Software Economics

Business aware software development

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DISCOVER	DELIVER
pairing/mob programming	remote work
ideas	features
divergent	convergent
iterate questions	iterate answers
options	actions
spike/prototype/rewrite	refactor/maintain
manual	automated
explore	bottlenecks
unknowns unknowns	already done in production
less done, less throw	more done, more value
bugs not important	bugs? a drama

Business needs

Value, Cost, Risk & Debt

Iterative & incremental

Change & evolution

Design

Refactoring a Good Thing™

Waterfall is a Bad Thing™

Business people don’t understand us™

Business mindset

Economies of scale

Time to market

Return of Investment

Debt, loans, interest

Cash flow

Liquidity

Cost accounting

Net present value

Value

Cost of opportunity

Cost of acquisition

Marginal cost

Risk

Time Value of Money

Balance sheet

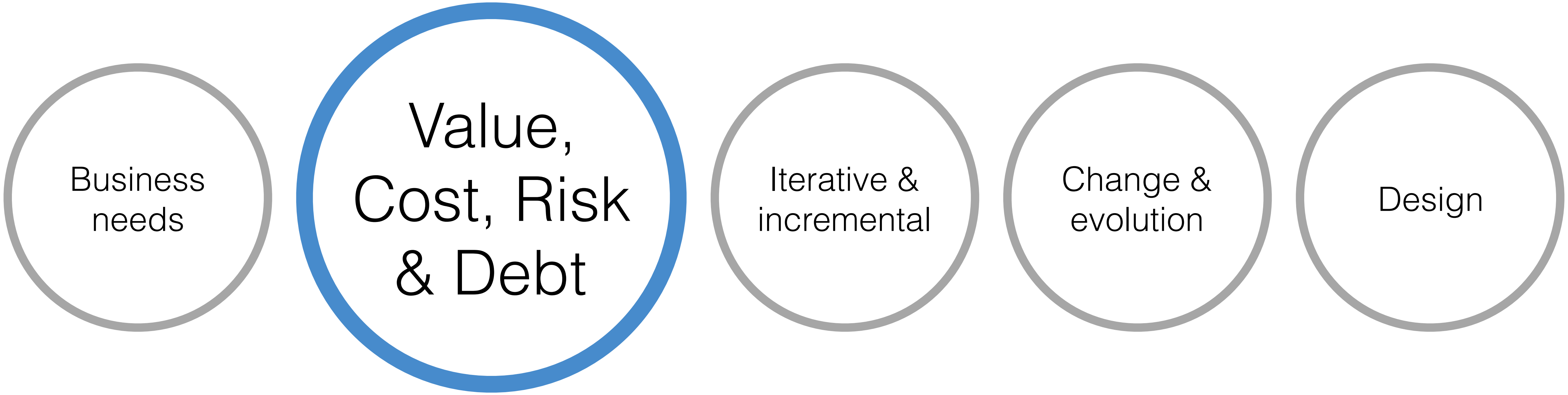
