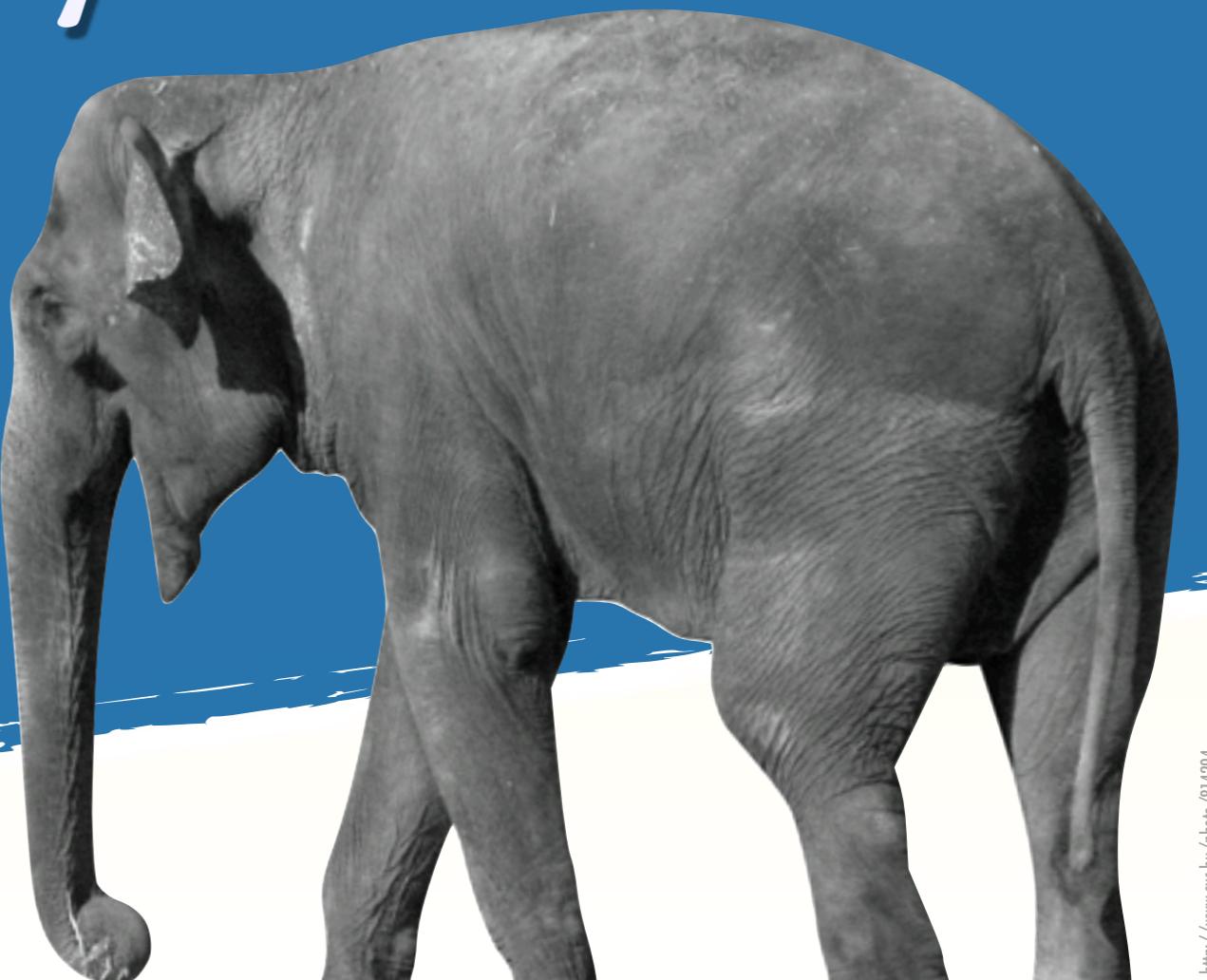


THE SCIENCE OF GUESSING

*Drupal Estimation
Techniques*

FROM
*Project
Managers*



INTRODUCTIONS

Seriously, who's this guy?



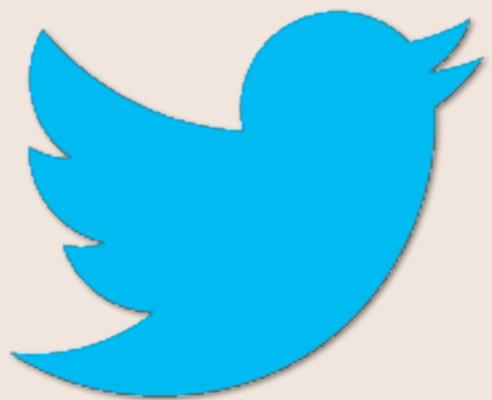
JAKOB PERSSON

Doing Drupal since 2005, co-founded NodeOne in 2007, currently freelance Drupal consultant

WE ENCOURAGE BIRDSONG

Tweet, Tweet, Tweedly-deet...

QUESTIONS & COMMENTS?



#drestimate

WHY YOU ARE HERE

WHY YOU ARE HERE

When a client or
colleague asks you
for an estimate,
what's your initial
reaction?

WHY YOU ARE HERE

When a client or colleague asks you for an estimate, what's your initial reaction?

IS IT THIS? —————→



WHY YOU ARE HERE

When a client or colleague asks you for an estimate, what's your initial reaction?

OR... MAYBE THIS?



WHY YOU ARE HERE

When a client or colleague asks you for an estimate, what's your initial reaction?

I HOPE IT'S NOT THIS....



WHY YOU ARE HERE

If it's anything like that,

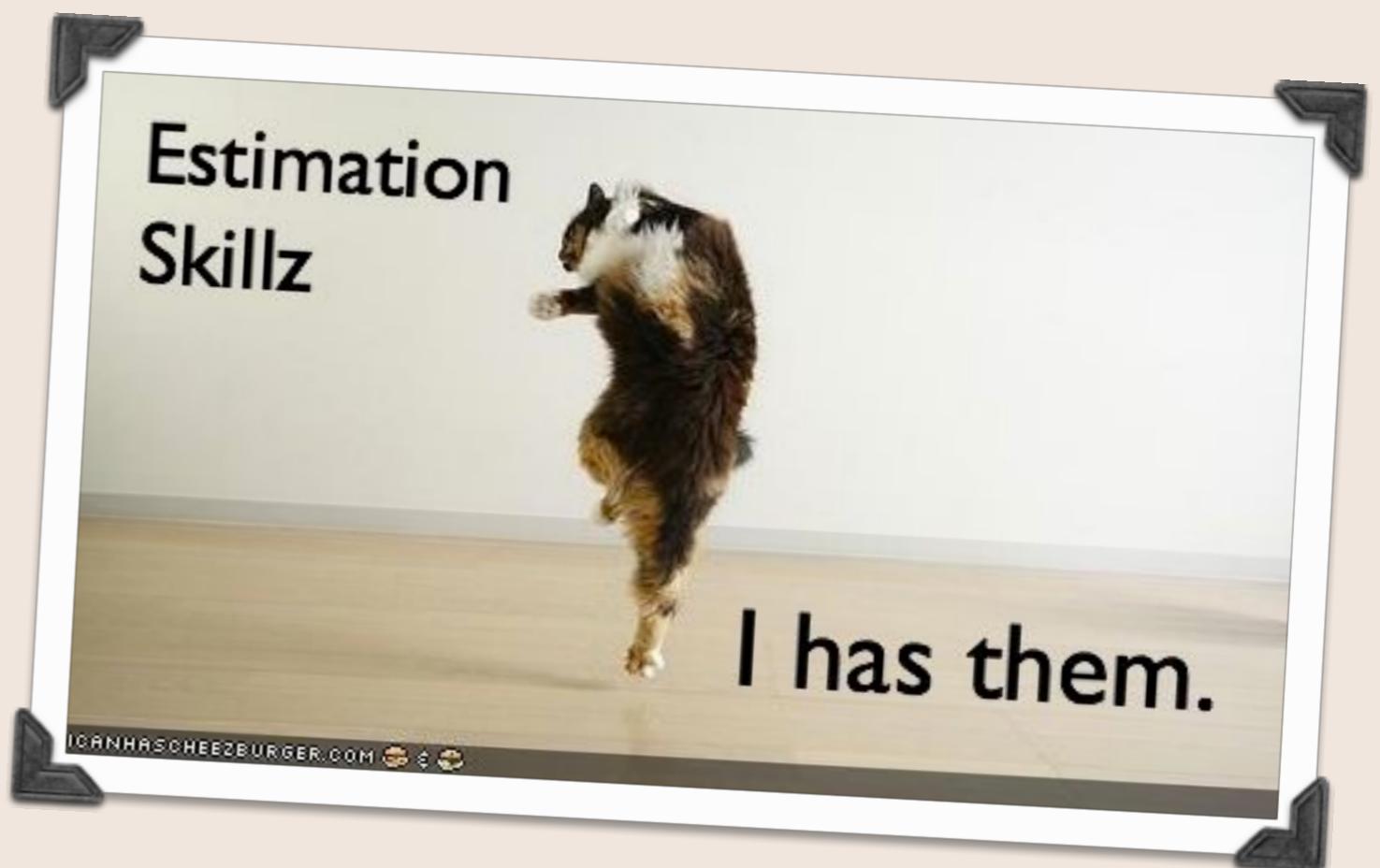
You've come to the
right place!

