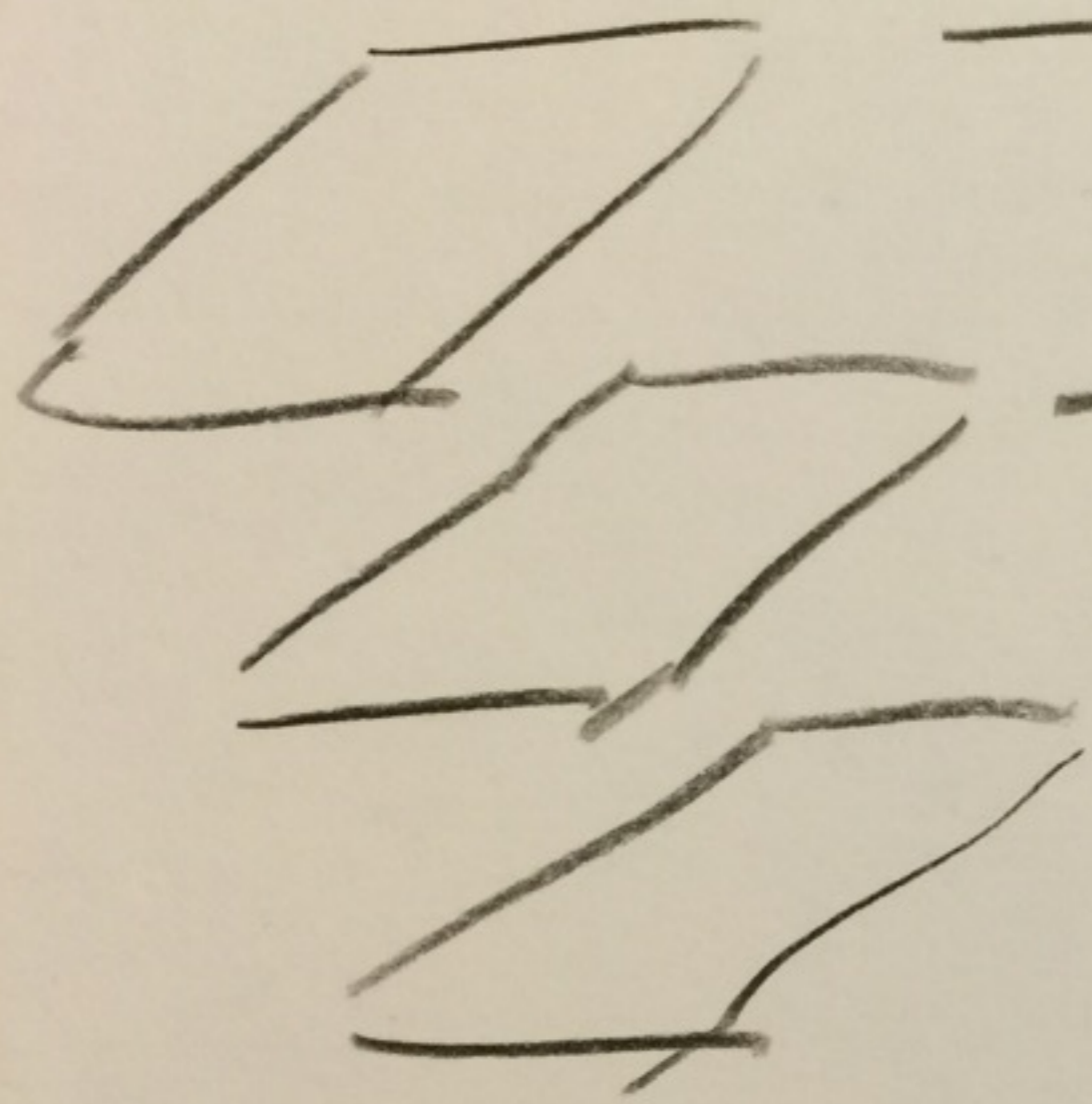
functions
are for
data



objects are
for interactions

Instruction

Segmentation



— Semantics

What it is doing

— Correctness

Is it doing it correctly?