Throughput accounting

Real options

Cost

We are here to satisfy business needs

Early delivery of **value**,	ROI / Time to market Risk reduction Hypothesis validation Stakeholders shared vision
with the lowest possible **cost**,	
keeping options open,	So that **risk** is reduced To face uncertainty with better odds
with **debt** under control	To avoid being unable to pay it off in the future



Business needs

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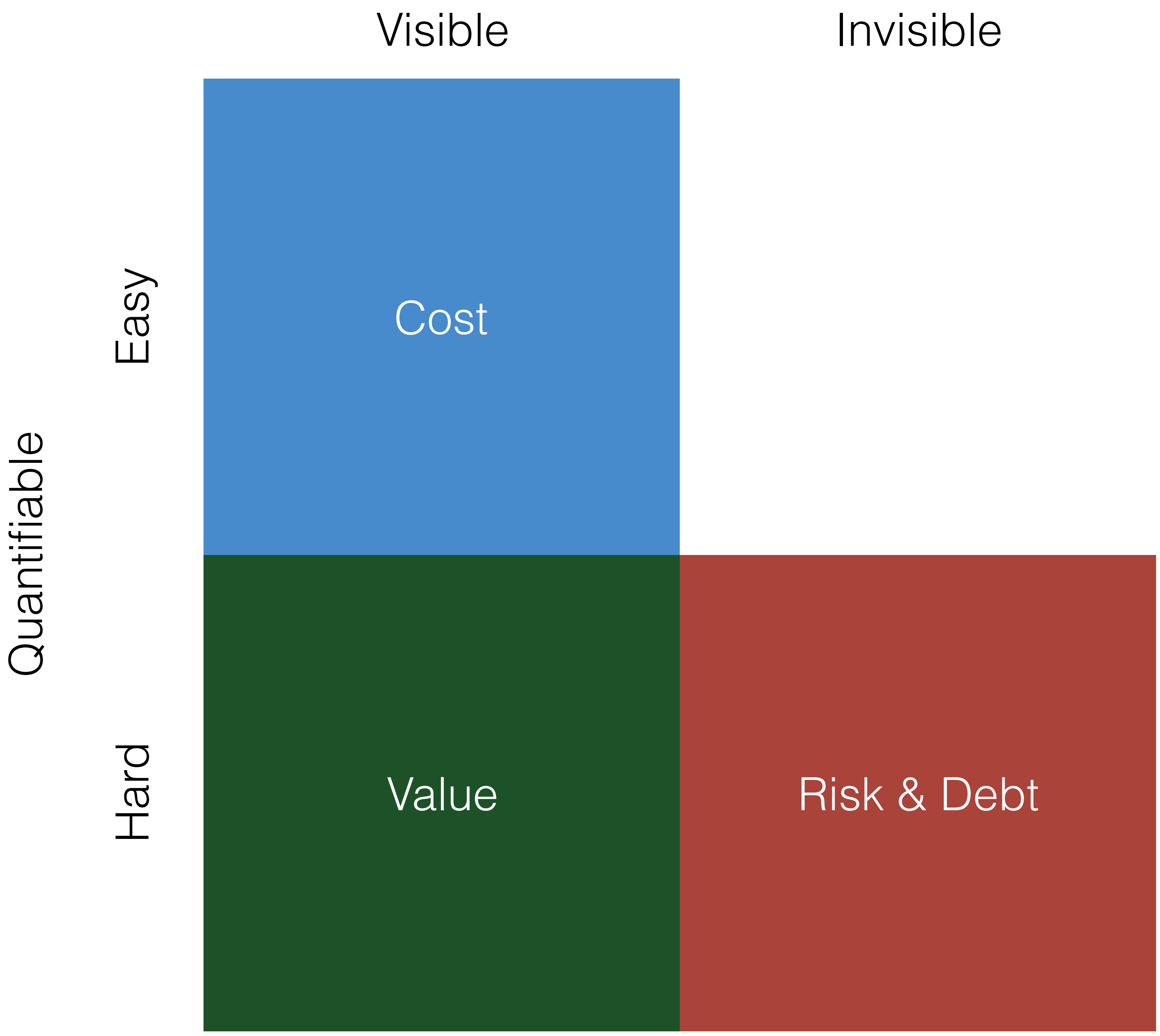
Iterative & incremental

Change & evolution

Design



Quantifiable		Visible	Invisible
	Easy	Cost	
	Hard	Value	Risk & Debt

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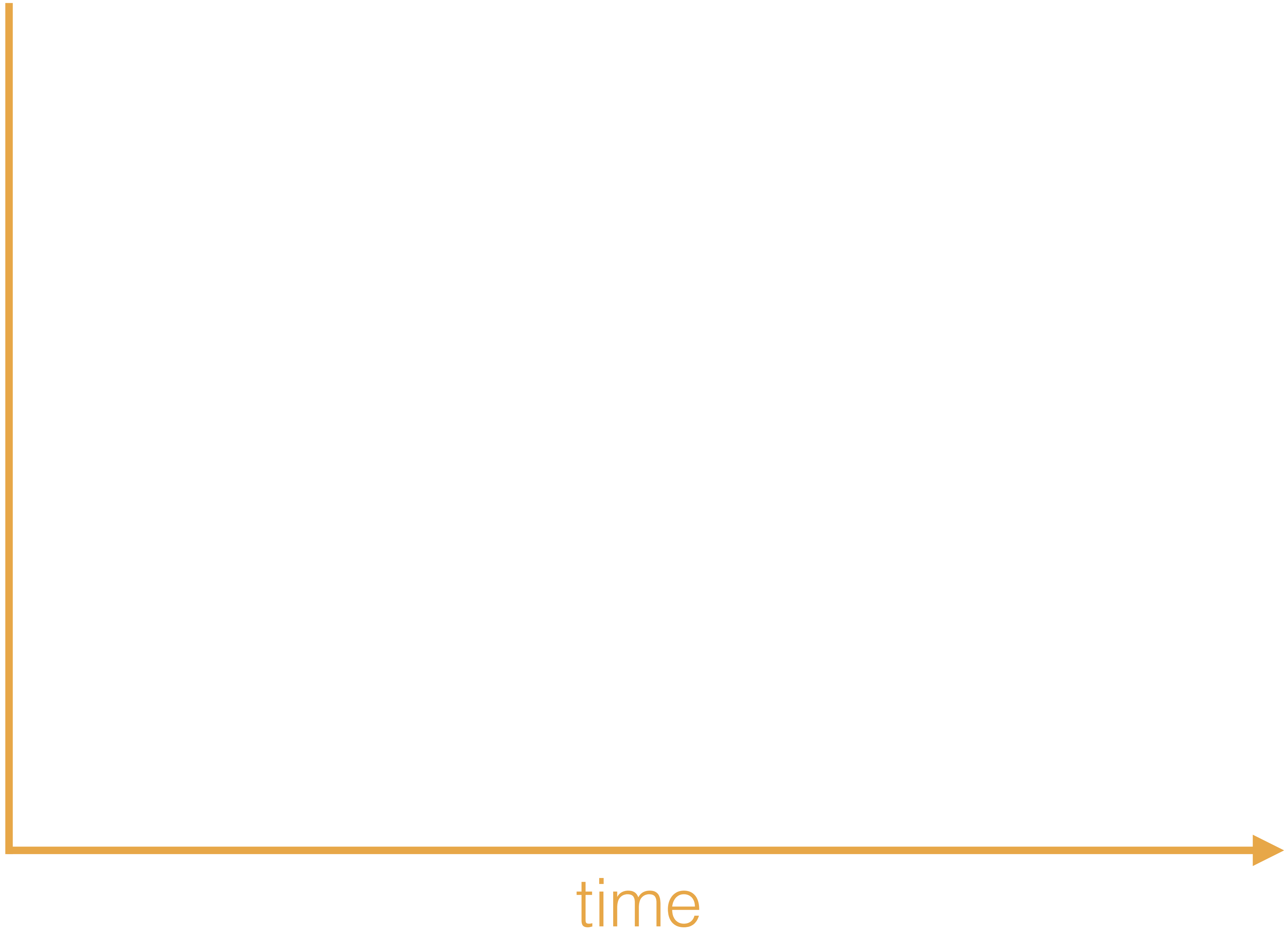
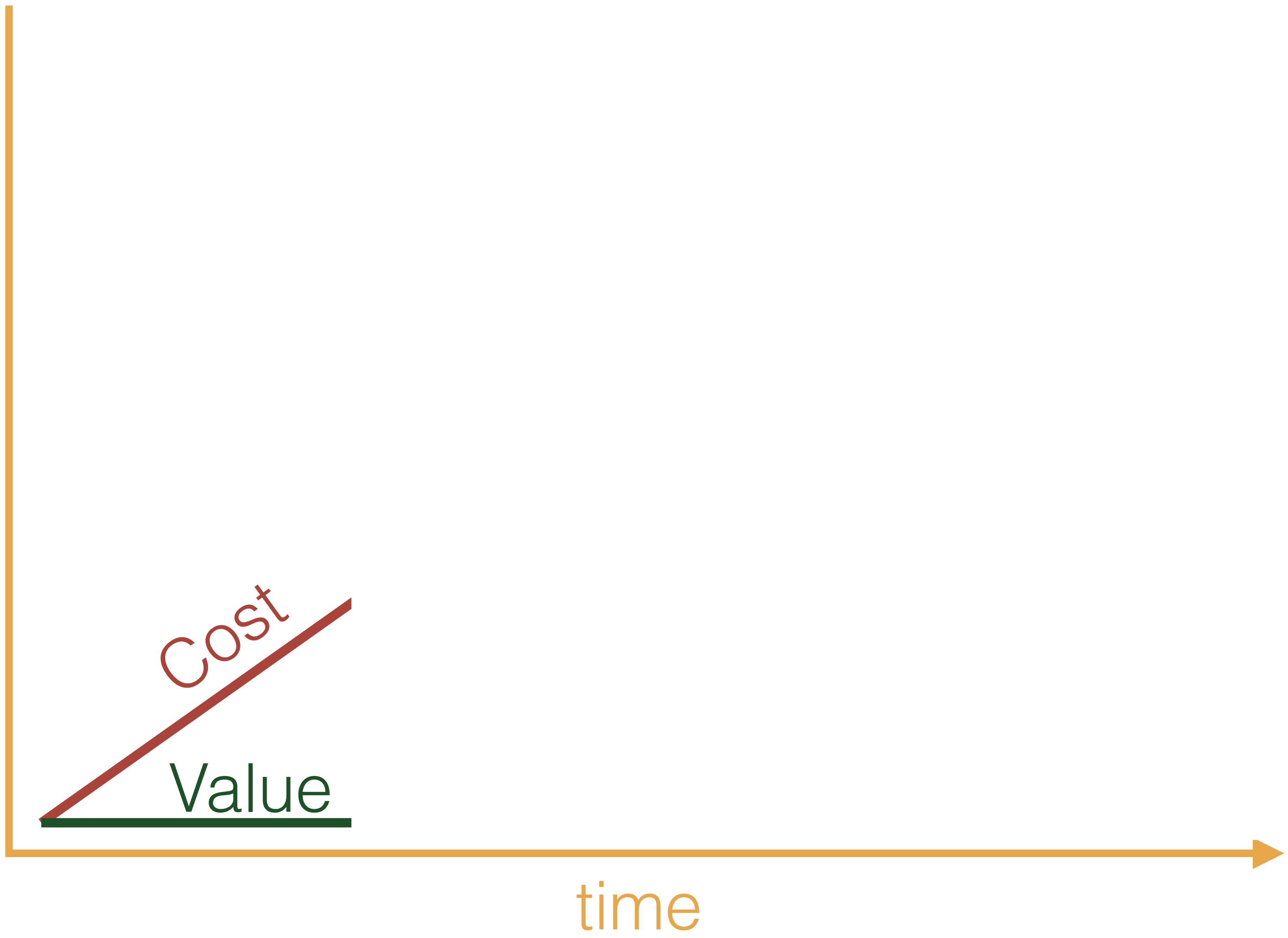
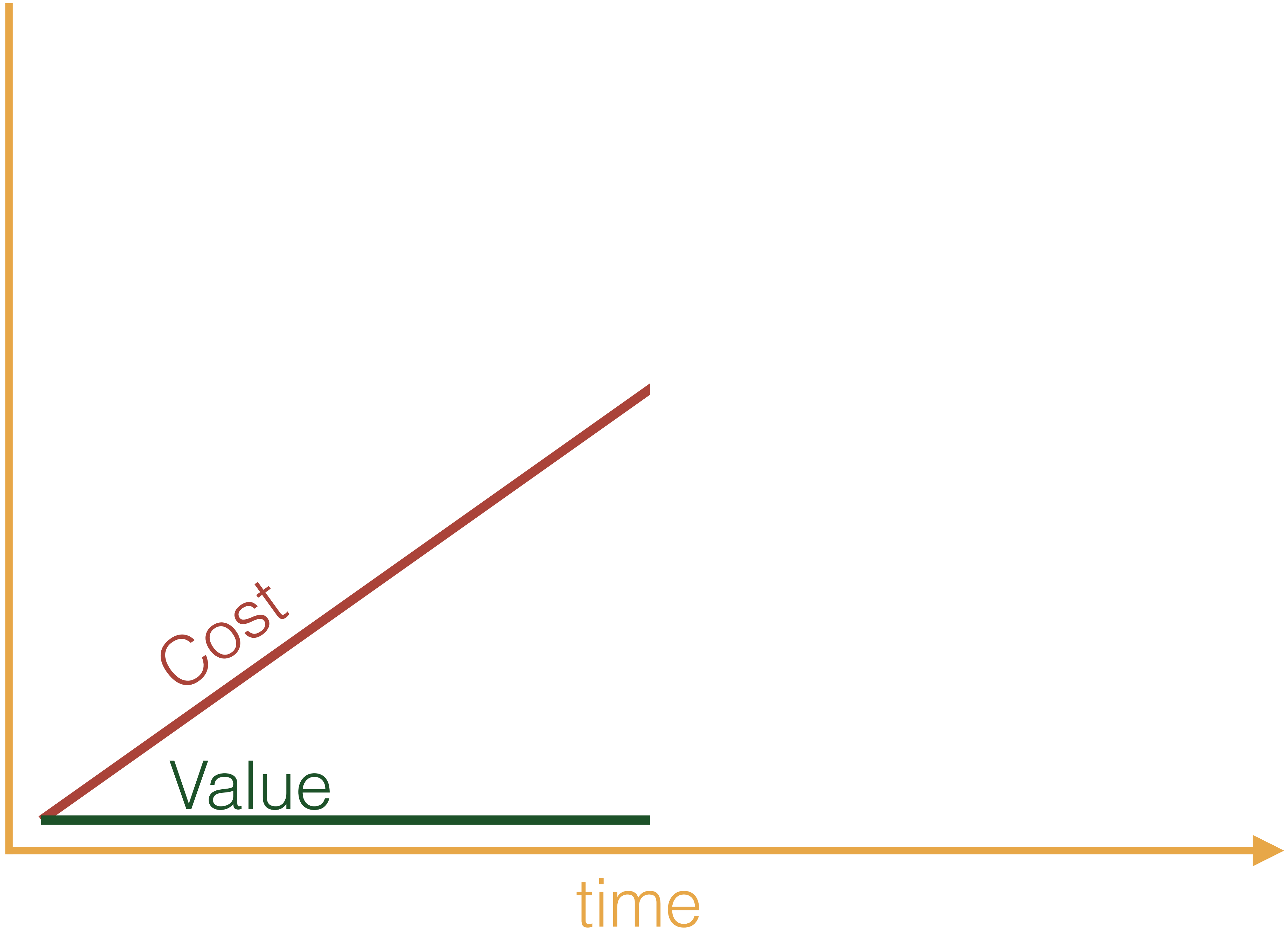
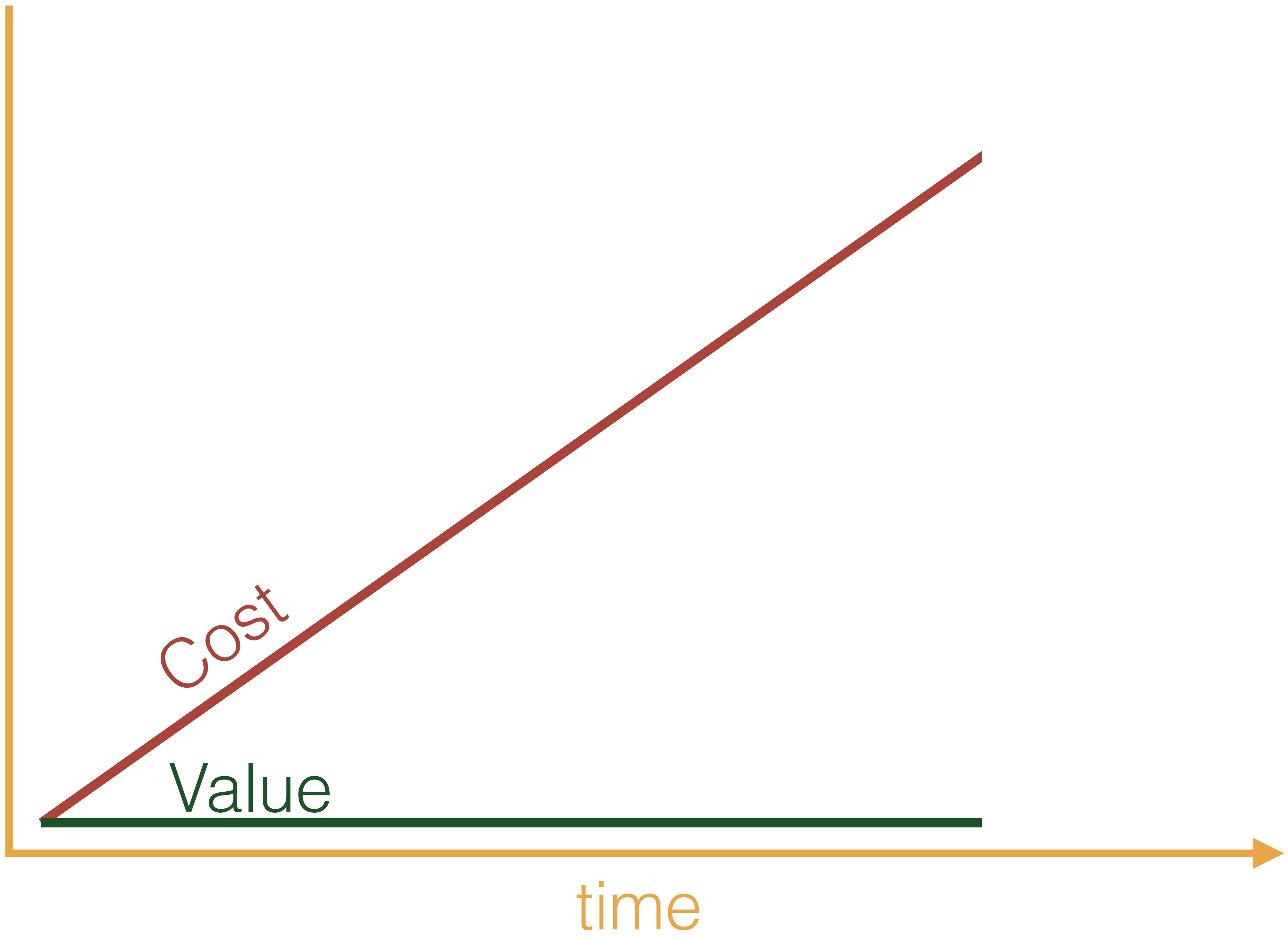
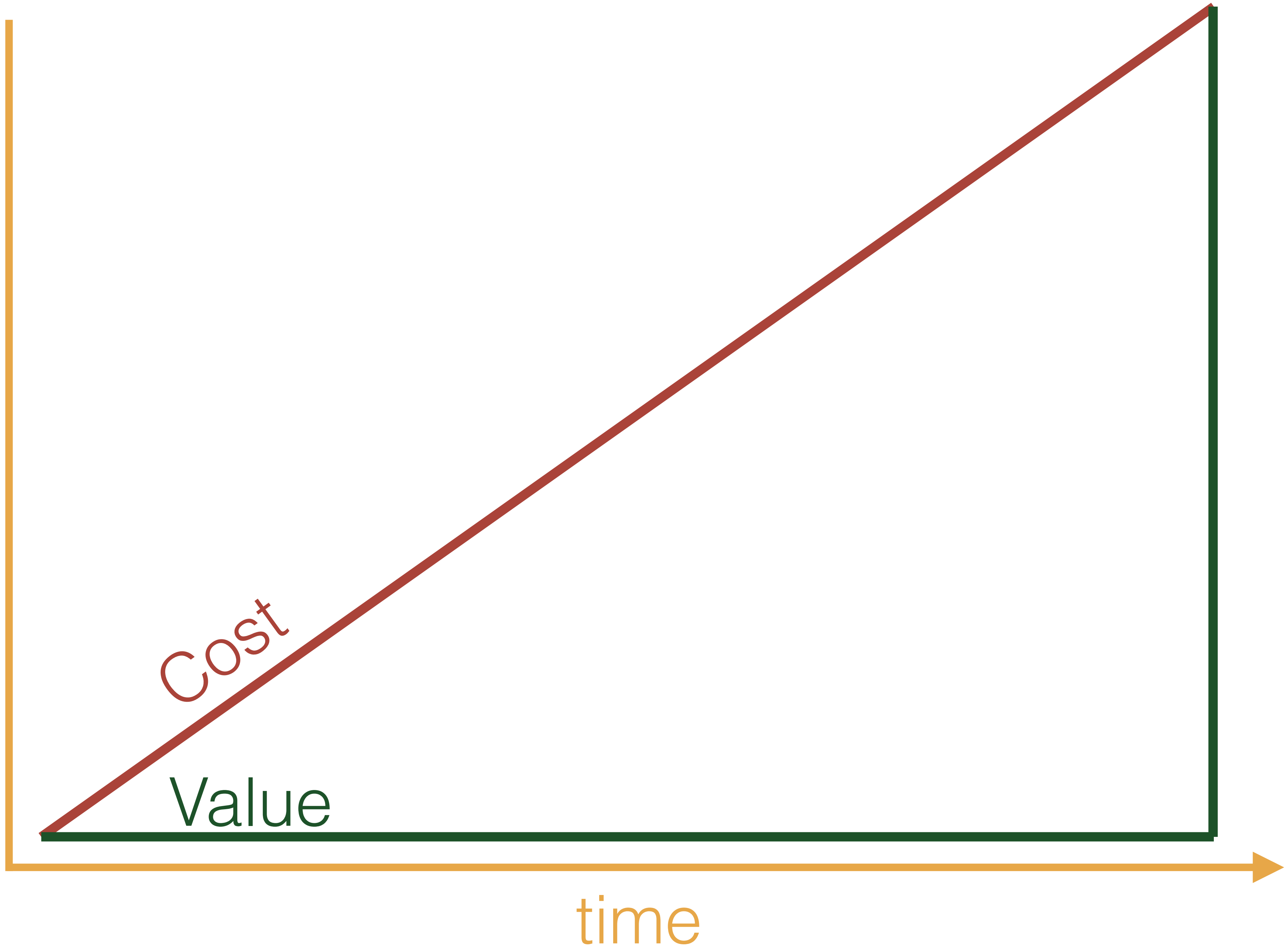
Waterfall