WHY YOU ARE HERE

At the end of this presentation, I want you to feel like this when asked for an estimate.

I'LL COVER:

- What an estimate is
- Why estimates are needed
- How risks affect estimates
- How an estimate is made
- Answers to your questions



WHAT AN ESTIMATE IS

WHAT AN ESTIMATE IS

“Estimation is the calculated approximation of a result which is usable even if input data may be incomplete or uncertain.”

- WIKIPEDIA

WHAT AN ESTIMATE IS

“How to bake a pie”

- ✓ Requirements clarification
 - ✓ Use cases
 - ✓ UI refinement

- ✓ Theming
- ✓ Development/config

- ✓ Automated testmaking
 - ✓ Testing
 - ✓ Bugfixing

- ✓ Training/doc
- ✓ Deployment

- ✓ Project management time

- ✓ Requirements clarification
- ✓ Use cases
- ✓ UI refinement

STORY

Focuses on needs and describe functionality in a way that shows its application and business value.

- Role
- Need
- Sequence of events
- How to demo

CASE

Focus on behavior and interaction, eliminates ambiguity and provides the developer with the information he/she needs.

- Summary
- Rationale
- Users
- Preconditions
- Default events
- Alternative sequence



- ✓ Requirements clarification
- ✓ Use cases
- ✓ UI refinement

Requirements evolve and are clarified over the course of a project, and they're often provided as UI designs.

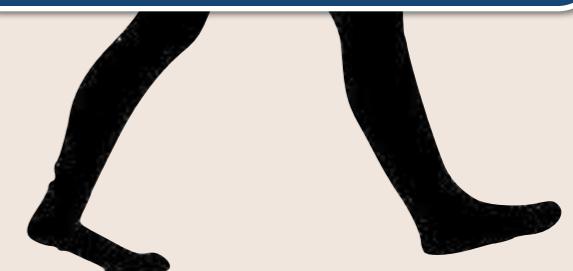
Click me



Click me



Click me



April

5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

May

- 
- ✓ Theming
 - ✓ Development/config

<html>

<?php

hook_form_alter()

The “real” work?

.tpl.php

CCK

Views

Panels

<aside>

Rules

\$(function() {...})

- ✓ Automated testmaking
- ✓ Testing
- ✓ Bugfixing

- Test more, build more
- Automated testing saves time over the course of a project
- Tests helps identify and manage ambiguous requirements



✓ Training/doc

✓ Deployment

HOMEWORK (DON'T FORGET!):

- Creating content
- Editing menus

Drupal rules, ok?

PROJECT MANAGEMENT DOES TAKE TIME

What about the dreaded....

✓ Project management time

PROJECT MANAGEMENT DOES TAKE TIME

What about the dreaded....

“We don’t need another
PM from your team
adding overhead to this
project.”

- Poor Soul

✓ Project management time

PROJECT MANAGEMENT DOES TAKE TIME

What about the dreaded....

“We don’t need another PM from your team adding overhead to this project.”

- Poor Soul

Sure, your PM can lead. Ours will just be along for the ride to help out with scheduling and documentation.



som~~e~~ecards
user card

✓ Project management time

WHY WE NEED ESTIMATES

WHY WE NEED ESTIMATES

Estimates help to:



Plan



Budget



Communicate

WHY WE NEED ESTIMATES



Plan

What do we mean by planning?

WHY WE NEED ESTIMATES

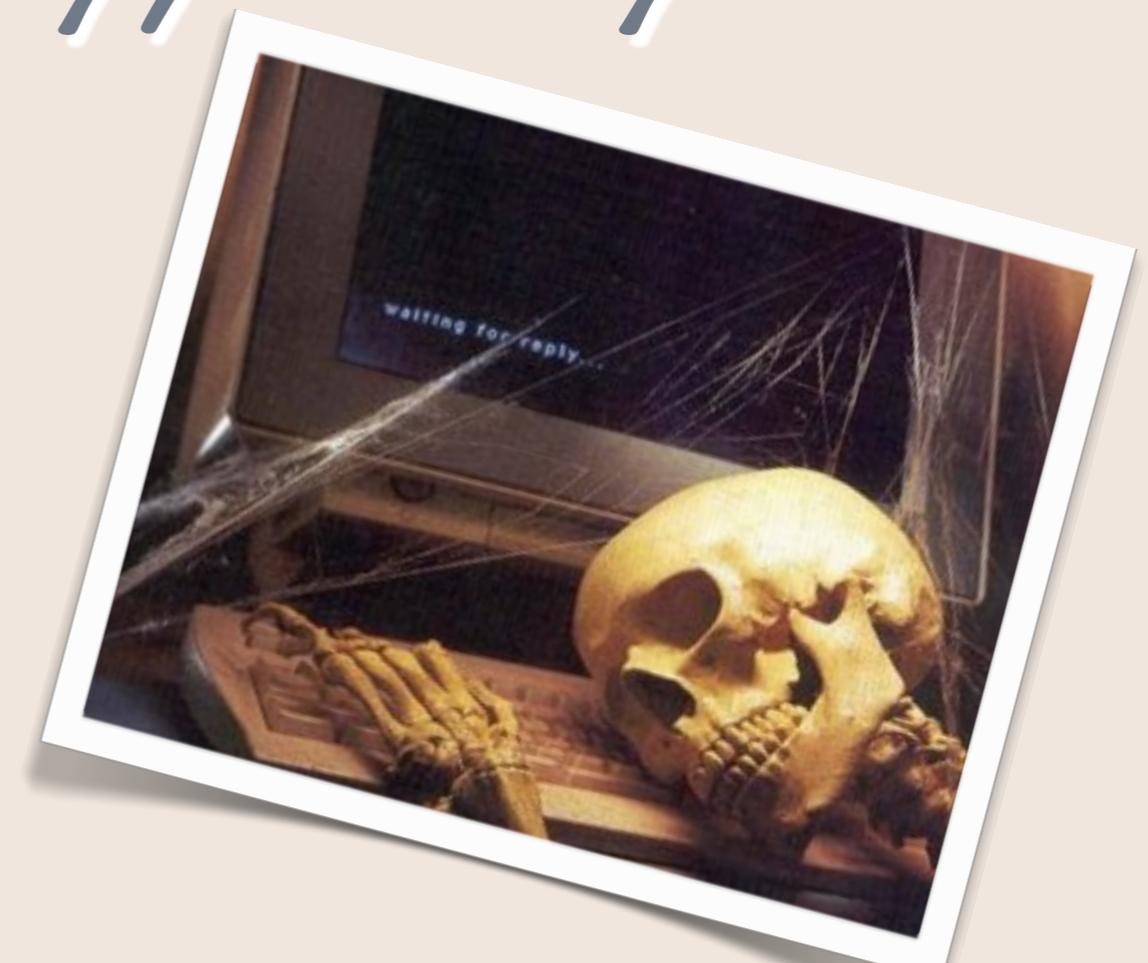


Plan

What do we mean by planning?

When will it
be done?!?

(Yes, I mean schedules!)



WHY WE NEED ESTIMATES



Plan

WHY WE NEED ESTIMATES



Plan



Choose a team

then

| April | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |

Block their time
based on estimates

WHY WE NEED ESTIMATES



Plan

WHY WE NEED ESTIMATES



Plan

| April | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |

Get a deadline...

then



Choose a team

WHY WE NEED ESTIMATES



Plan

Project estimated to 115 hours. I got 3 guys working full time for a week gives...



$$40 \text{ hrs} \times 3 = 120 \text{ hrs}$$

| April | | | | | | | | | | | | May | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |

WHY WE NEED ESTIMATES



Plan

Project estimated to 115 hours. I got 3 guys working full time for a week gives...



Woops... that's
AVAILABILITY

$$40 \text{ hrs} \times 3 = 120 \text{ hrs}$$

April

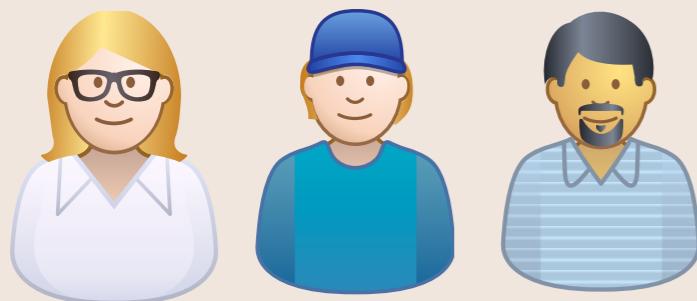
May

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

WHY WE NEED ESTIMATES



Plan

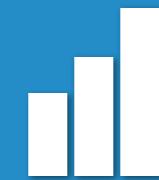


$$6.4 \times 3 = 19.2 \text{ hrs per day}$$

| April | | | | | | | | | | | | May | | | | | | | | | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |

$$115 / 19.2 = 6 \text{ days}$$

WHY WE NEED ESTIMATES



Plan



WHY WE NEED ESTIMATES



Plan



WHY WE NEED ESTIMATES



WHY WE NEED ESTIMATES



Even the best laid plans...

Project A

Project B

Project C

| April | | | | | | | | | | | | | | | | | | | | May | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |

"We need a few extra adjustments"

"BUG! Fix ASAP!"