— Analytics

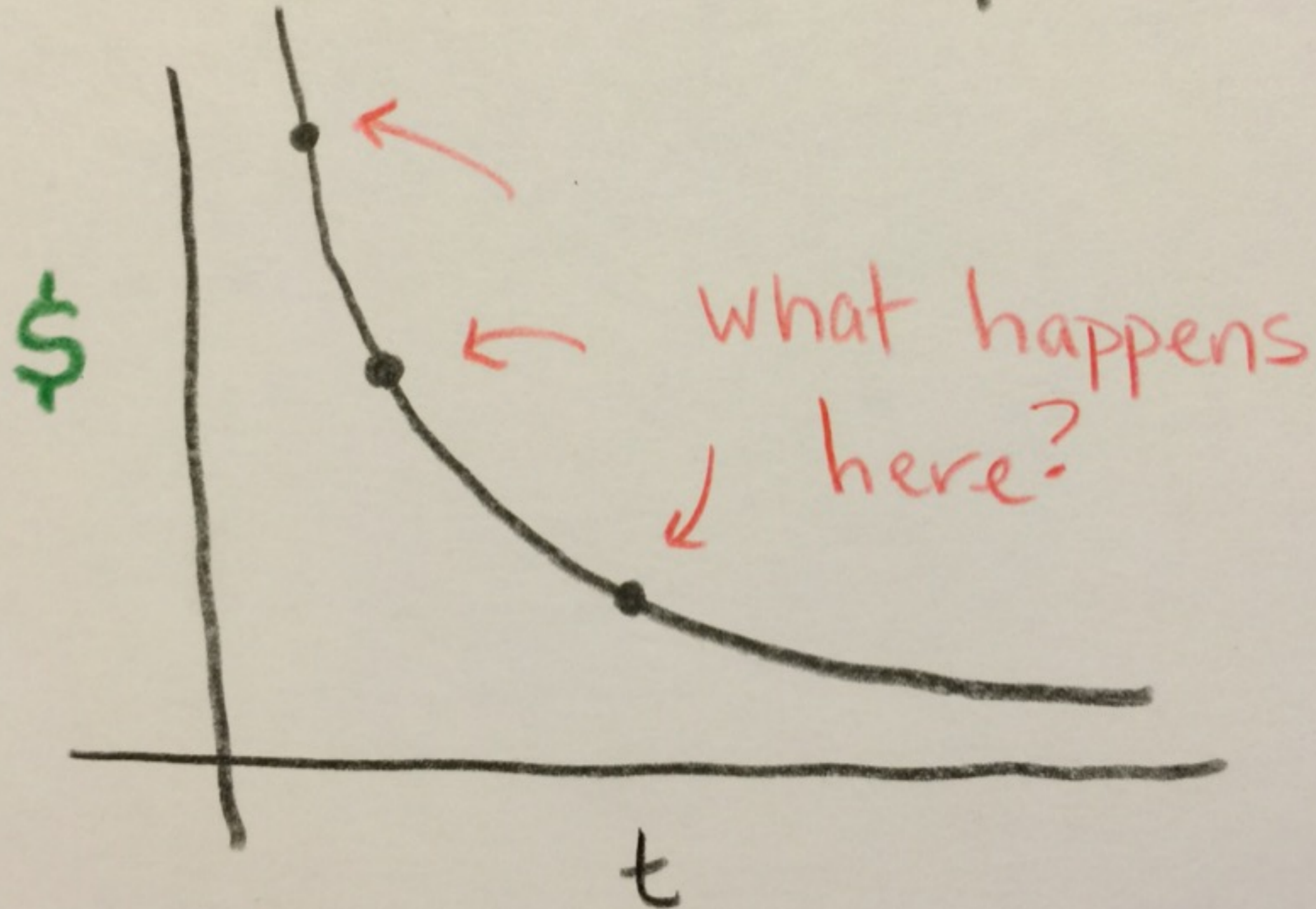
How is it doing?

Atom

```
an ruby(-m) {  
  under  
    
    
}
```

```
$ > ruby -v  
rubinius 2.5.2
```

Cost Gravity



Questions?