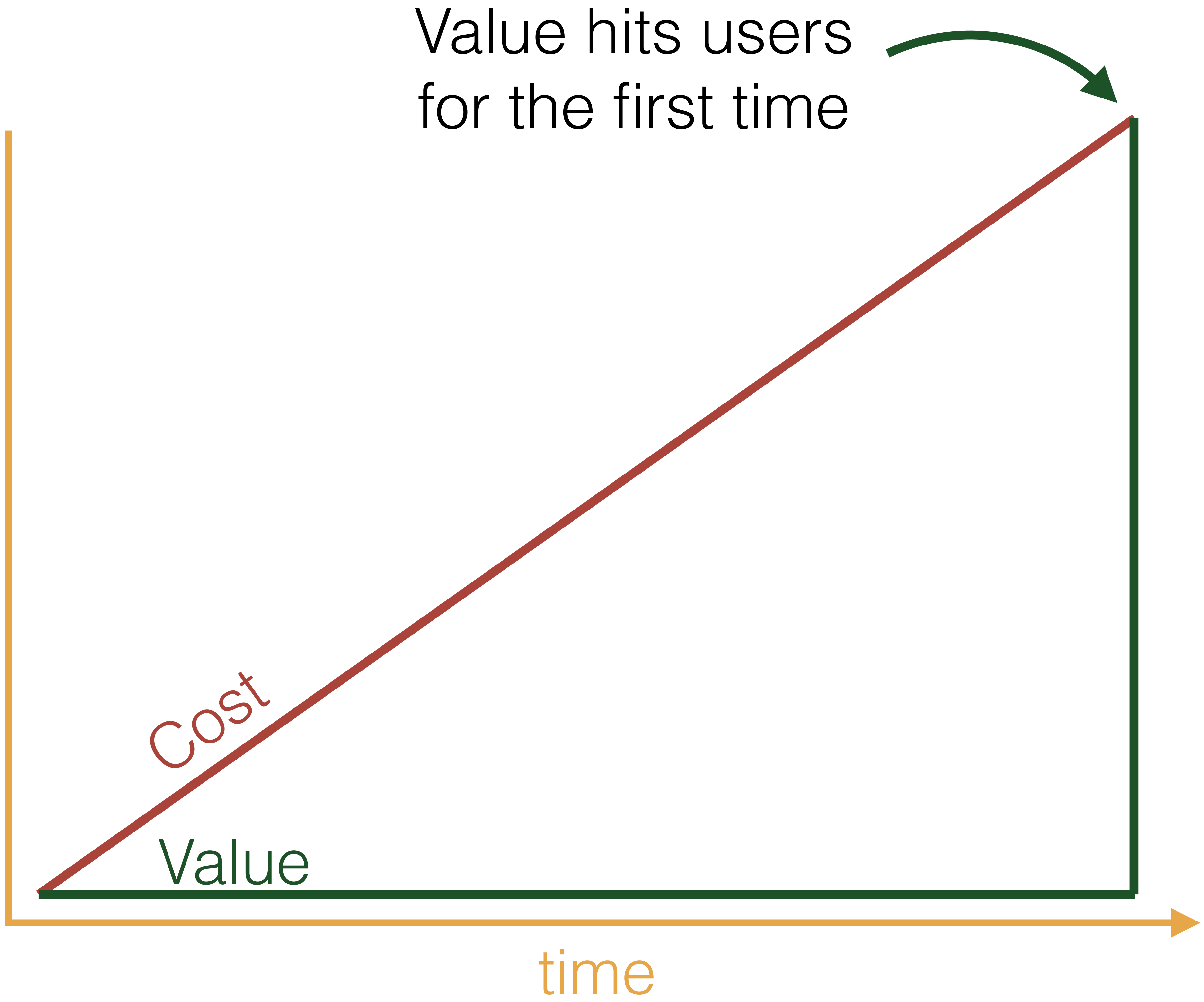

time


Cost
Value
time


Cost
Value
time

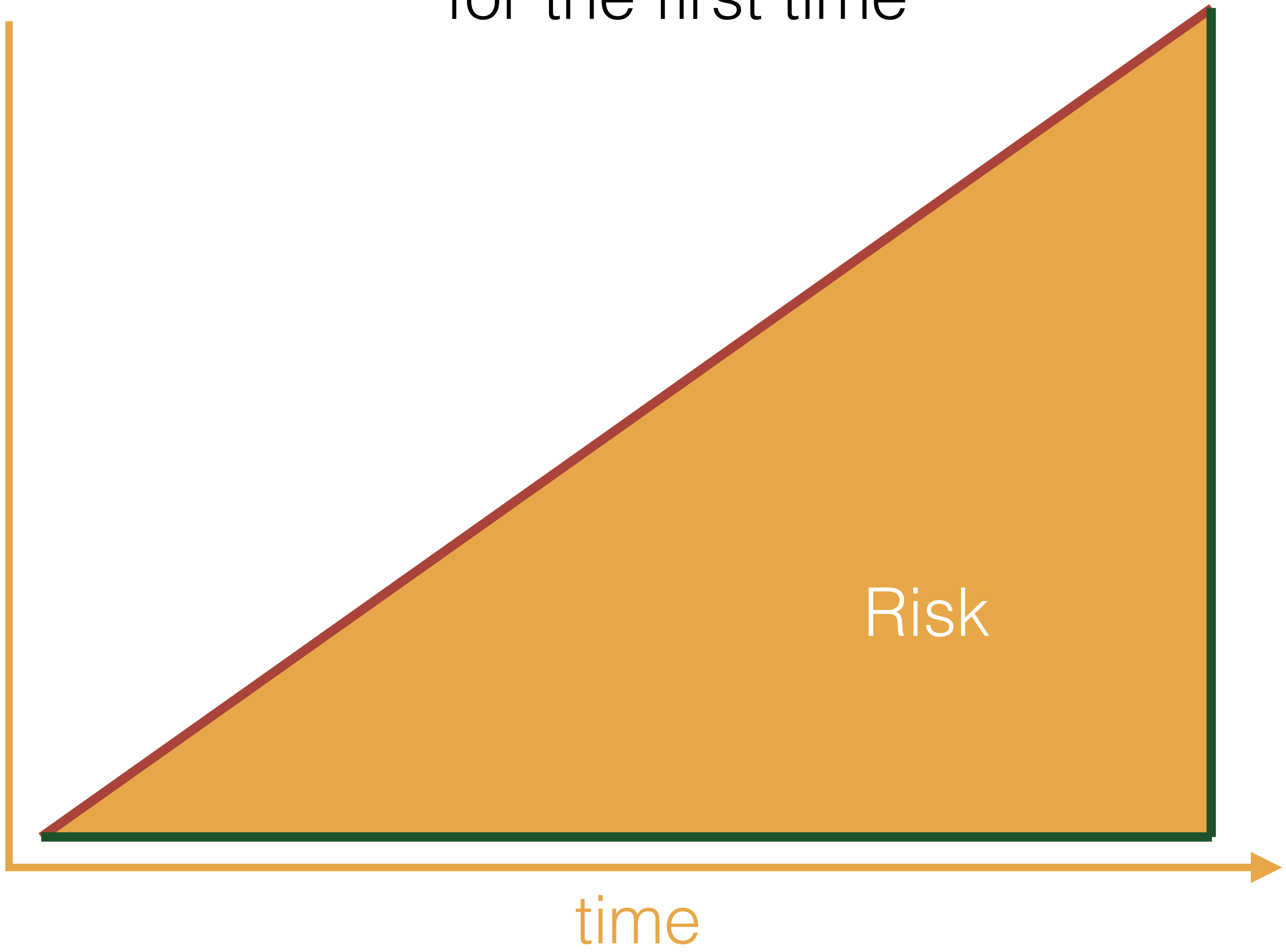

Cost
Value
time


Cost
Value
time



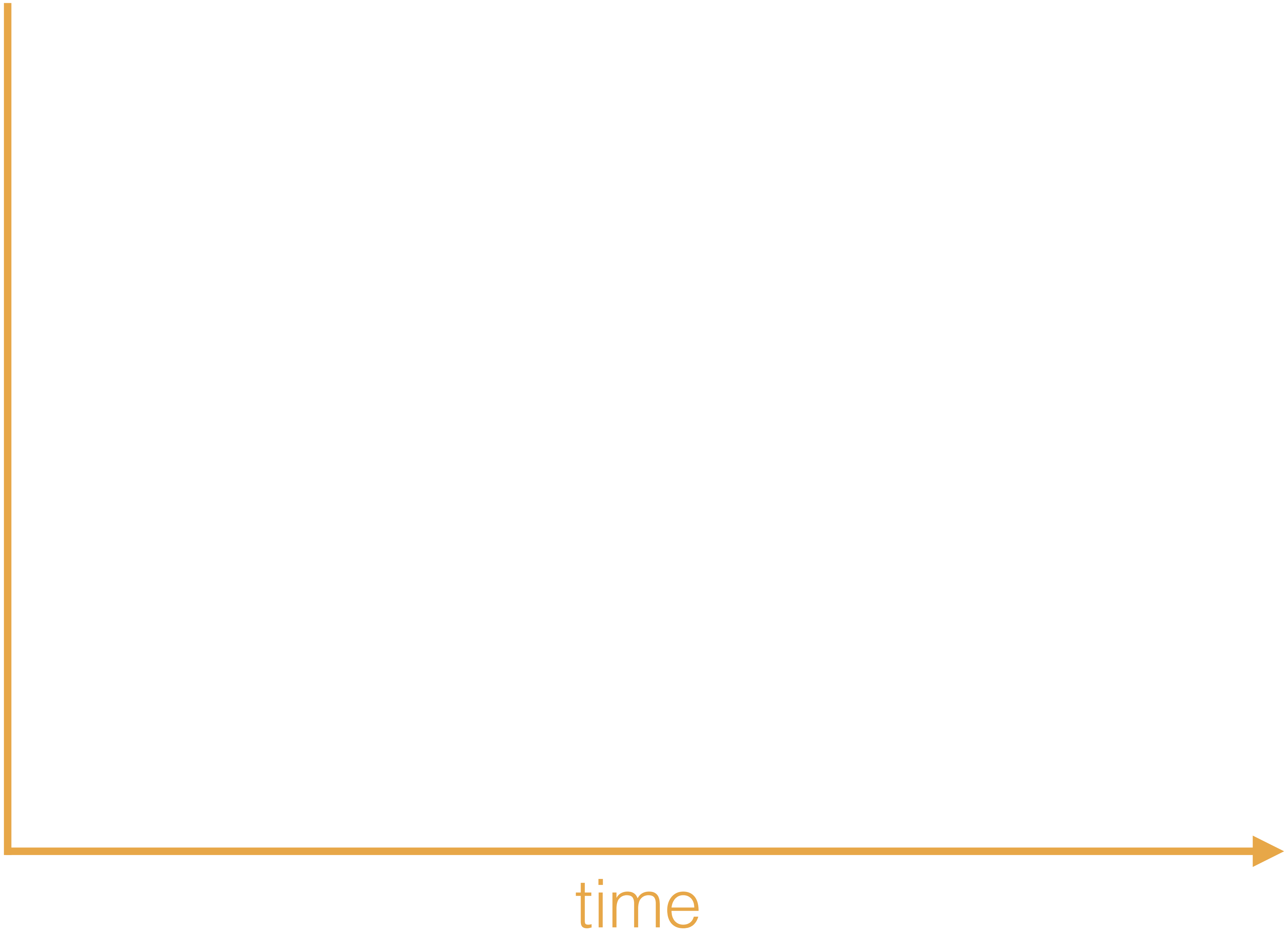
Value hits users for the first time

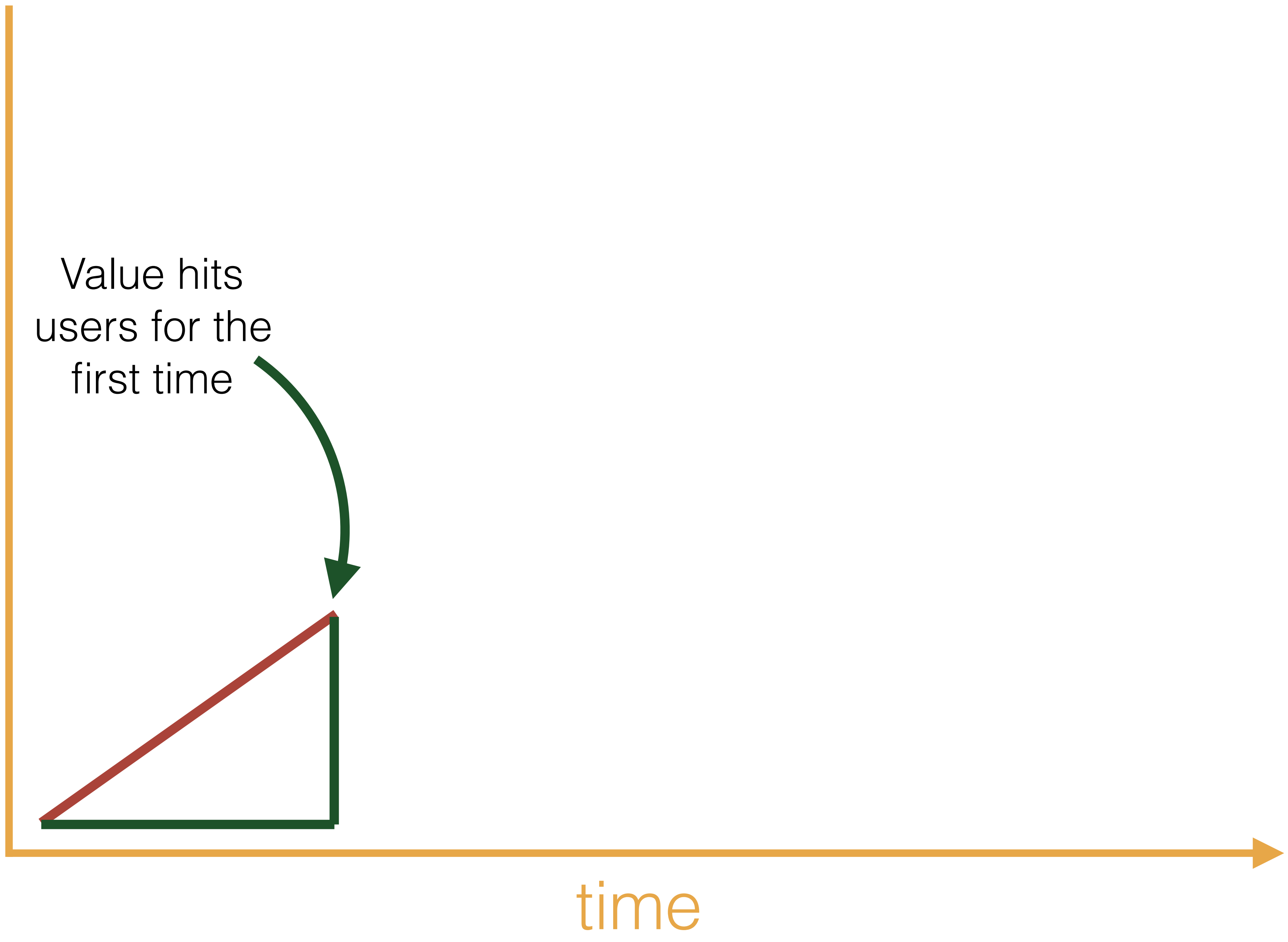
Value hits users
for the first time



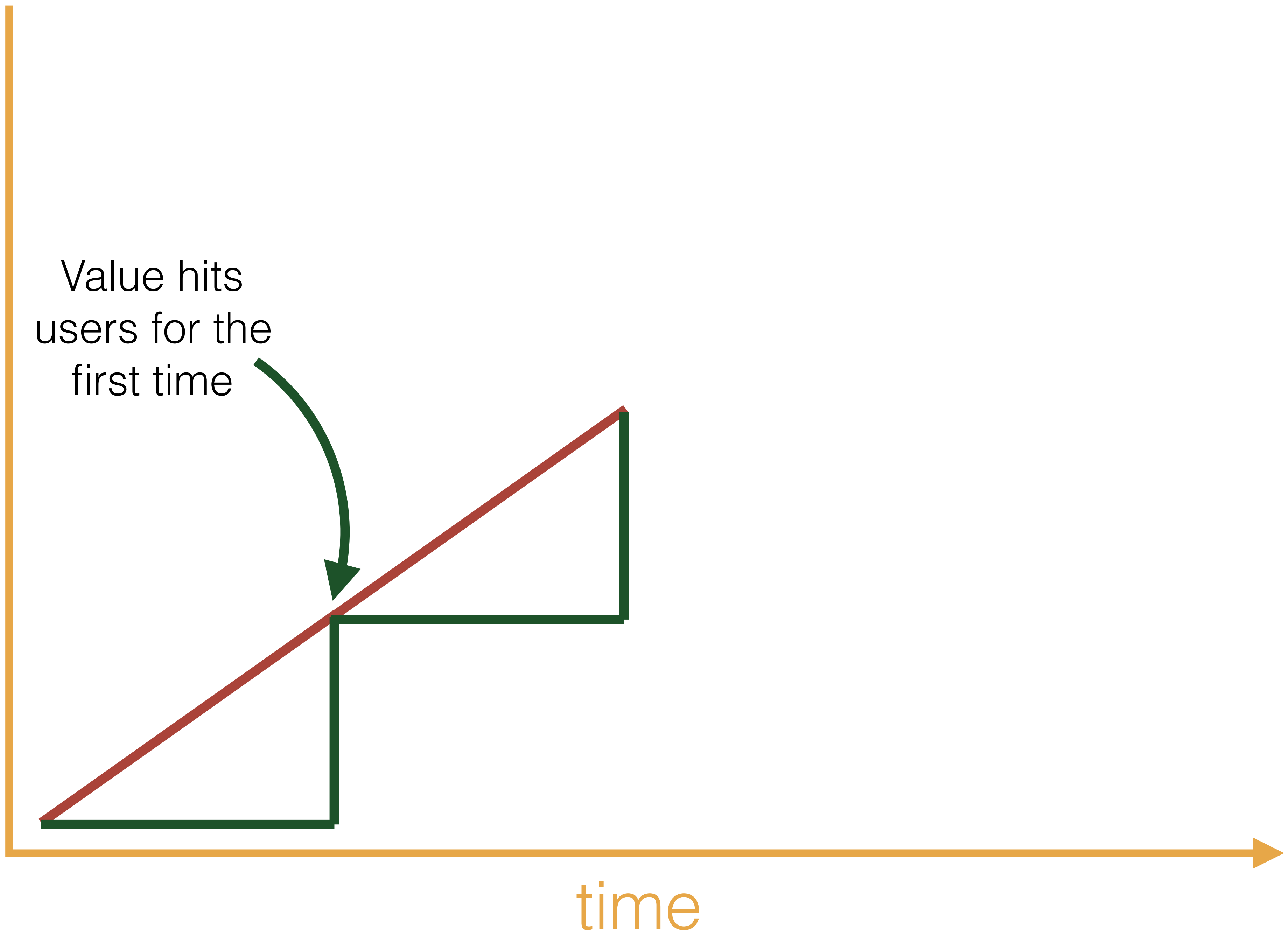
Iterative & incremental

Value, Risk and Debt over cost


time



Value hits
users for the
first time
time


Value hits