*"We're going to have
to work the weekend to
fix this!" :(*

WHY DO WE NEED THEM



Budget



"stuff customer wants"



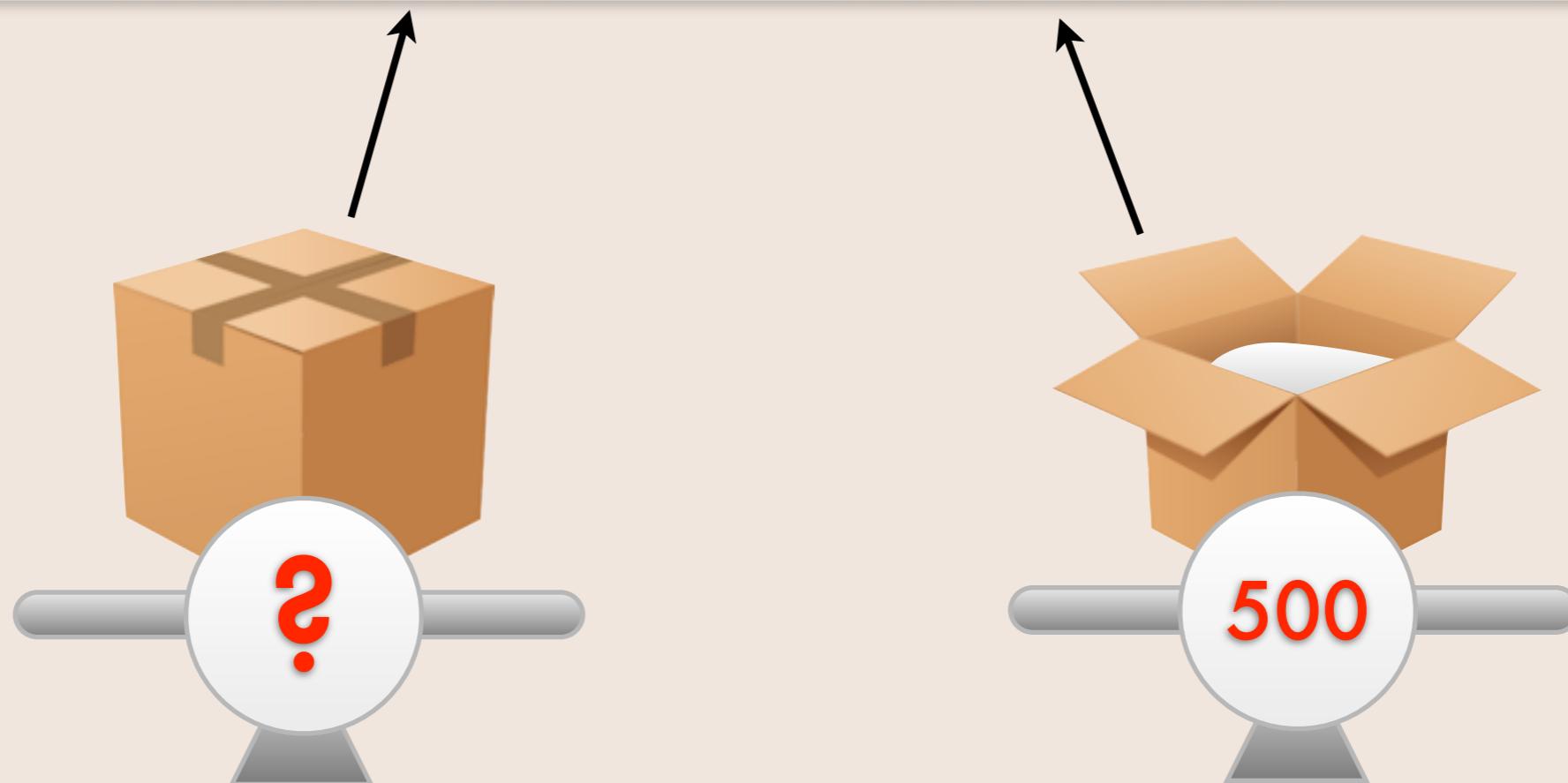
"customer's budget"



WHY DO WE NEED THEM



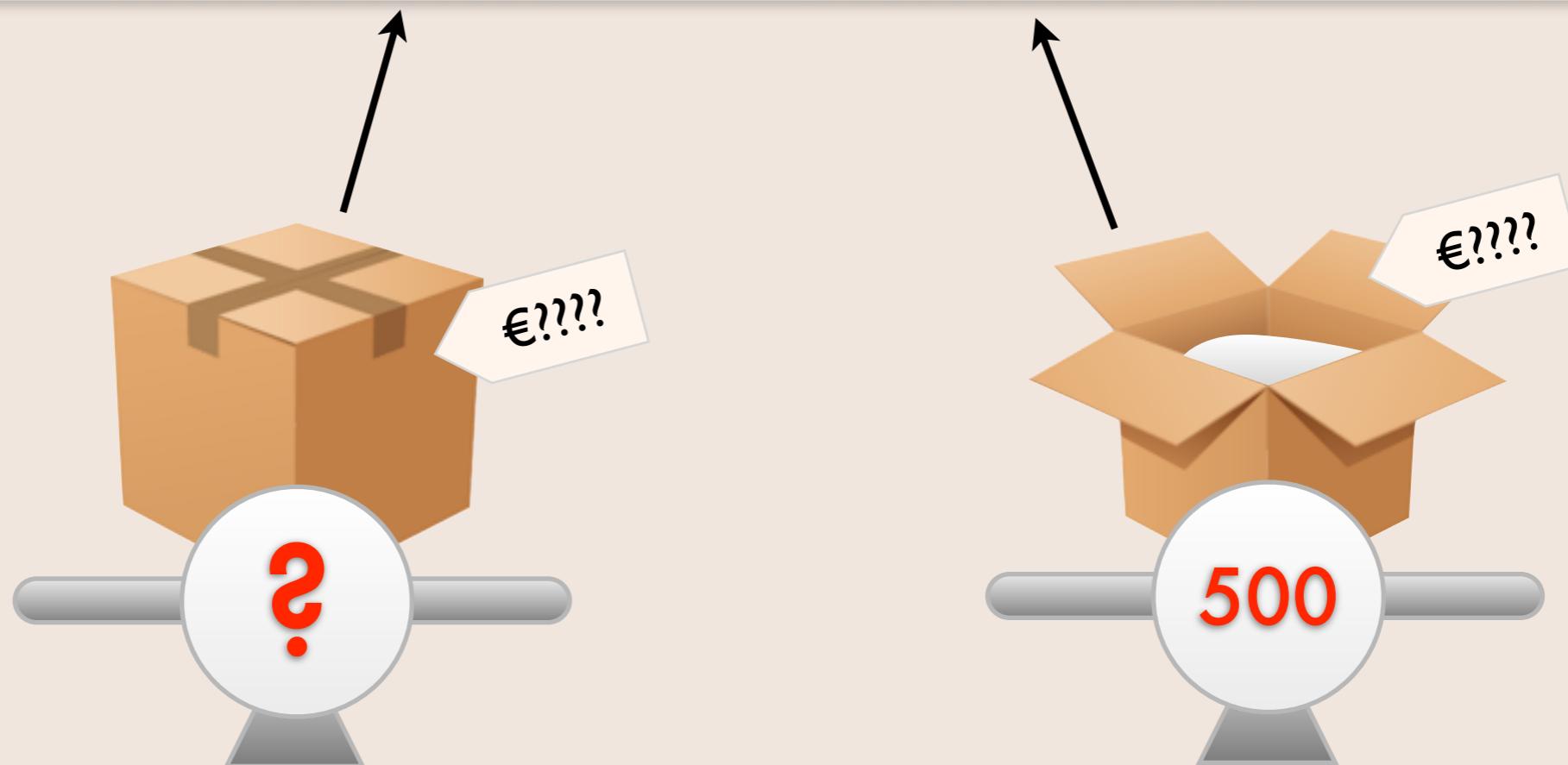
| April | | | | | | | | | | | | May | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
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WHY DO WE NEED THEM