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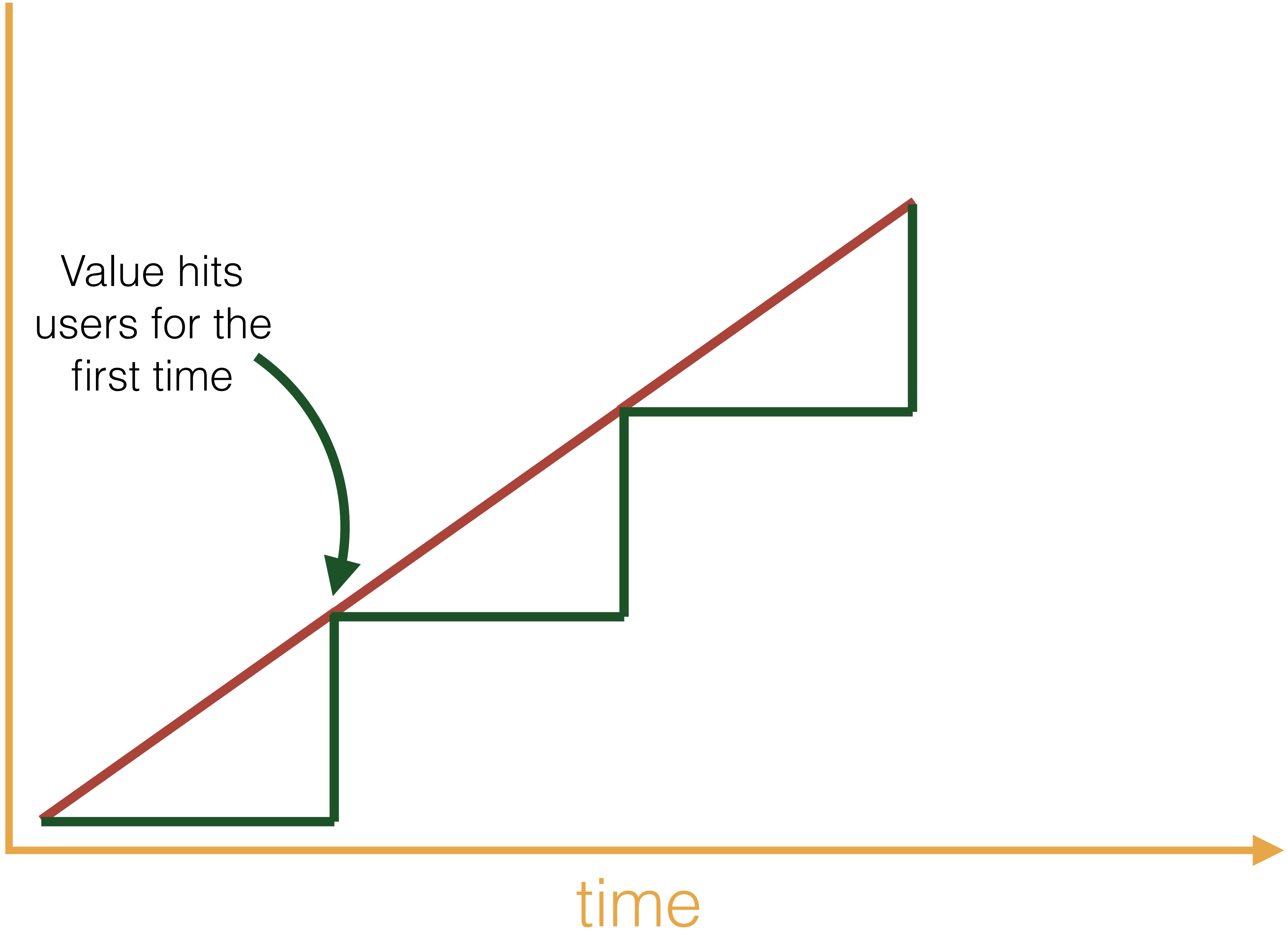
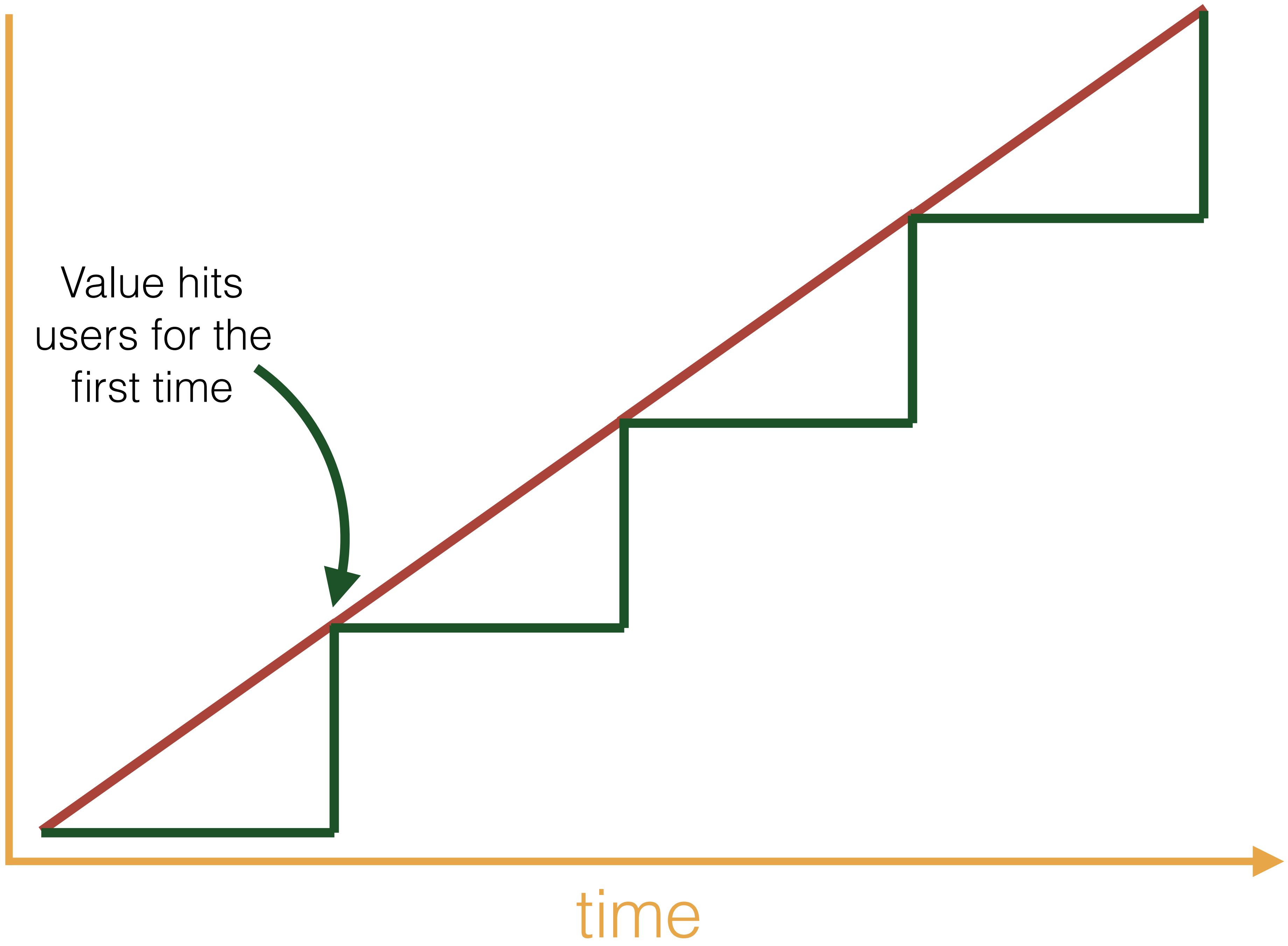
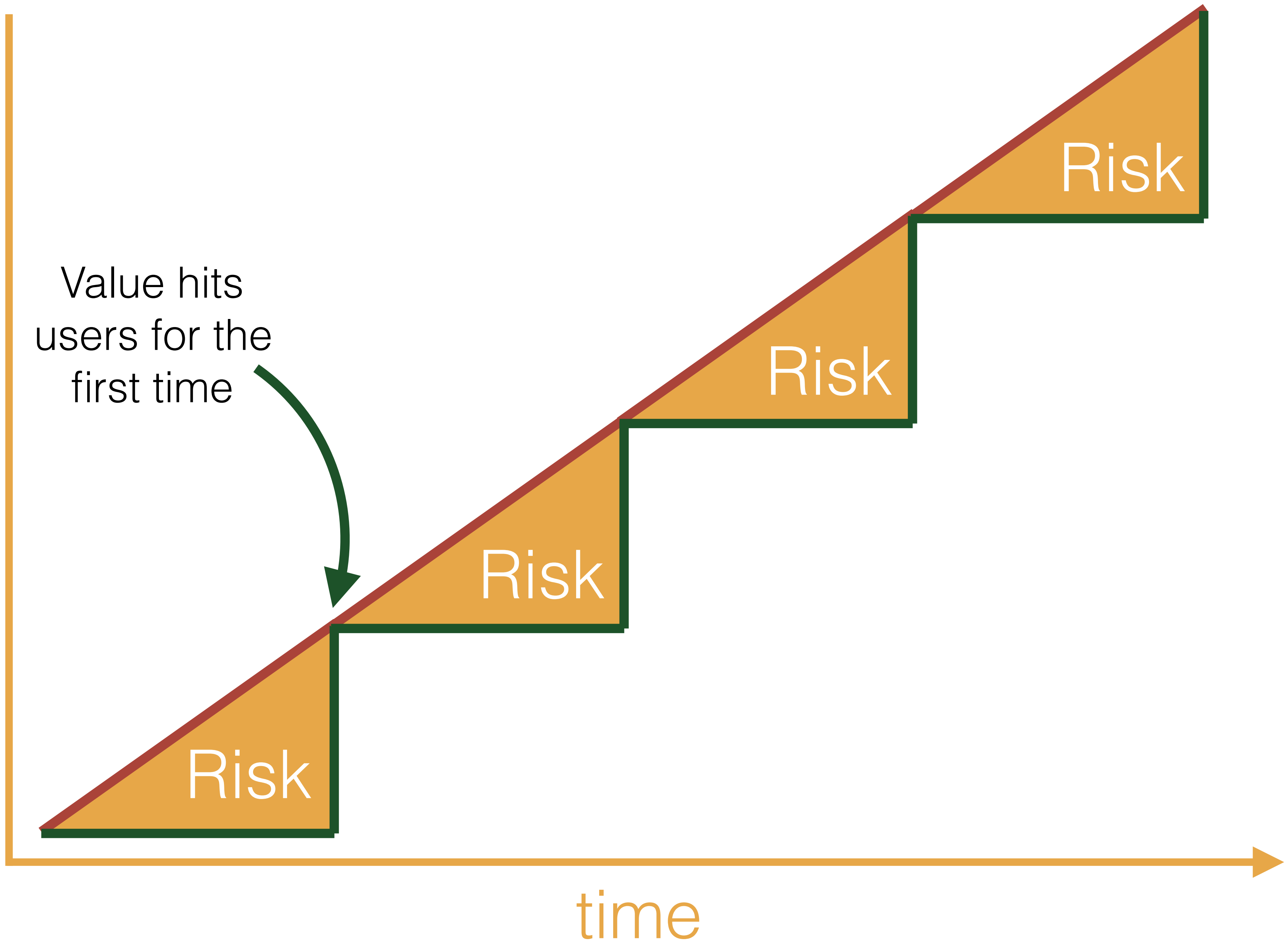
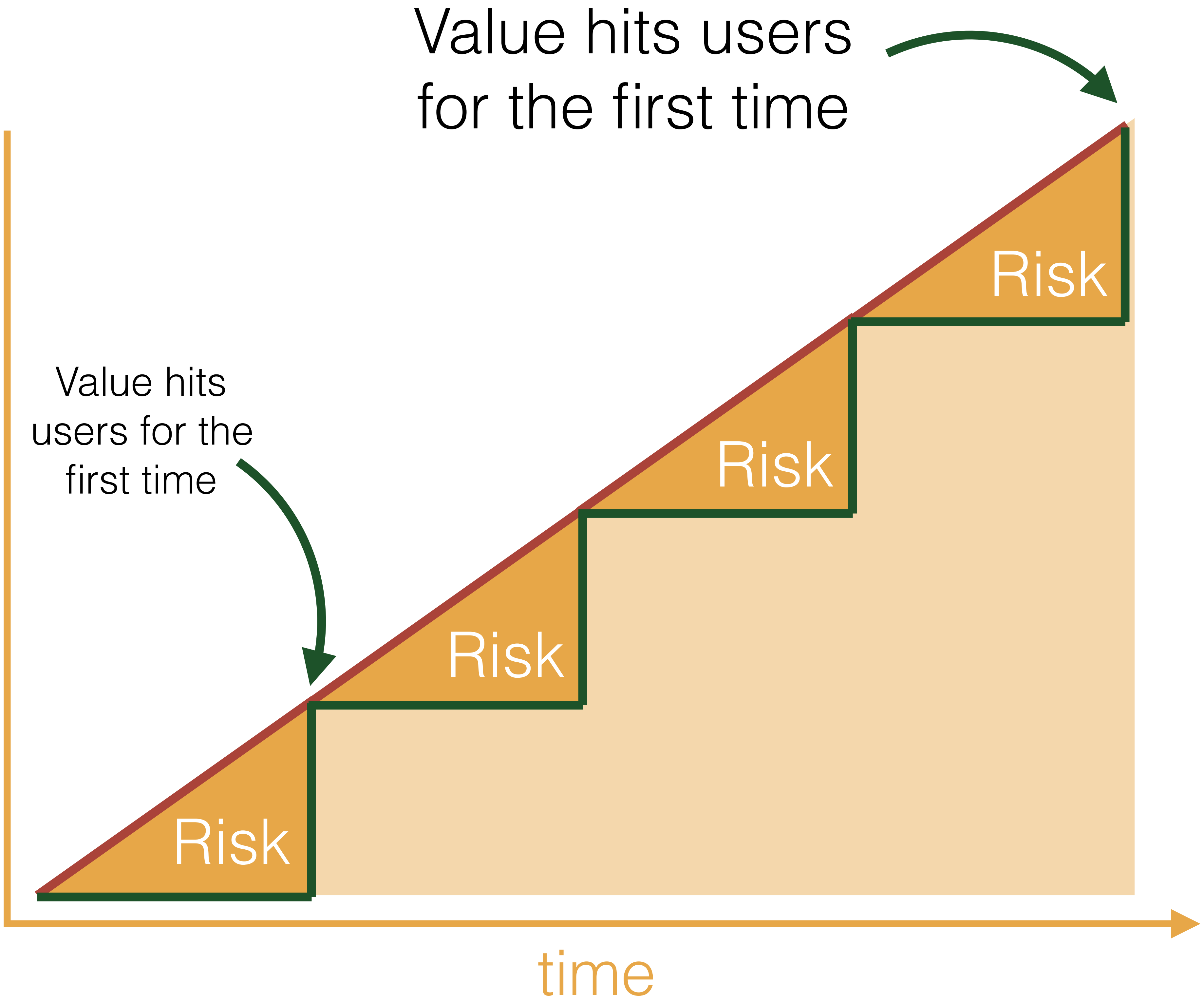
time


Value hits users for the first time
time



Value hits
users for the
first time
time


Value hits
users for the
first time
Risk
Risk
Risk
Risk
time



Value hits users for the first time

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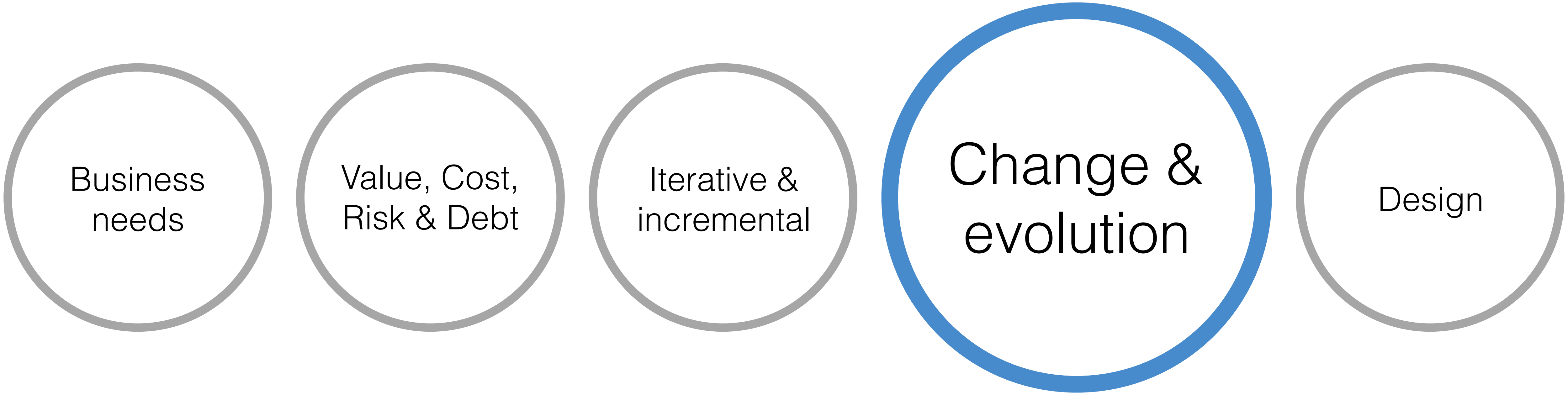


Business needs

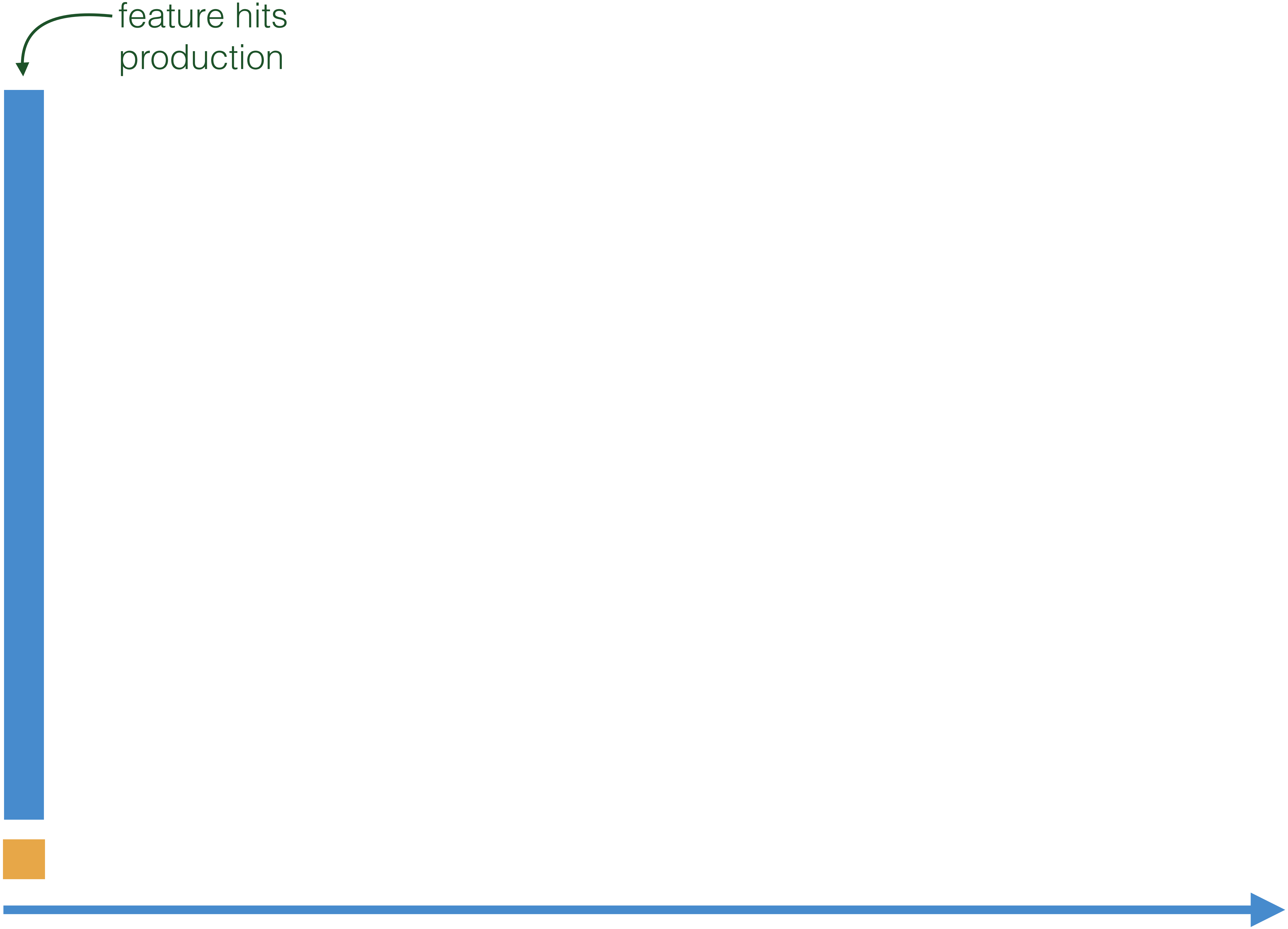
Value, Cost, Risk & Debt

Iterative & incremental

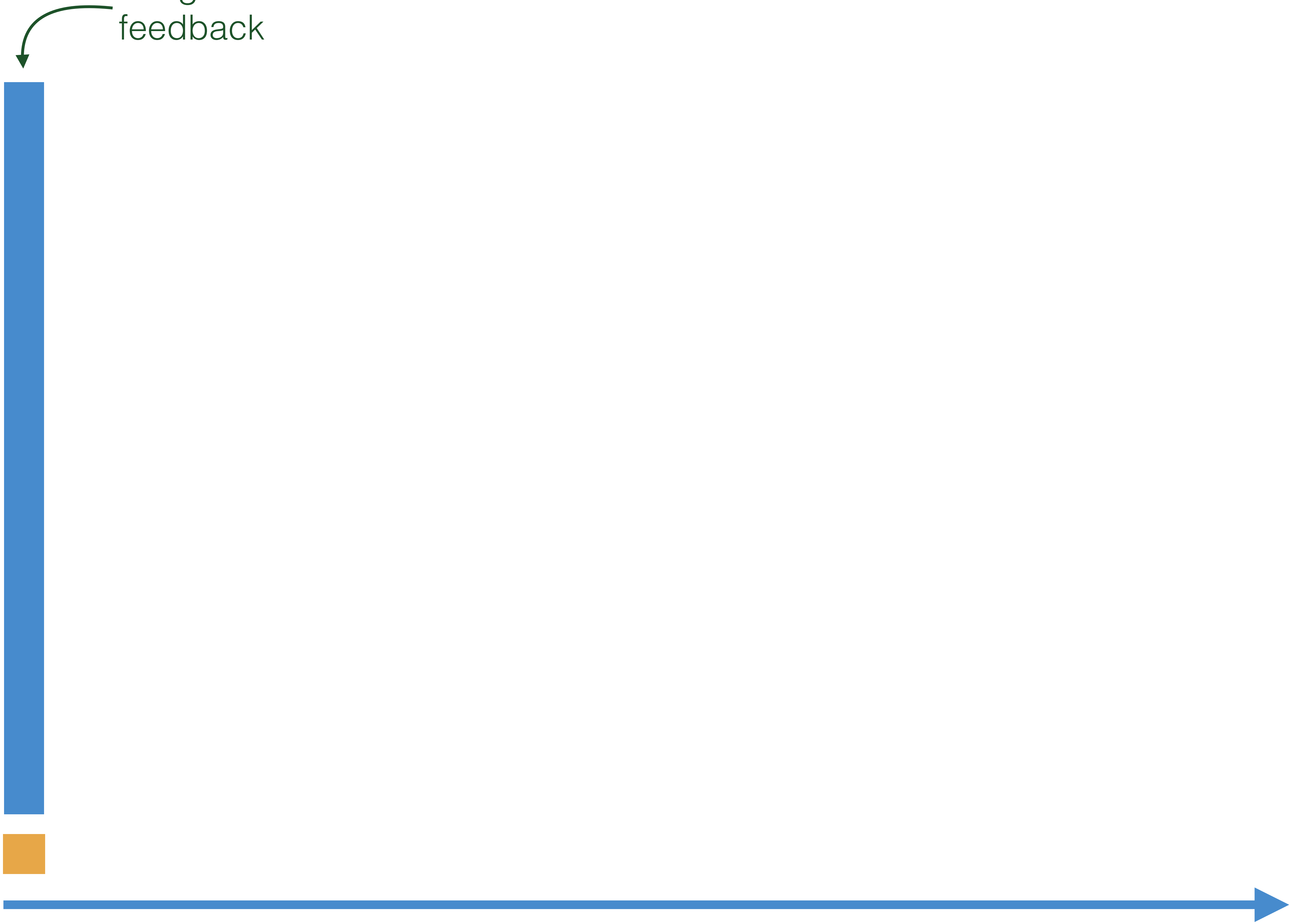
Change & evolution

Design

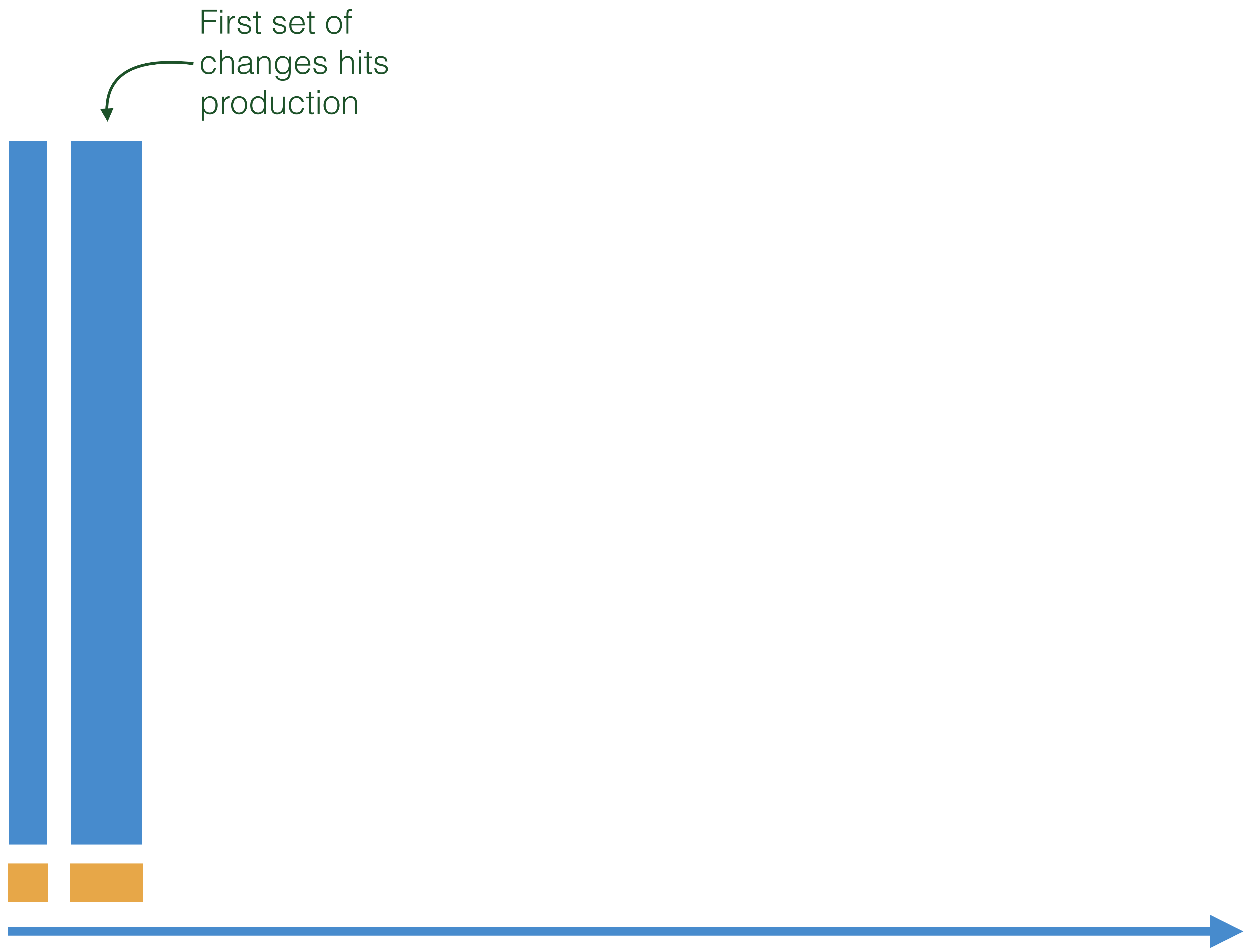
EVOLVING A FEATURE



First vertical feature hits production

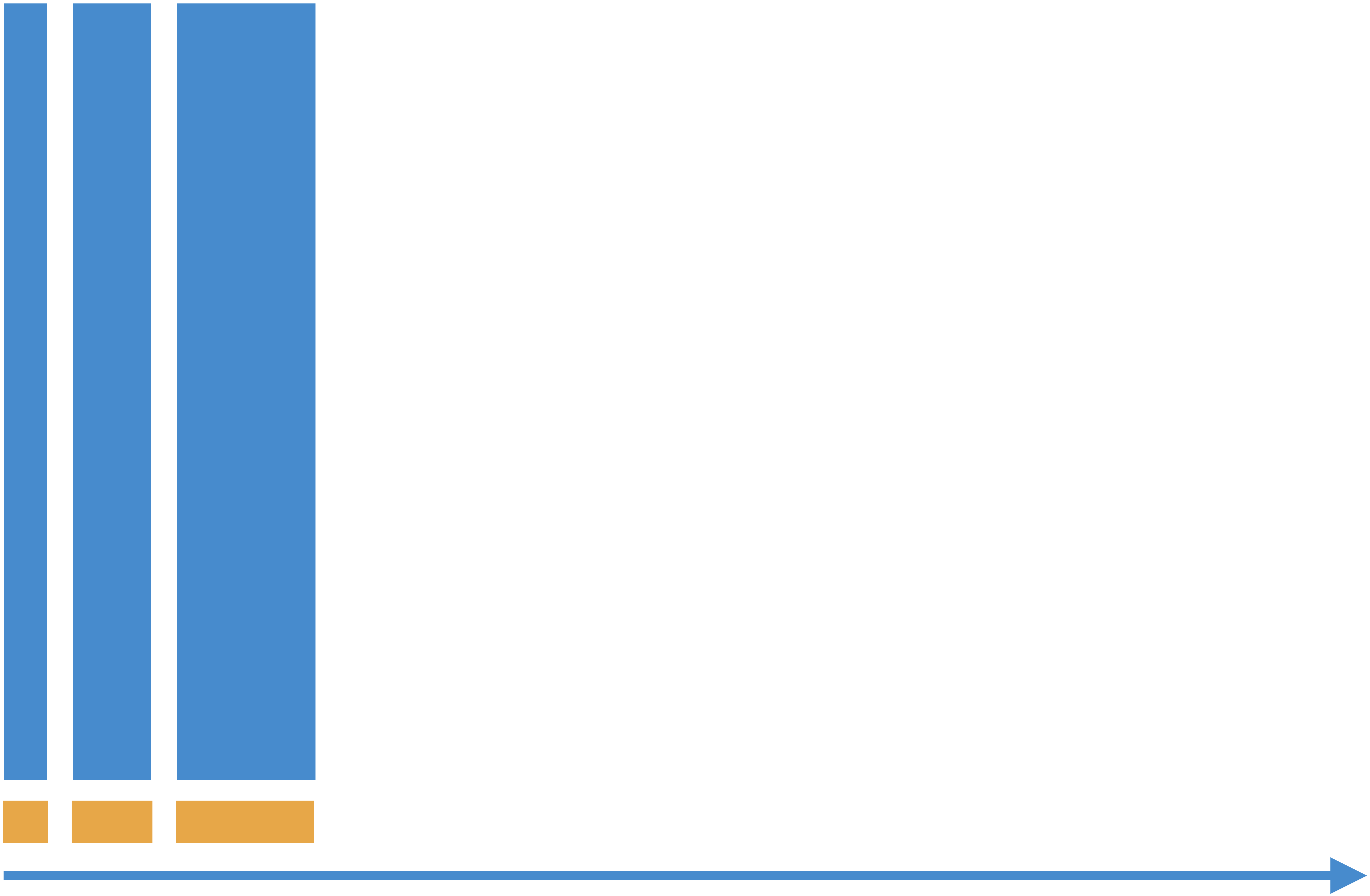


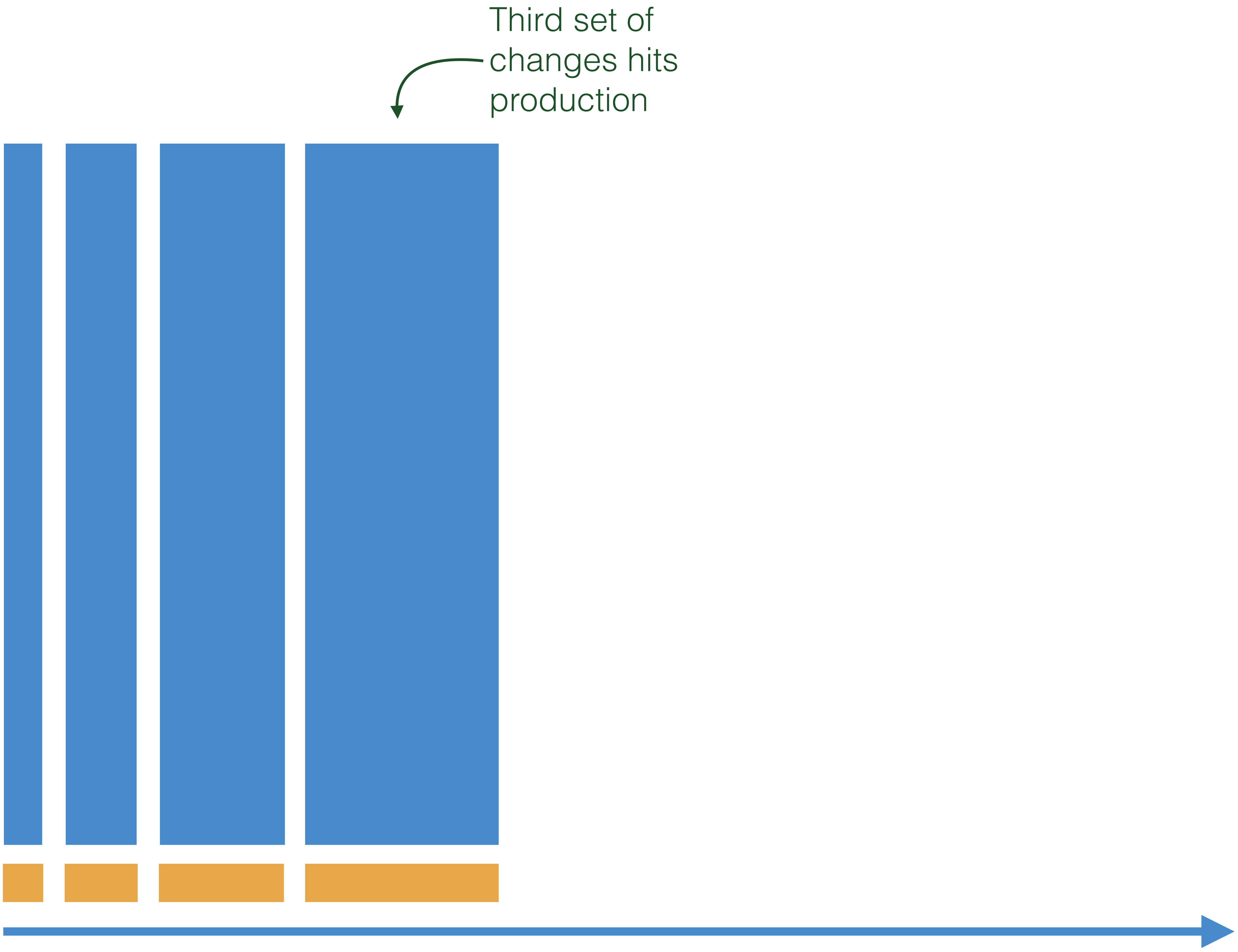
We get feedback



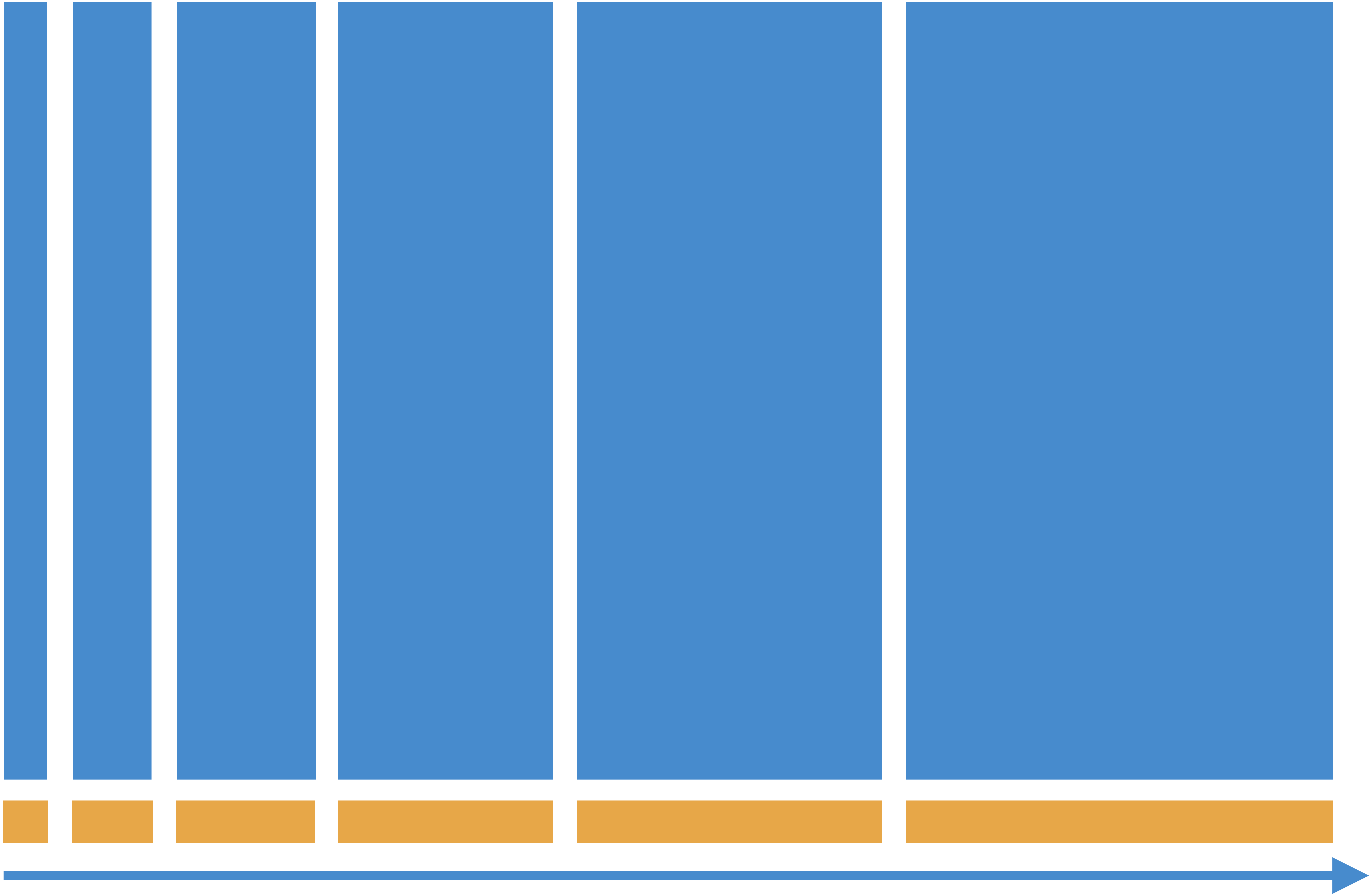
First set of changes hits production

Second set of changes hits production

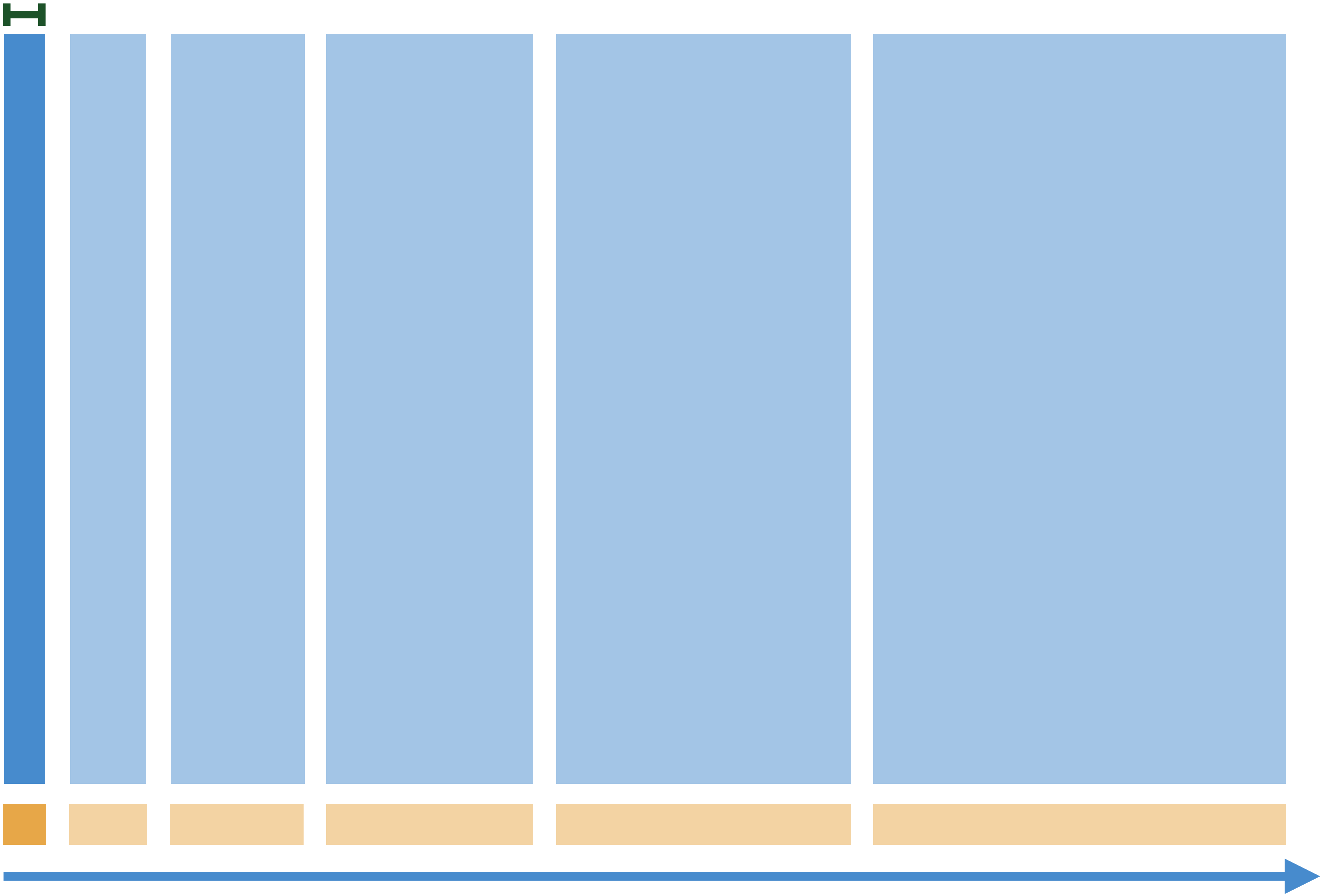