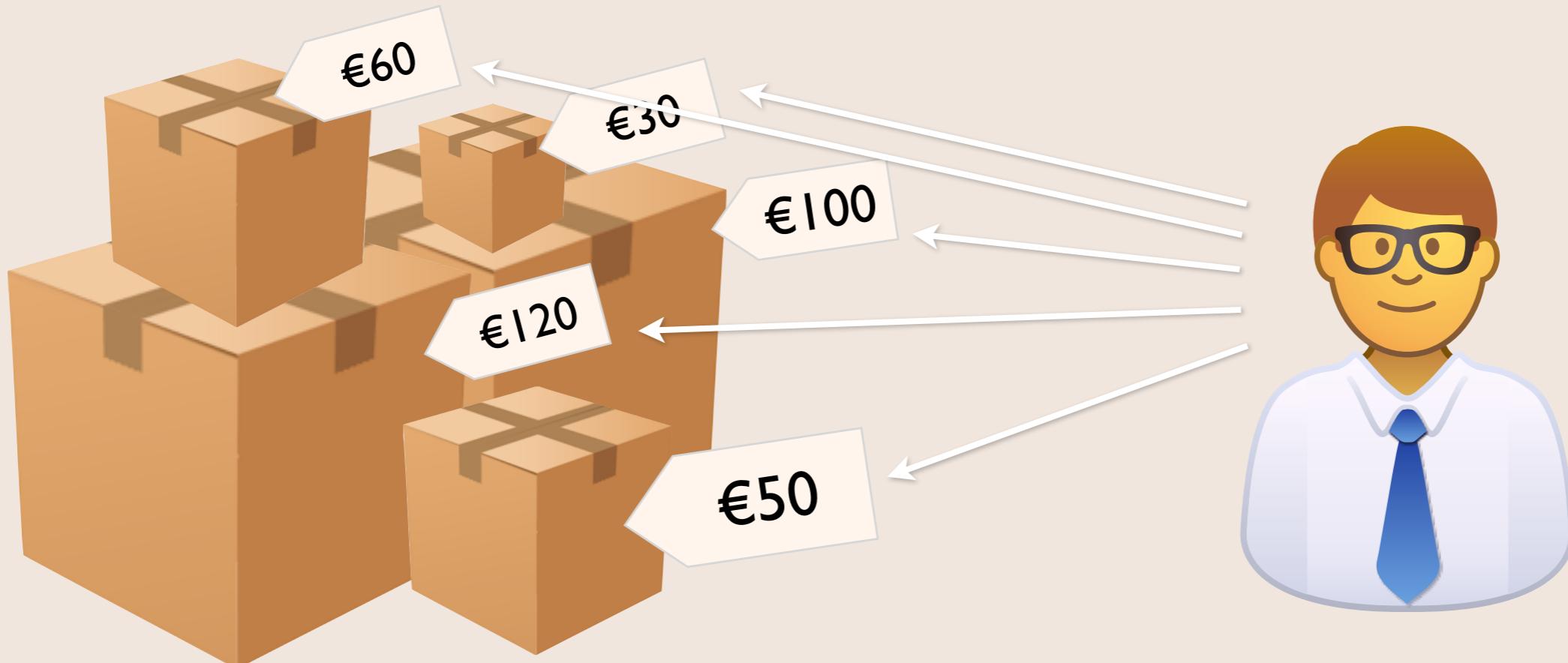
| April | | | | | | | | | | | | May | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |



WHY DO WE NEED THEM



Budget



WHY DO WE NEED THEM



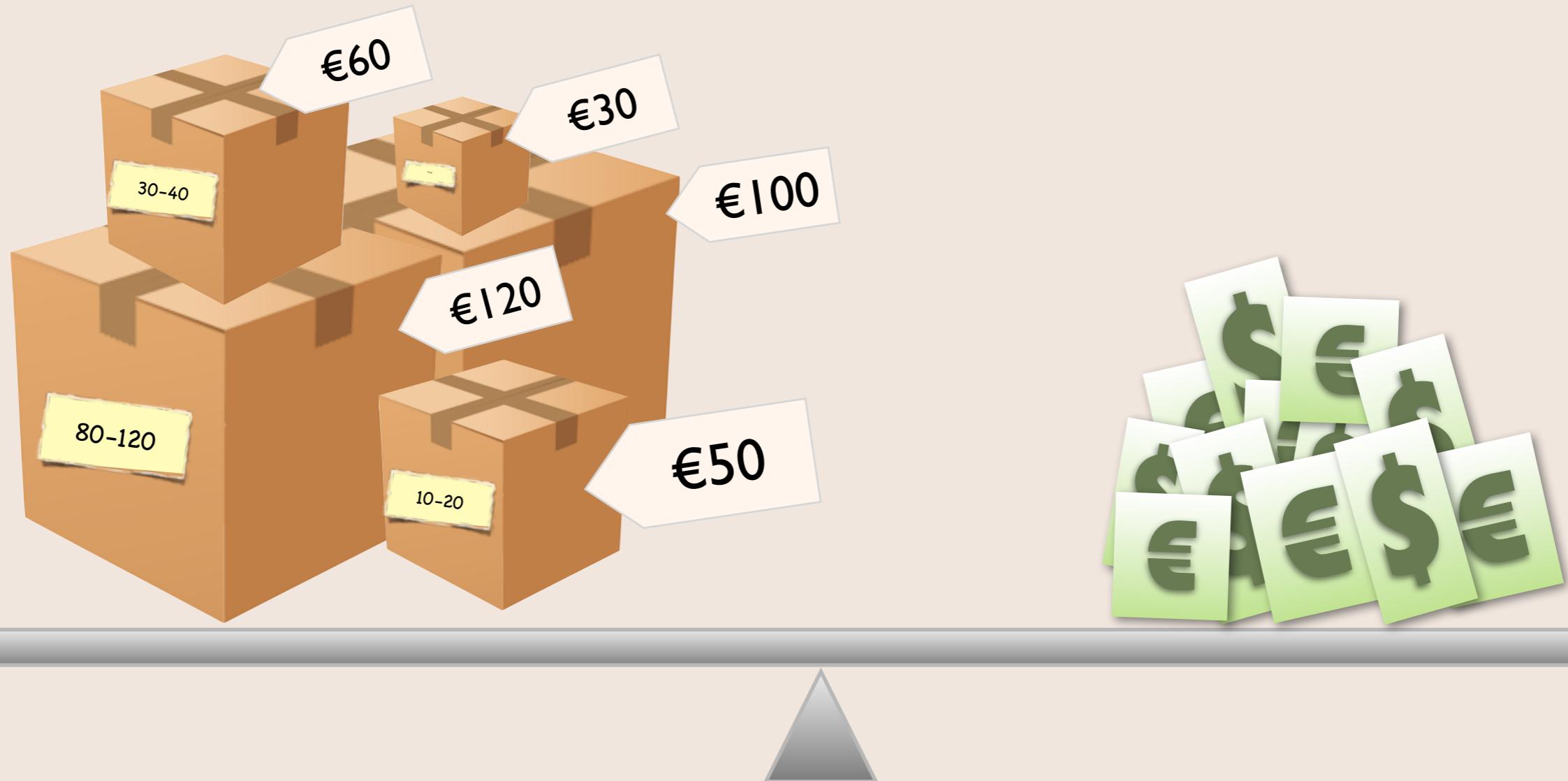
Budget



WHY DO WE NEED THEM



Budget



WHY DO WE NEED THEM



Budget

We *think* this is
accurate...

I'm sure!



WHY DO WE NEED THEM



Budget

We *think* this is accurate...

I'm sure!



April

May

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
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|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|

WHY DO WE NEED THEM



Budget

We *know* this is
accurate...

I'm sure!



April

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

May



WHY DO WE NEED THEM



Budget



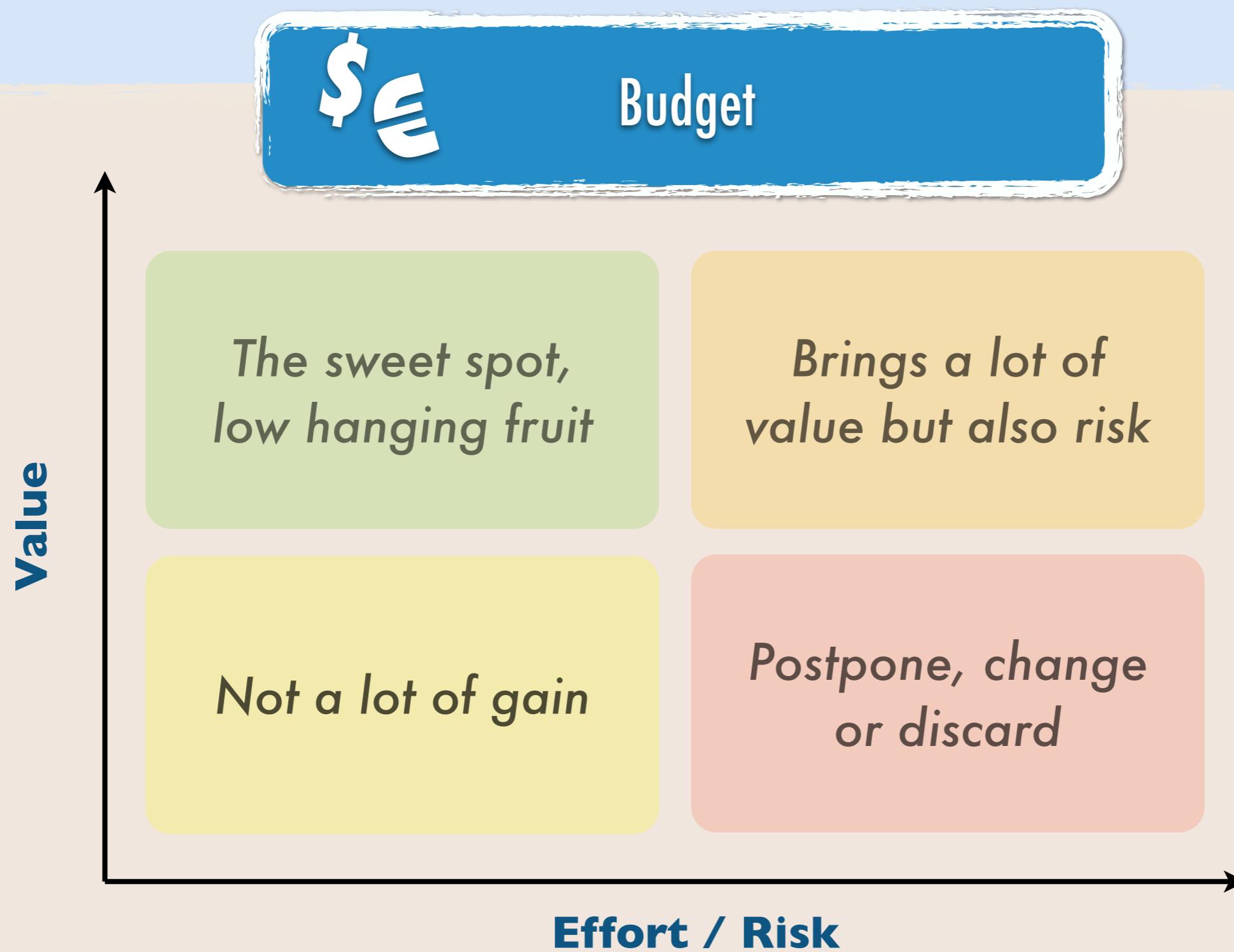
Complexity

Familiarity

Dependency



WHY DO WE NEED THEM



WHY DO WE NEED THEM



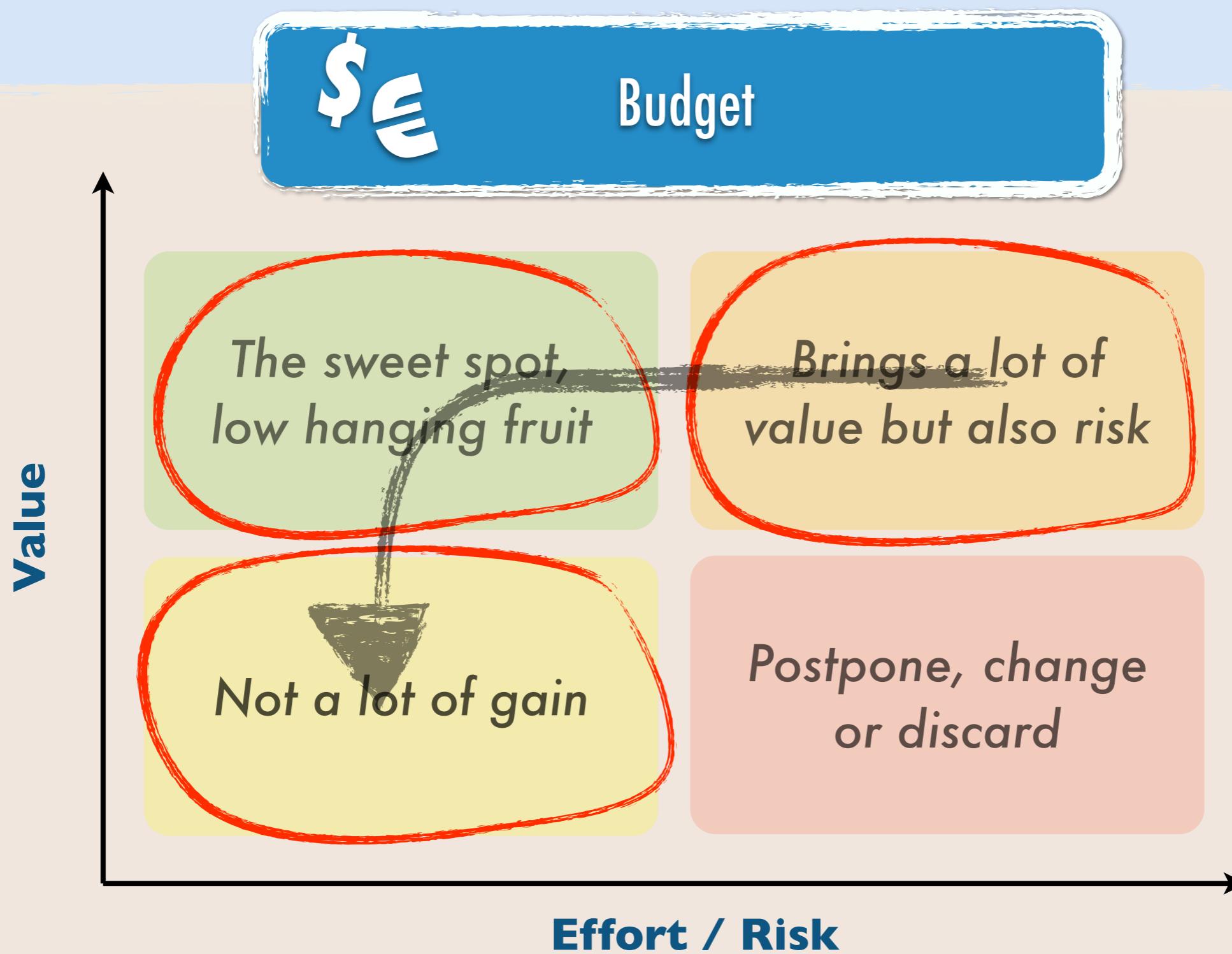
WHY DO WE NEED THEM



WHY DO WE NEED THEM



WHY DO WE NEED THEM



WHY DO WE NEED THEM



WHY DO WE NEED THEM



Communicate

Communication as in ...

WHY DO WE NEED THEM



Communicate

Communication as in ...

Are we on the
same page?



WHY DO WE NEED THEM



Communicate

*Do they
understand how
complex this
design is?*

*Do they
understand what
we're trying to
achieve?*



WHY DO WE NEED THEM



Communicate

4,500 - 5,500



2,500 - 3,500



RFP



6,500 - 7,000

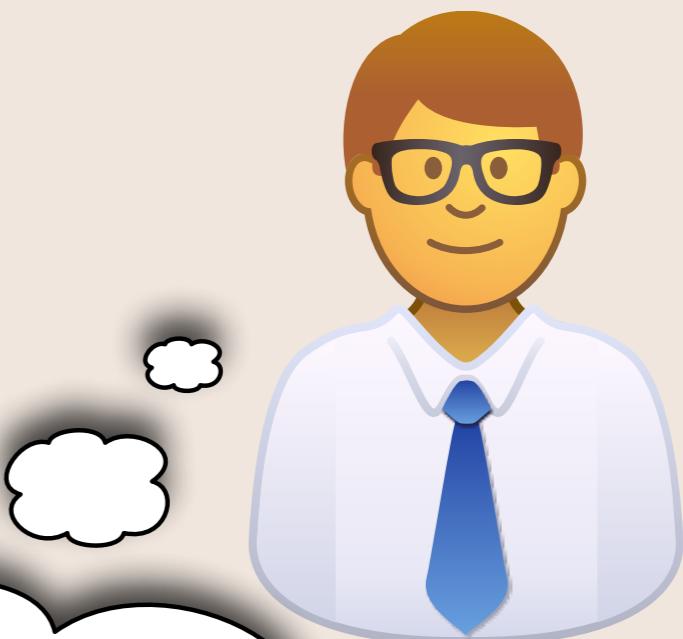
2,500??? Do they
really understand
the risks and
complexities?