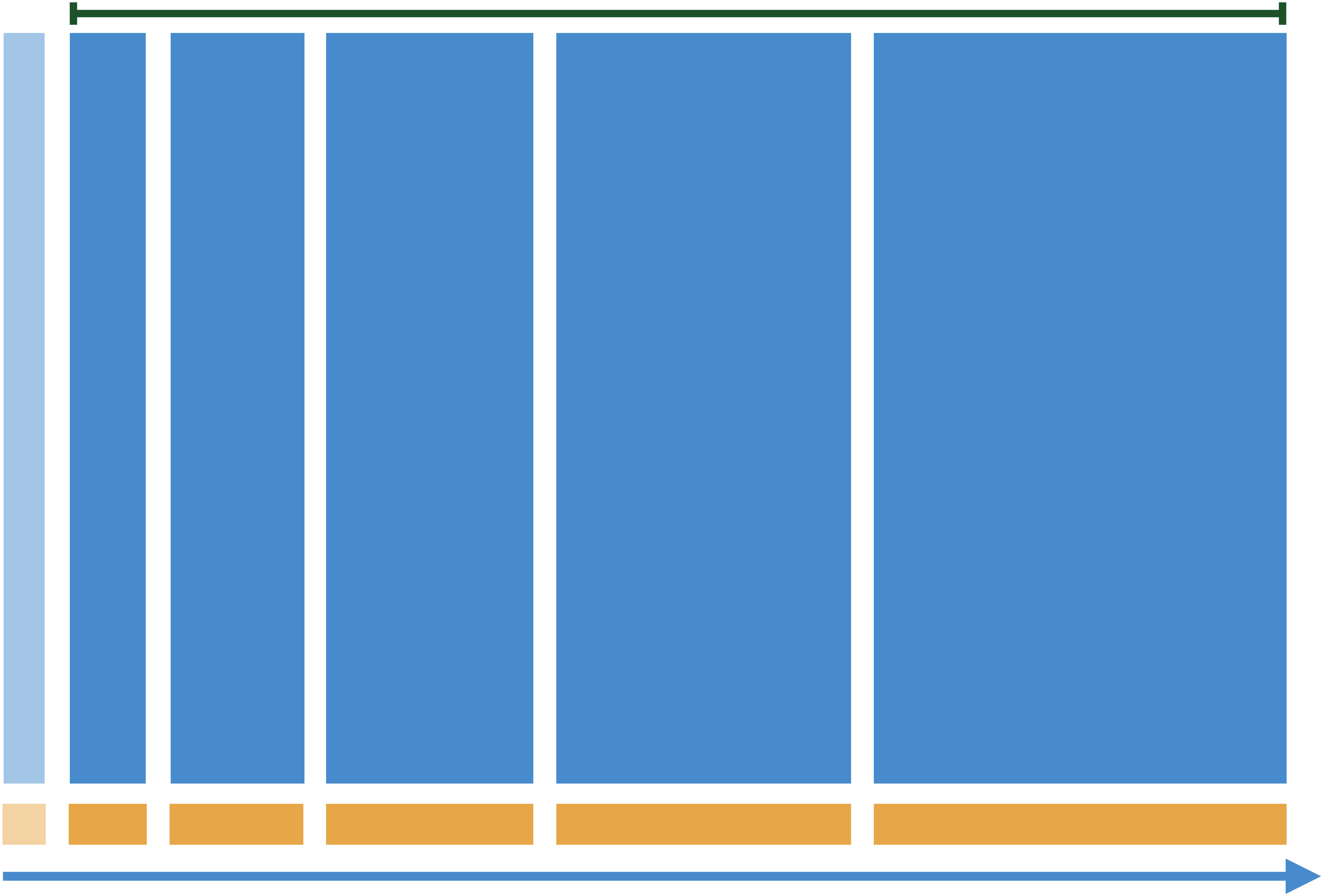
Third set of changes hits production



Cost of development tends to zero



Cost of Software is the cost of evolving software

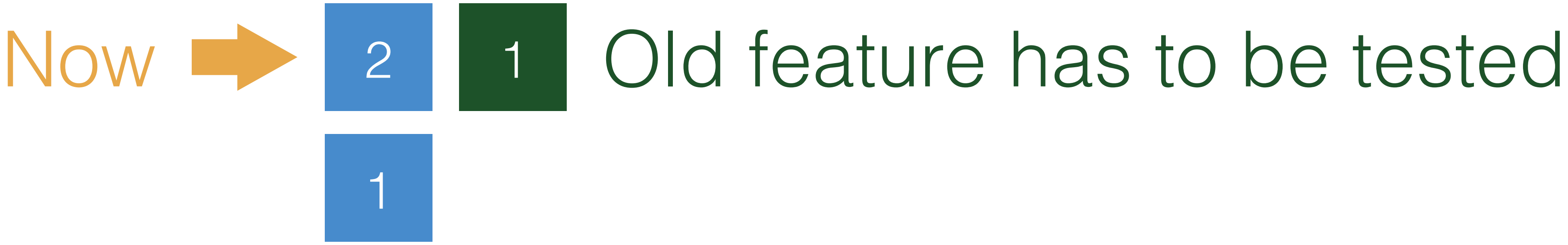


Testing

Challenge of reliable continuous delivery

Now ➡

Now → 1 New feature is shipped



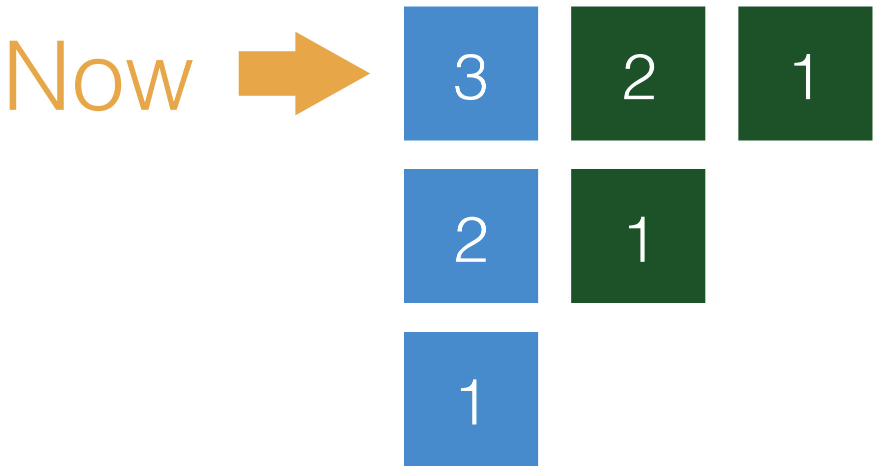
Now

2

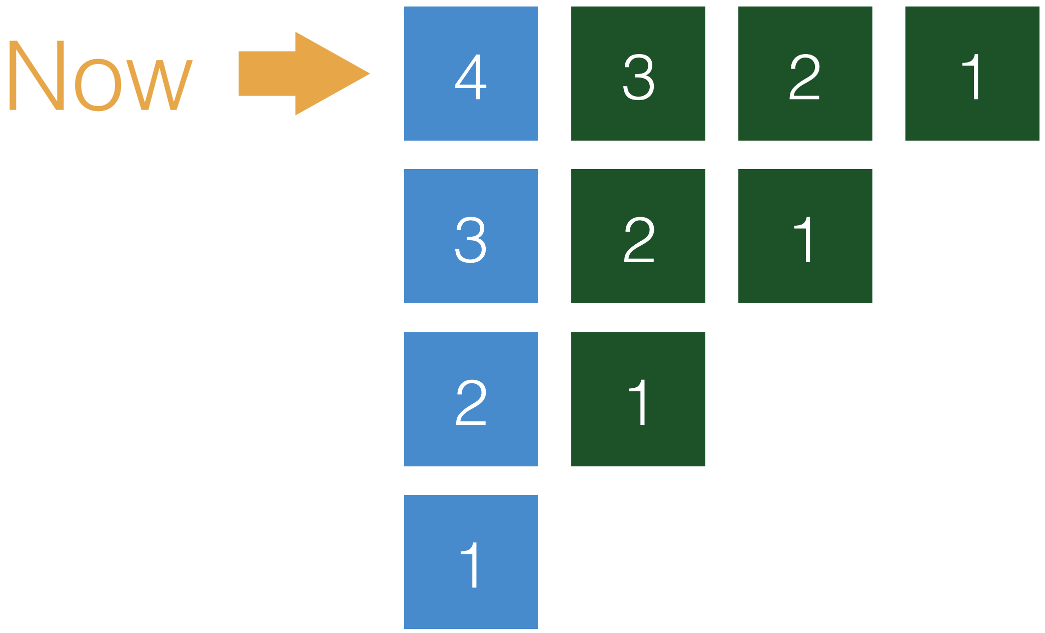
1

Old feature has to be tested

1



Now



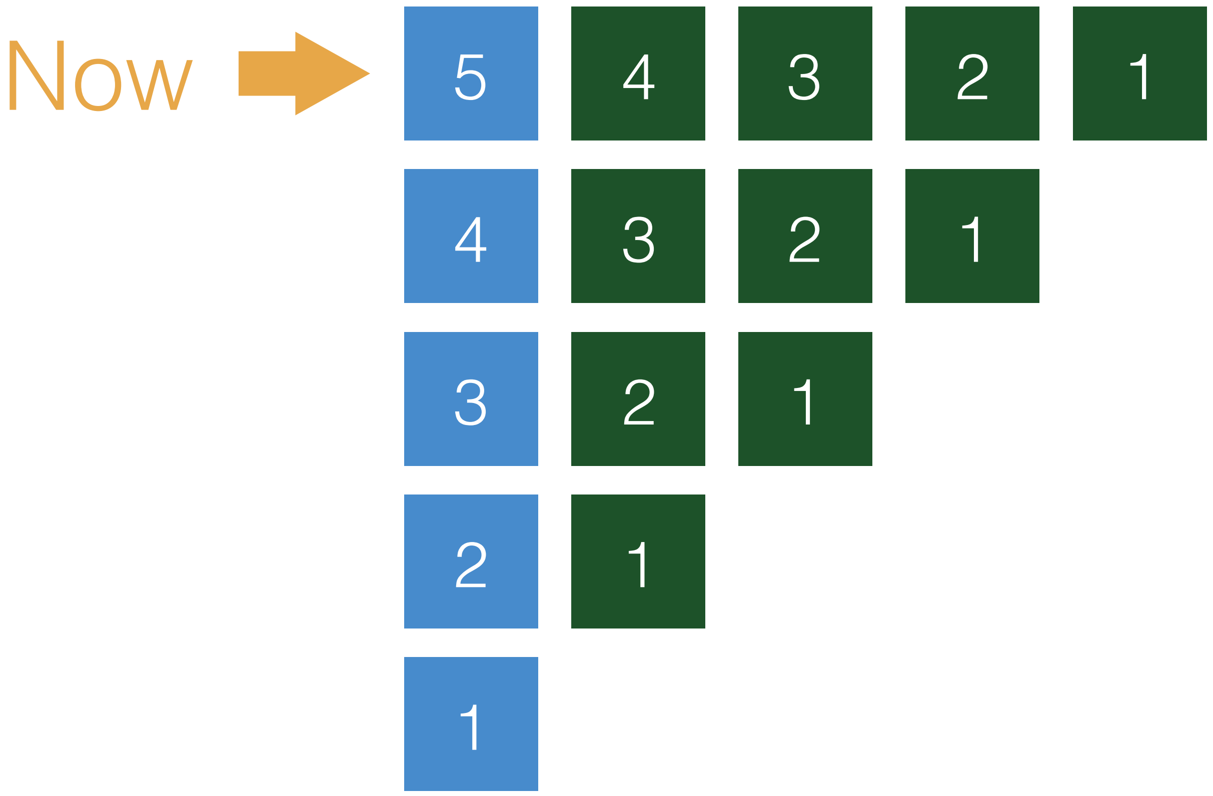
Now

4 3 2 1

3 2 1

2 1

1



Now