WHY DO WE NEED THEM



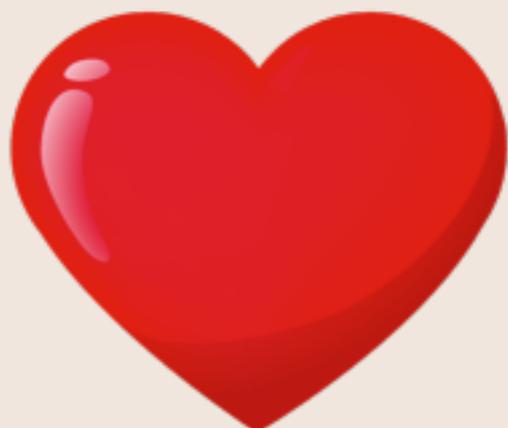
Communicate



WHY DO WE NEED THEM



Communicate



MANAGING THE UNFORESEEN

MANAGING THE UNFORESEEN

RISK

MANAGING RISK



**"Risk comes from not knowing
what you're doing."**

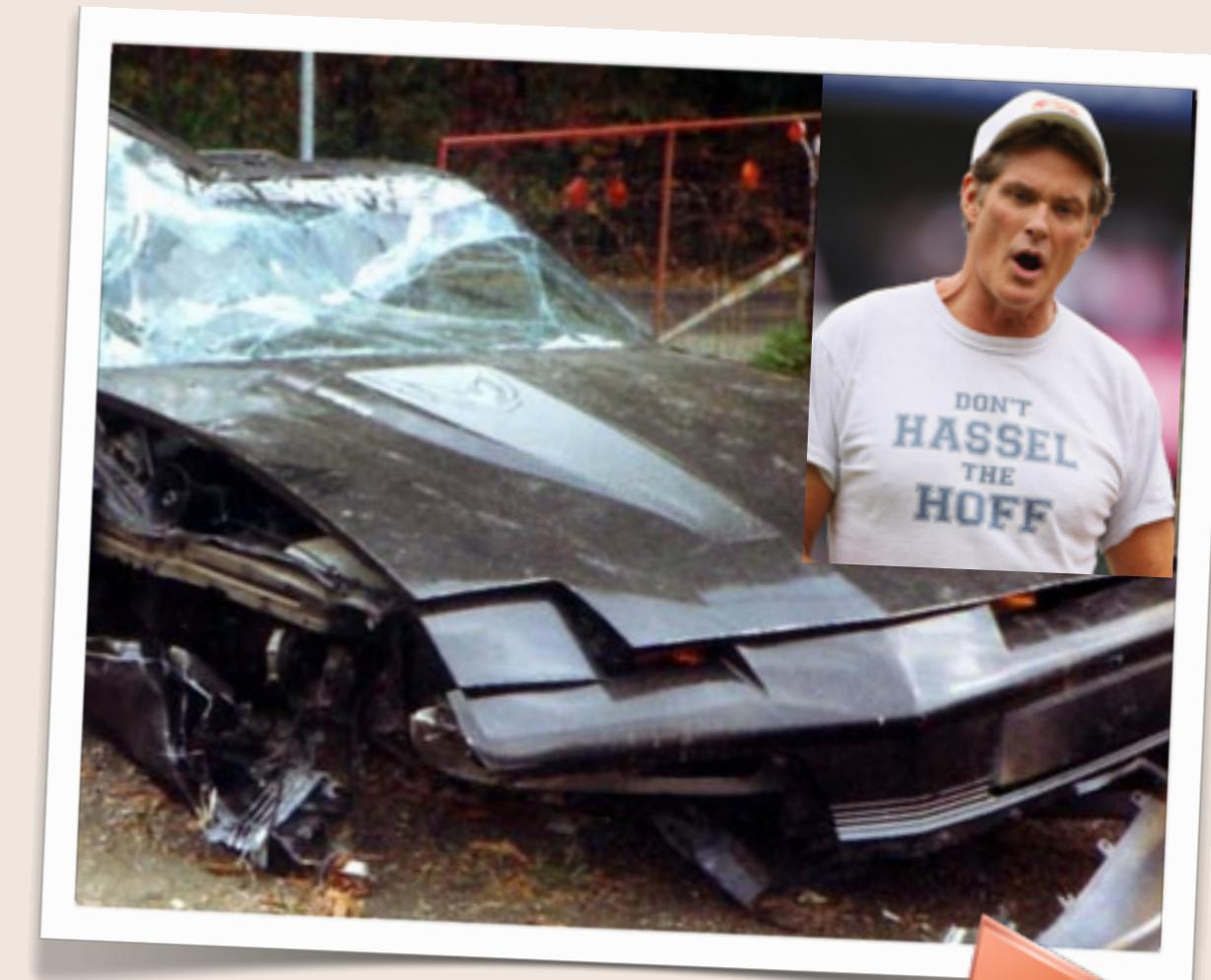
- Warren Buffett

MANAGING RISK



*What's the point
of Risk
Management?*

To help you assess risks to
your estimation, and align the
numbers to manage that risk.



Avoid car wrecks



MANAGING RISK



Identification



Assessment



Mitigation

MANAGING RISK



??

Identification



MANAGING RISK



??

Identification

The usual suspects...

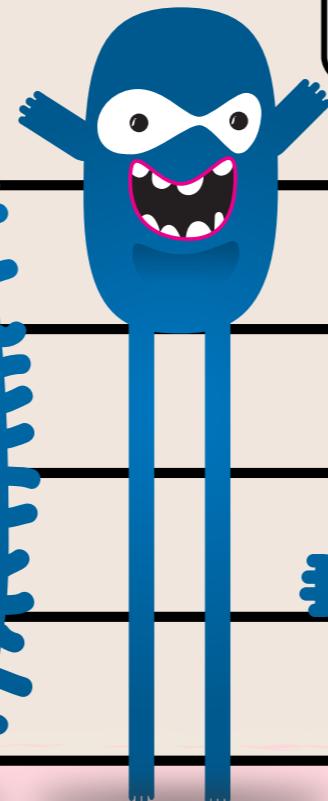
THE API IS STABLE!

HEY, NOT MY PROBLEM!

THERE'S A MODULE FOR THAT!

UI IS EASY
TO CHANGE!

ISN'T IT OOTB?



MANAGING RISK



Assessment

Composite risk rating

Impact



Probability



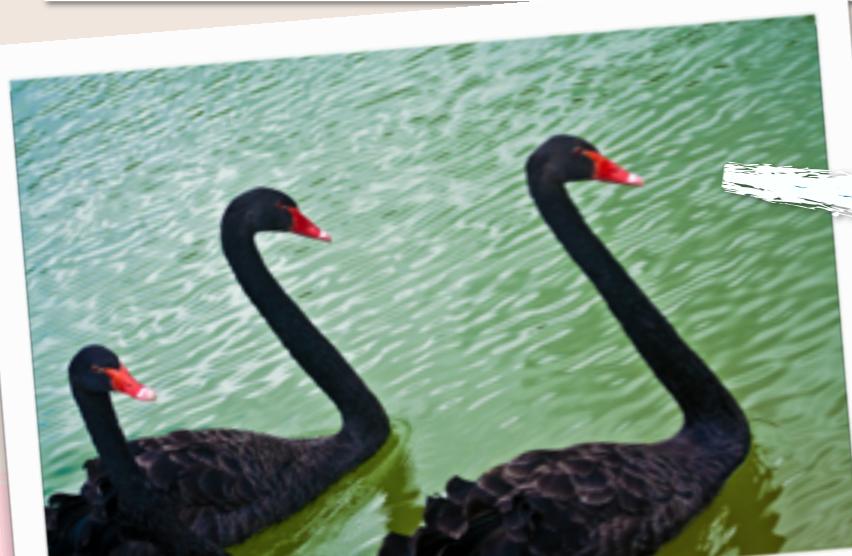
It's an opportunity to evaluate risk
in order to decide how to treat it.

MANAGING RISK



Assessment

| RISK | IMPACT | PROBABILITY | RATING |
|----------------------------|--------|-------------|--------------------|
| Shared sign on | 5 | 5 | 25 |
| Integration online booking | 4 | 4 | 16 |
| Migration legacy system | 2 | 4 | 8 |
| Asteroid hitting the Earth | 1E+21 | 0.000000001 | Skull & Crossbones |



Hey! Don't forget about us!

MANAGING RISK



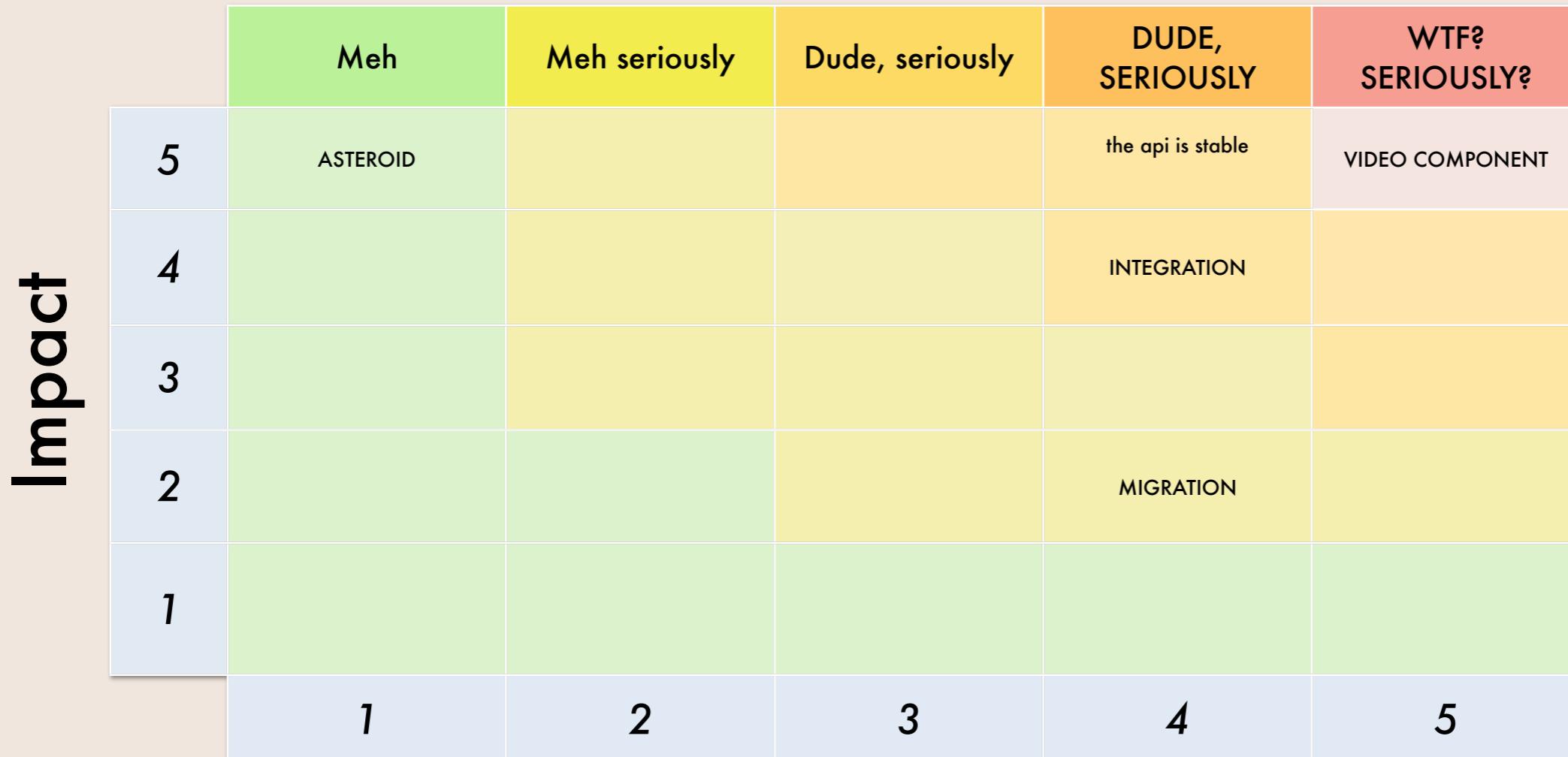
Assessment

Overall risk assessment: **Low 1-8, Medium 9-16 or High 17-25**

| LOW | | | | | | | | MEDIUM | | | | | | | | HIGH | | | | | | | | |
|--------|---|---|---|-----------|---|---|---|---------|----|----|----|--------|----|----|----|-------|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| IGNORE | | | | QUARTERLY | | | | MONTHLY | | | | WEEKLY | | | | DAILY | | | | | | | | |

Overall risk monitoring, a continual process.

MANAGING RISK

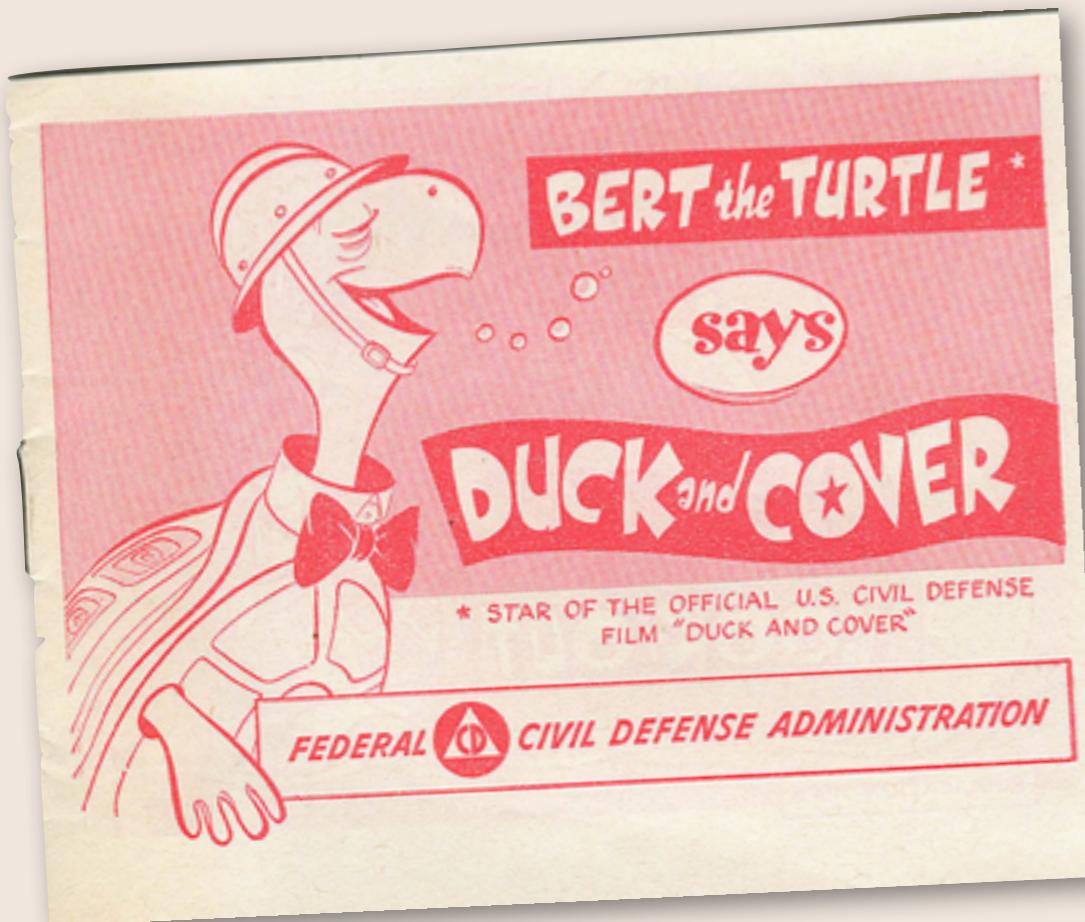


Probability

MANAGING RISK



Mitigation



Accept risk - no action

Eliminate risk

Limit risk

Share risk

ESTIMATION TECHNIQUES

ESTIMATION TECHNIQUES



Ball Park Top-Down



Weighted Estimate



Delphi Methods

ESTIMATION TECHNIQUES



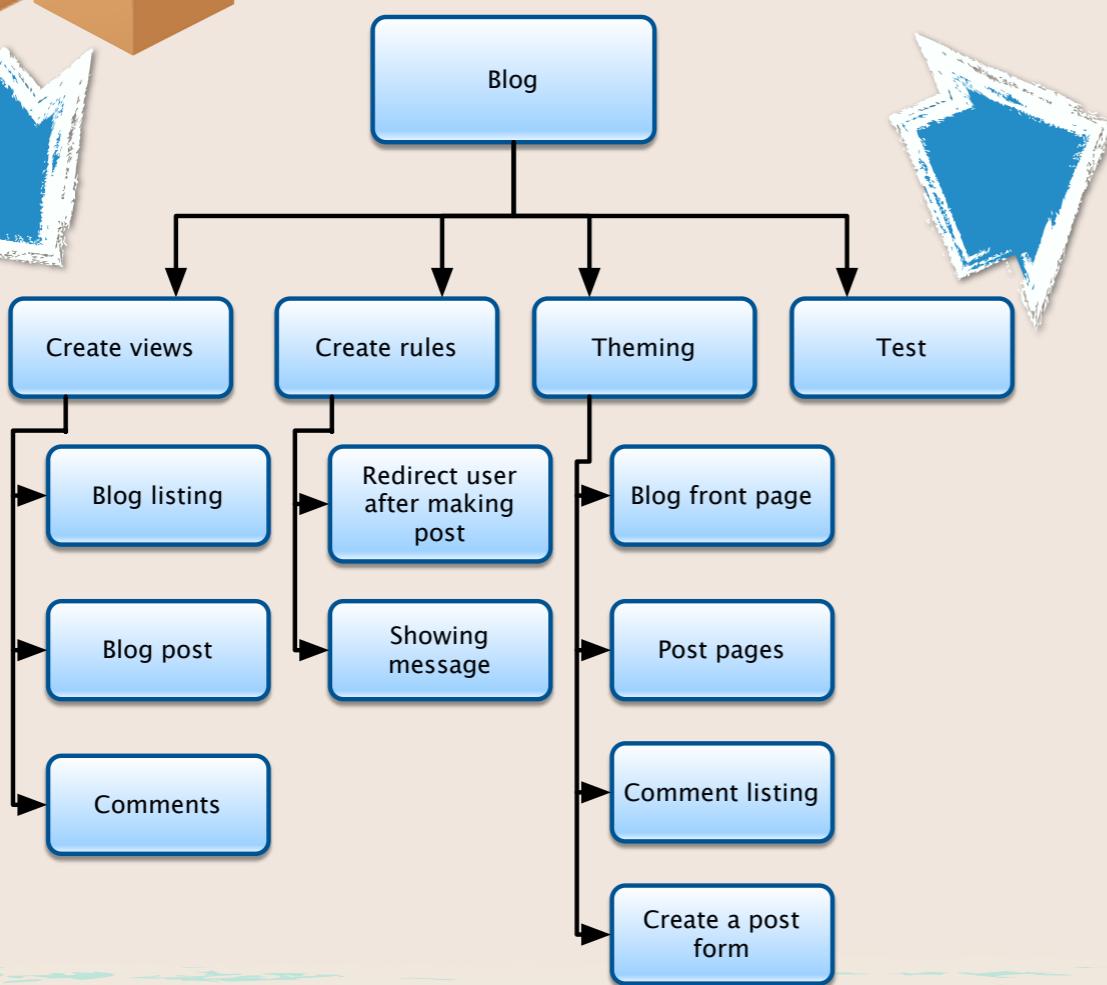
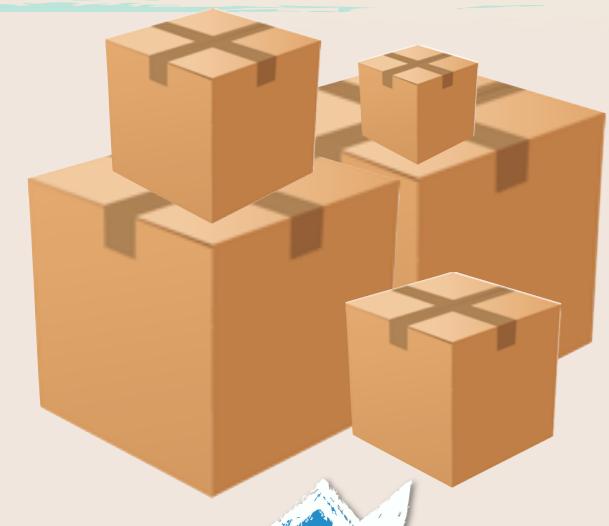
Ball Park Top-Down