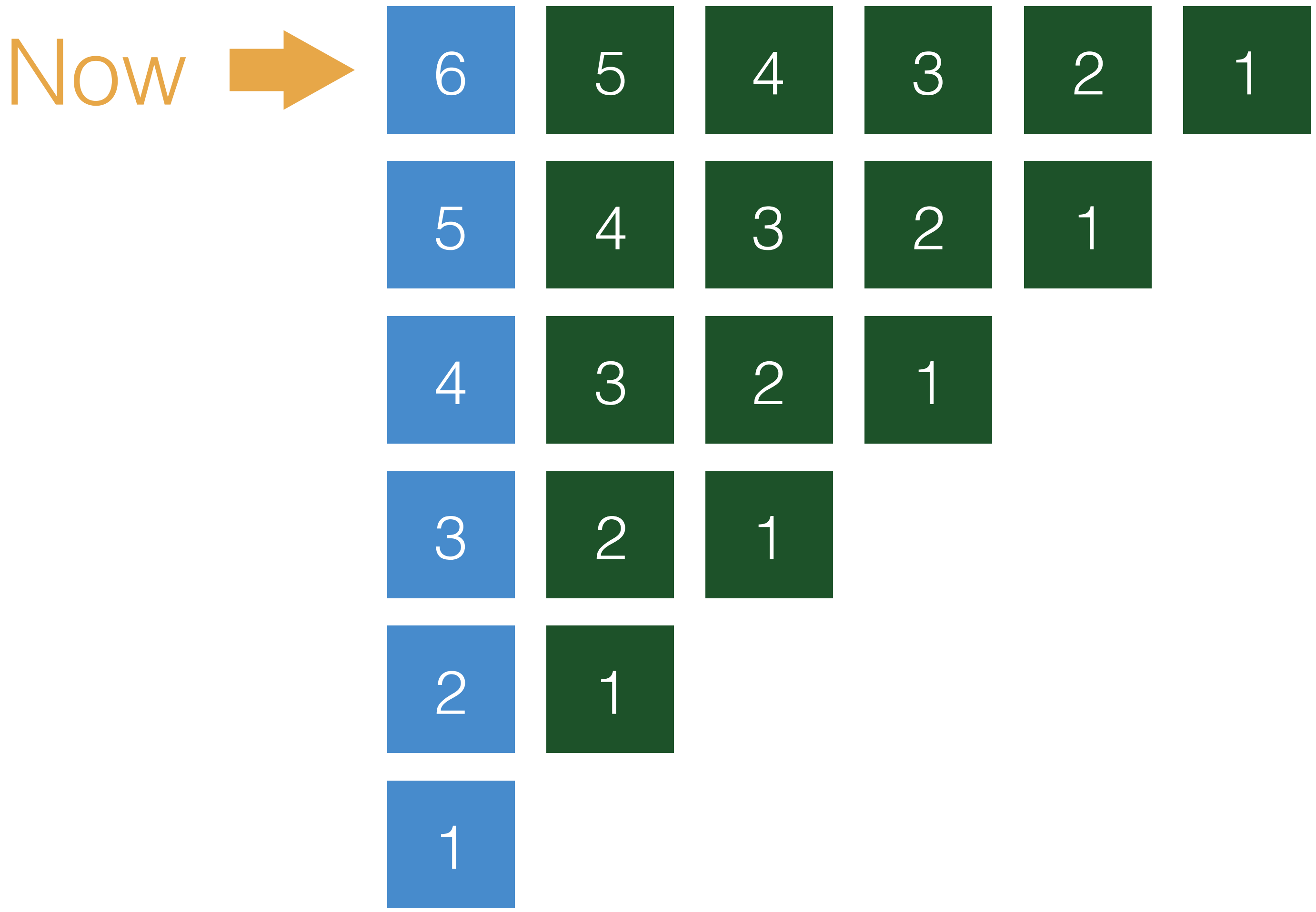
5 4 3 2 1

4 3 2 1

3 2 1

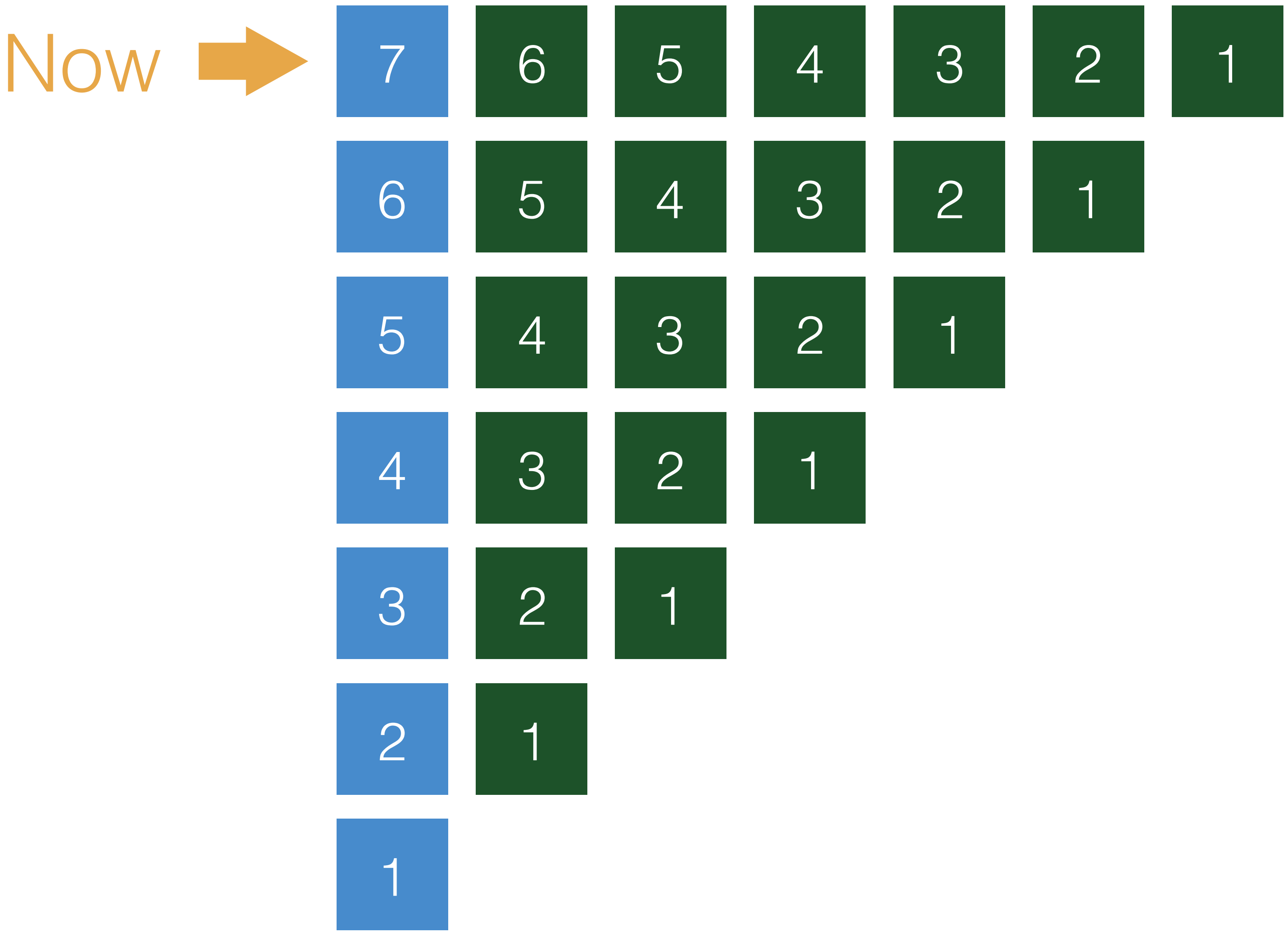
2 1

1



Now

6	5	4	3	2	1
5	4	3	2	1	
4	3	2	1		
3	2	1			
2	1				
1					



Now

7 6 5 4 3 2 1

6 5 4 3 2 1

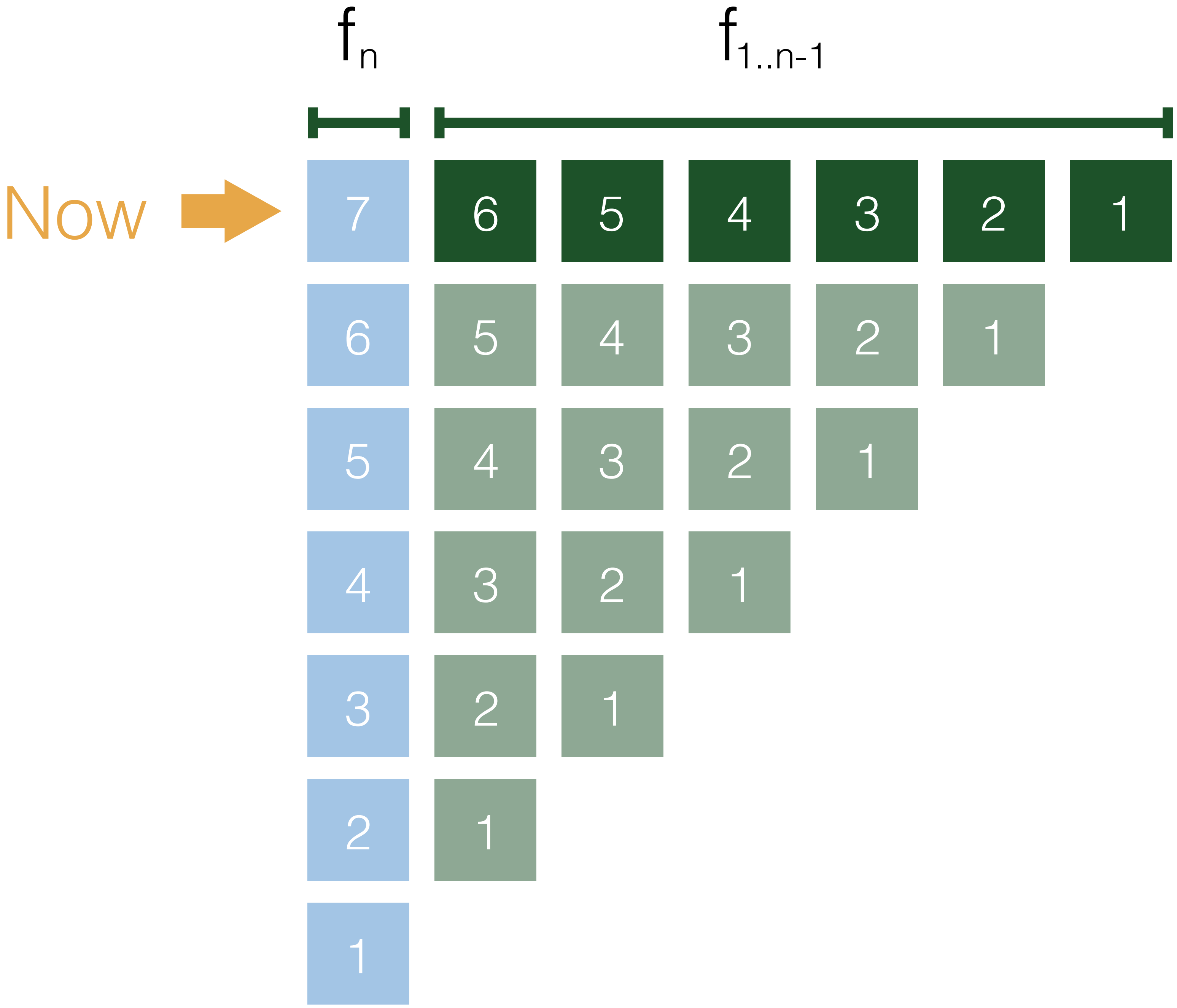
5 4 3 2 1

4 3 2 1

3 2 1

2 1

1



f_n $f_{1..n-1}$

Now

7 6 5 4 3 2 1

6 5 4 3 2 1

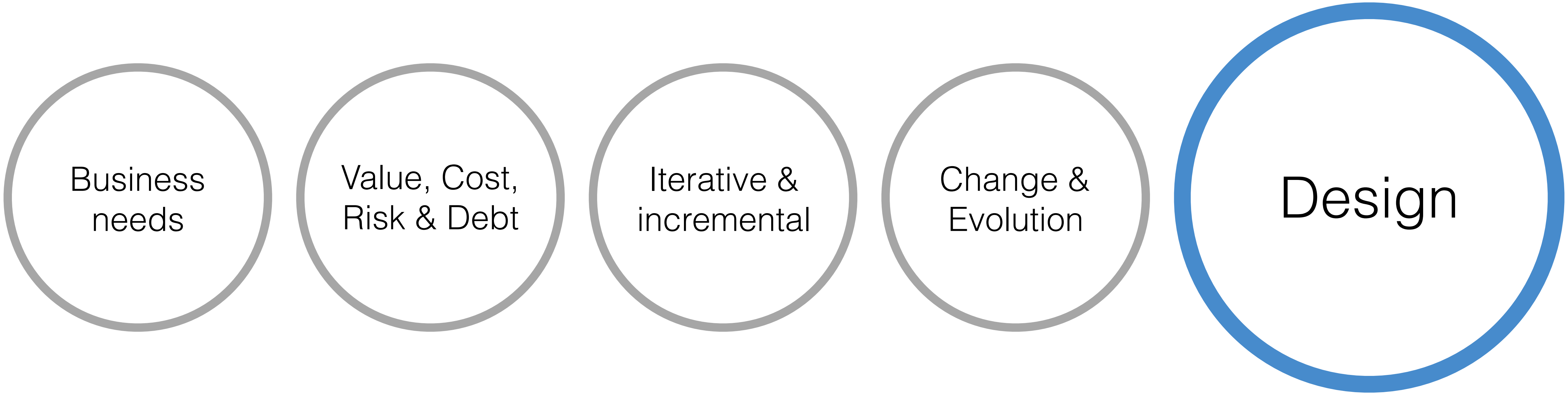
5 4 3 2 1

4 3 2 1

3 2 1

2 1

1



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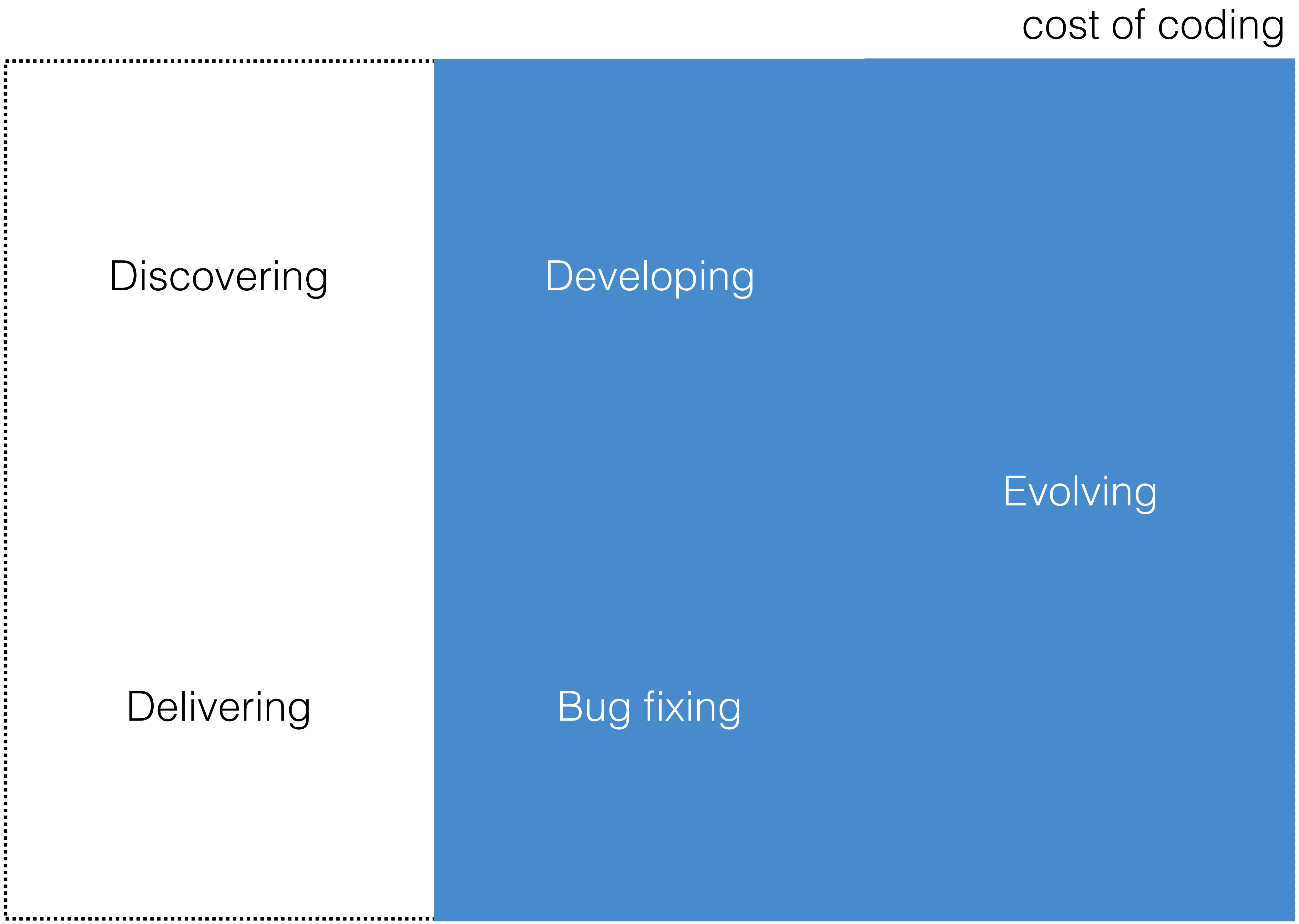
Iterative & incremental