Requirements

- As a user I want to be able to create blog posts
- As a user I want to be able to edit blog posts
- As a user I want to be able to un/publish blog posts



ESTIMATION TECHNIQUES

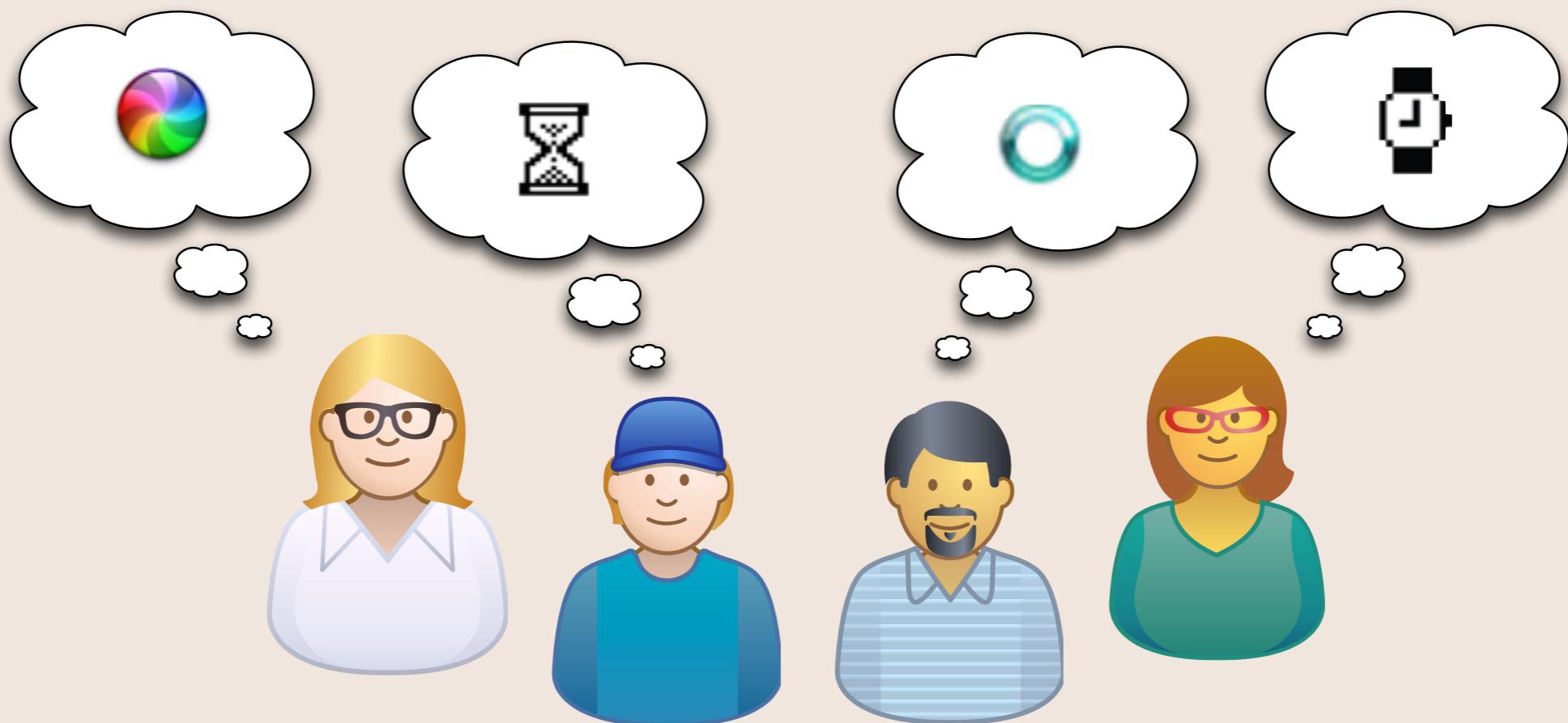


| Task | Est | Conf | Low - Hi |
|-------------------|-----|------|-----------|
| Blog listing view | 1 | 4 | 0.7 - 1.5 |
| Blog post | 1 | 4 | 0.7 - 1.5 |
| Comments | 1 | 4 | 0.7 - 1.5 |
| Redirect user | 2 | 3 | 1 - 4 |
| Show message | 2 | 3 | 1 - 4 |
| | | ... | |
| | | | 300 - 450 |

ESTIMATION TECHNIQUES



Delphi Methods



ESTIMATION TECHNIQUES

When should I use what?

Ball Park Top-Down Weighted Estimation

Delphi

When

General Strategy
Decisions > Accuracy

Estimate Ranges

Specific Features
Several Experts

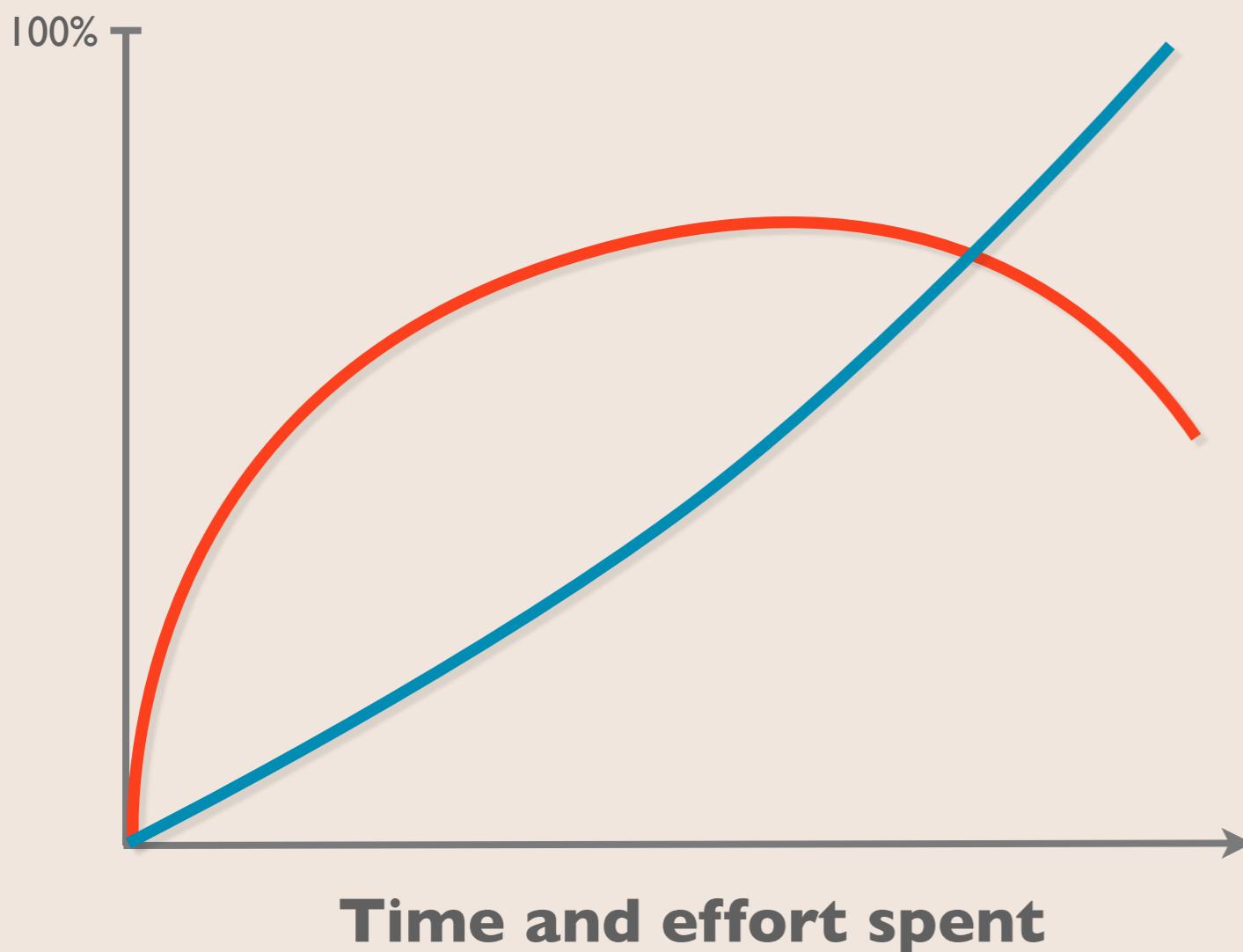
Why

Pros: Easy/Fast
Cons: Short-term
Helps for decision making

Pros: Variance Range
Cons: Takes time
Helps level-set expectations

Pros: Smarter/Accurate
Cons: Feature Specific
Helps validate theories

ESTIMATION TECHNIQUES



Actual accuracy of the estimate

vs

Estimator's confidence in the accuracy of the estimate

ESTIMATION TECHNIQUES

The don't's

- Don't play the blame game
- Don't estimate what you cannot know – requirements are like icebergs
- Don't estimate in a vacuum



TAKE AWAYS

- Management by estimate == bad idea
- Estimates should include much more than just development
- Estimates are more than just numbers
- Use risk management to avoid problems you can identify



DZIEKUJE! GRACIAS! DANKE!

Thanks everyone!

ASK AWAY

*Who's got
questions?*



TALK TO ME

JAKOB PERSSON

Twitter: **@realsolipsist**

jakob.persson@gmail.com