Change & Evolution

Design

Economic team activities

Risk driven	• architecture • knowledge sharing	Entrar en EEUU va a duplicar la concurrencia, ¿podría una caché ayudarnos? Esto solo lo sabe Julián, como se vaya nos hundimos
Debt driven	• refactoring	Conseguimos llegar a aquella demo, pero hemos hecho tal mierda que cuando haya que cambiar algo va a ser imposible
Cost driven	• **software design** • delivery automation	Solo necesitan que añadamos el porcentaje facturado, pero es que tengo que cambiar media aplicación para conseguirlo
Value driven	• discovering features with big impact	Ésta es al funcionalidad que nos hace vender el producto



cost of coding

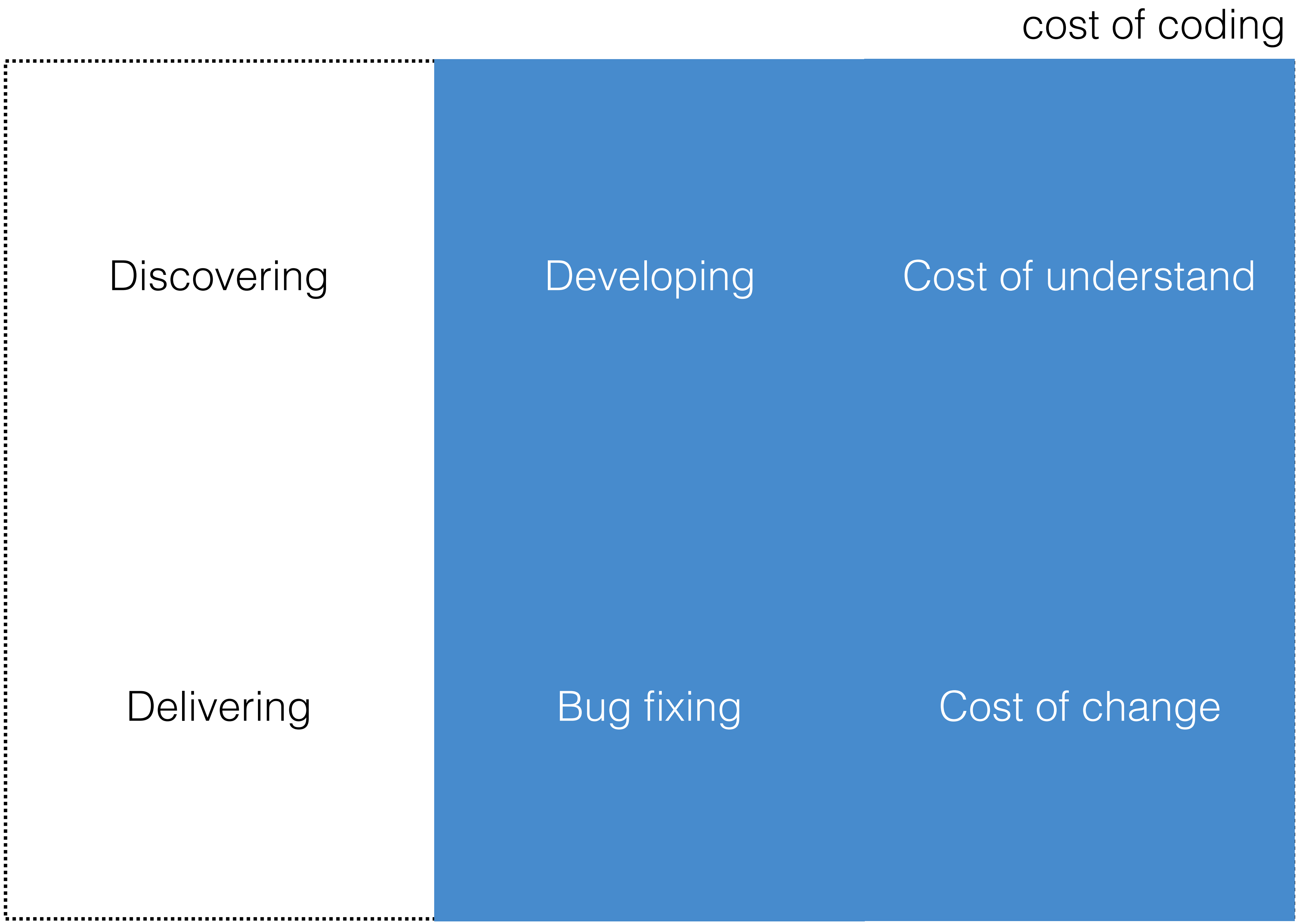
Discovering

Developing

Evolving

Delivering

Bug fixing



cost of coding

Discovering

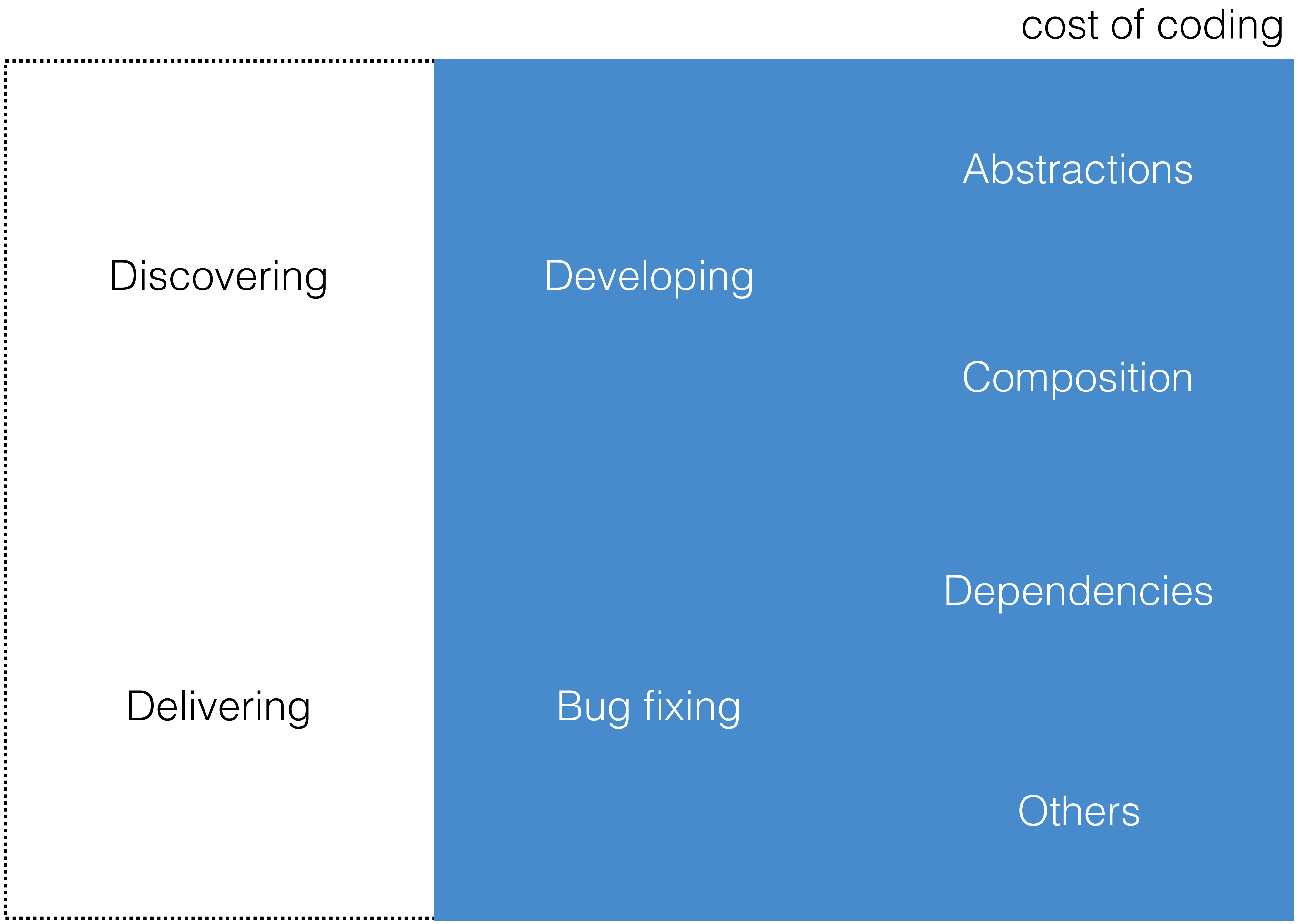
Developing

Cost of understand

Delivering

Bug fixing

Cost of change



cost of coding

Discovering

Delivering

Developing

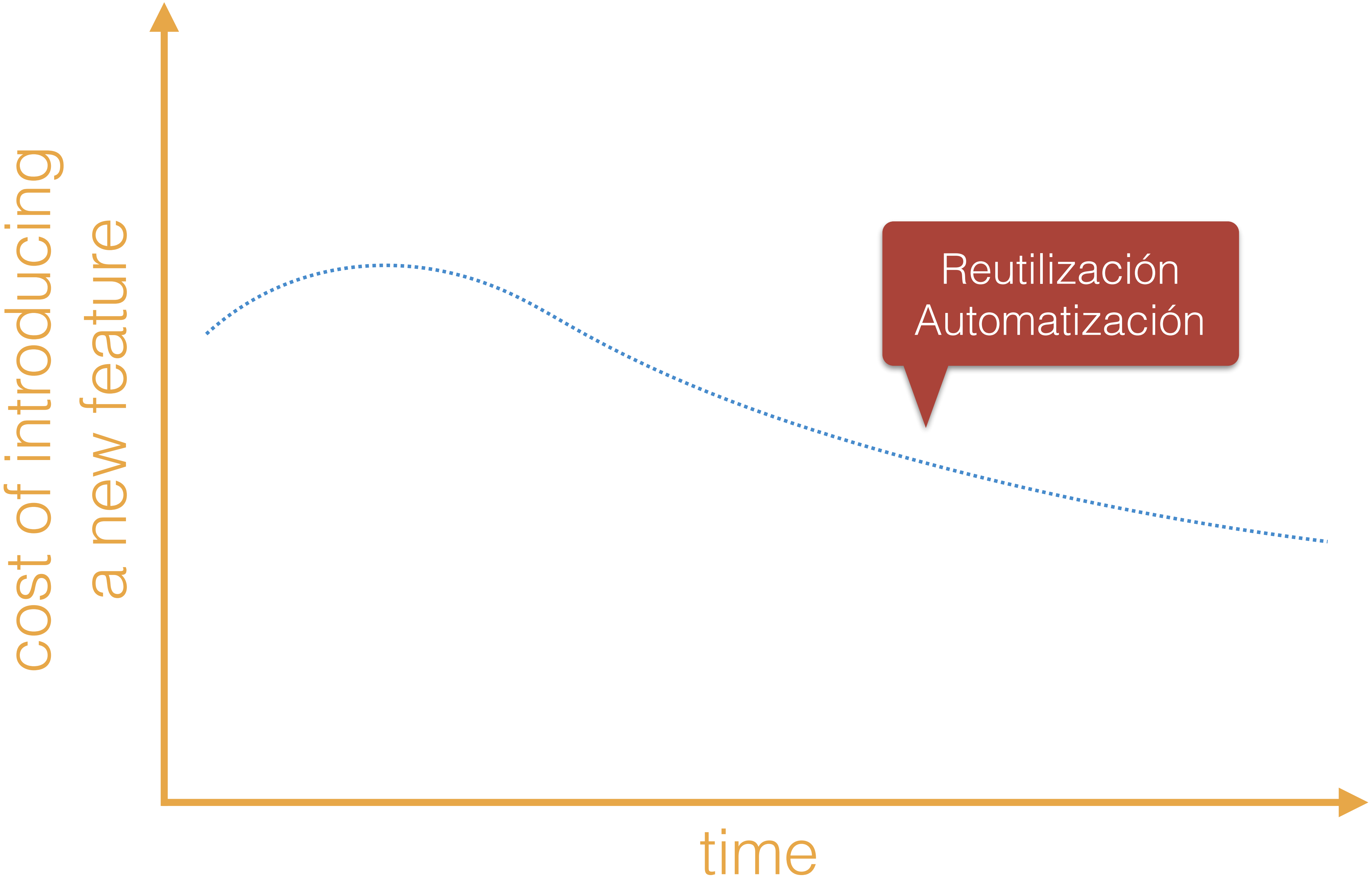
Bug fixing

Abstractions

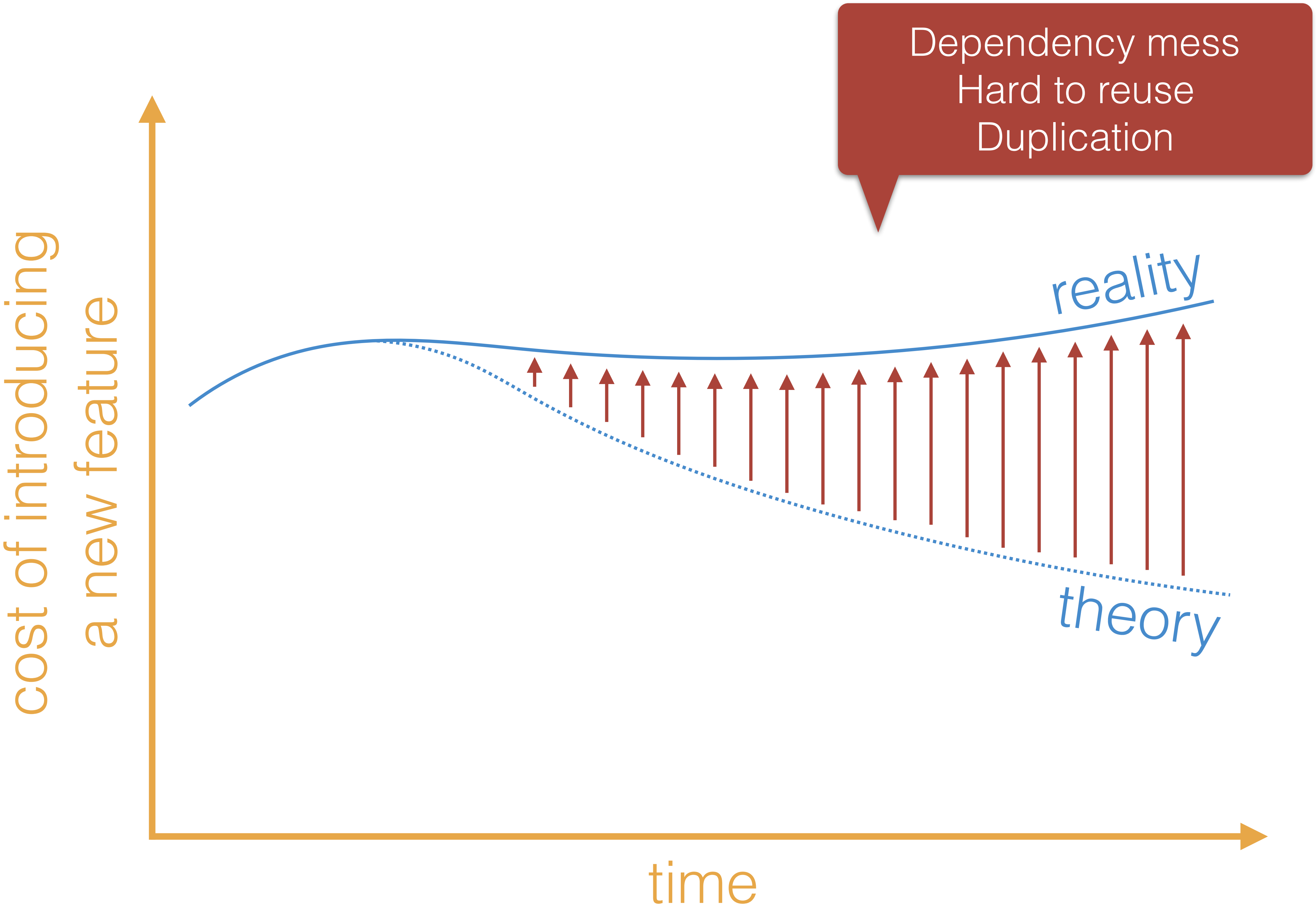
Composition

Dependencies

Others



Reutilización
Automatización



Dependency mess
Hard to reuse
Duplication

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