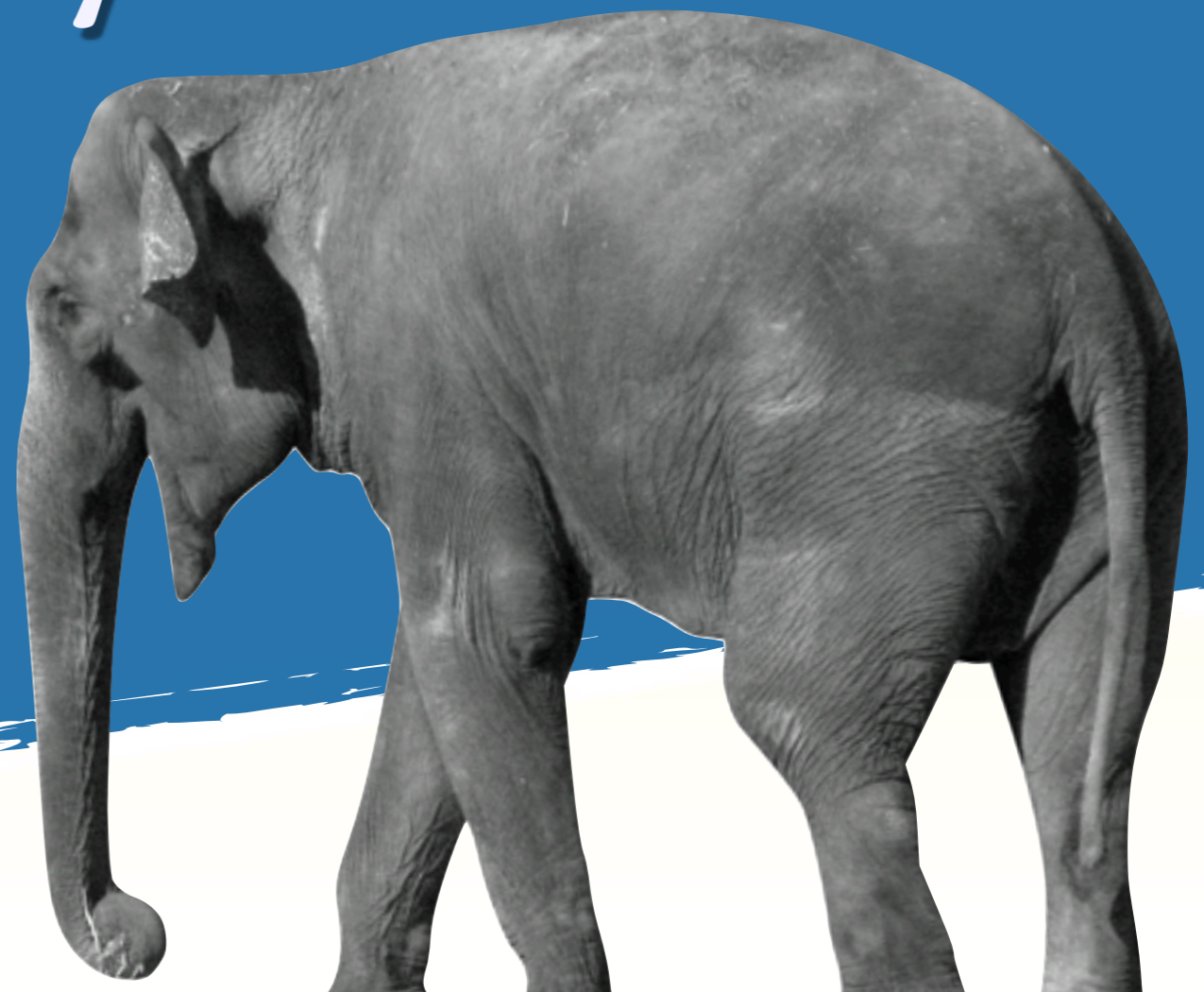


THE SCIENCE OF GUESSING

*Drupal Estimation  
Techniques*

FROM

*Project  
Managers*



AS PRESENTED AT DRUPALCAMP WROCLAW ON APRIL 13 2013

# 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,*

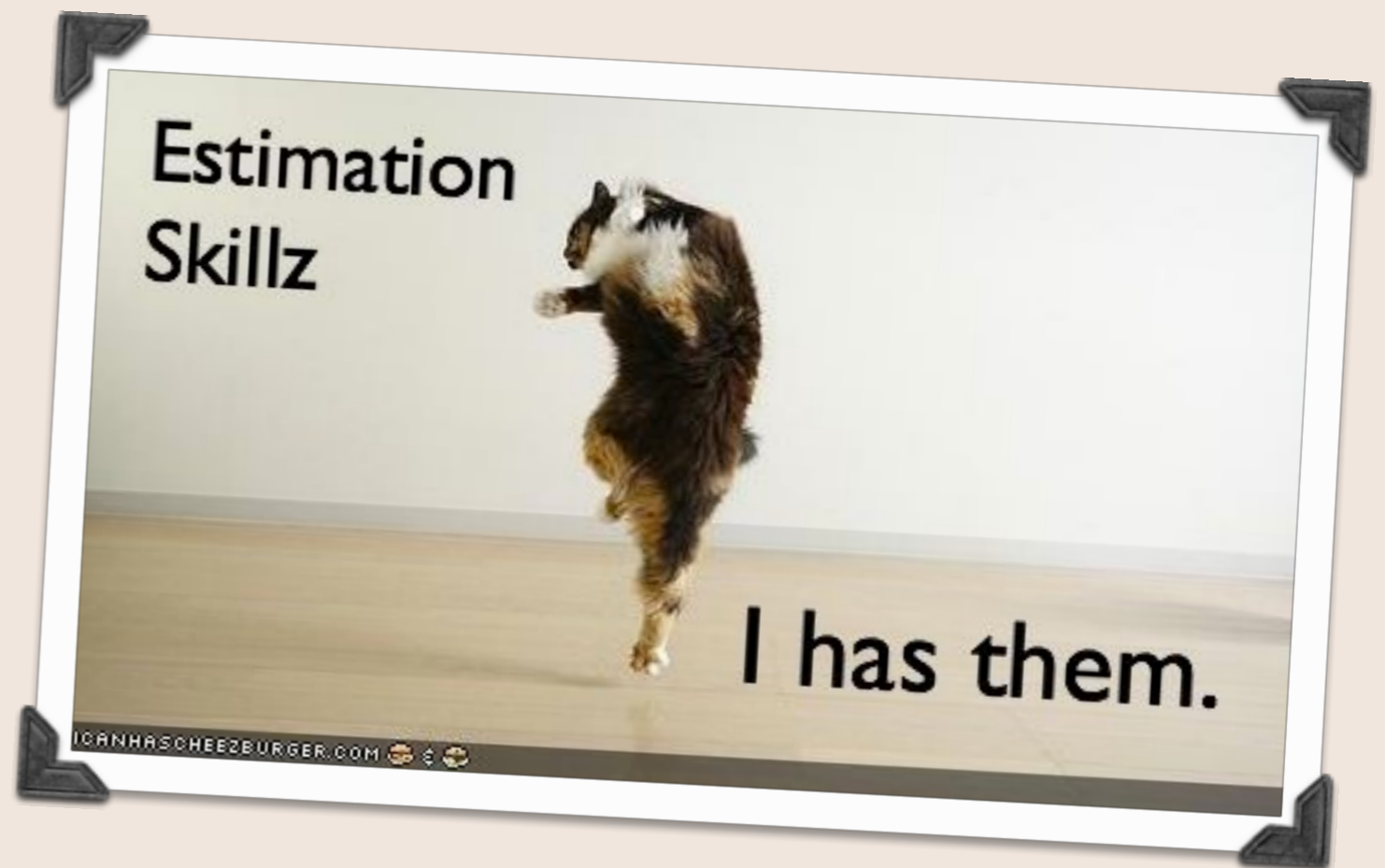
**You've come to the  
right place!**

# 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 the 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.*

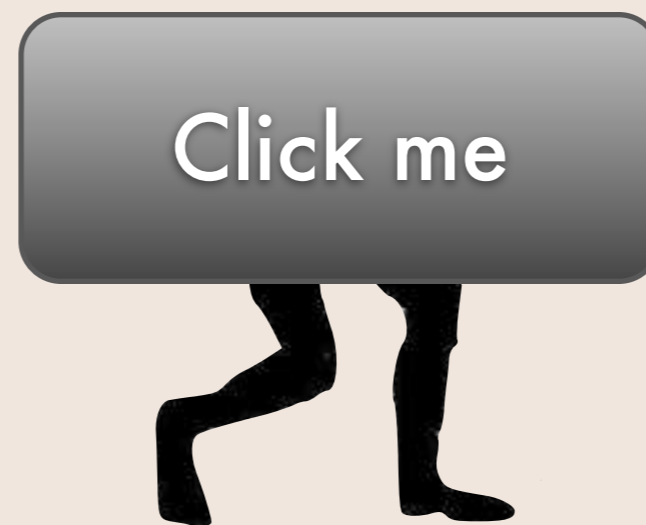
- Summary
- Rationale
- Users
- Preconditions
- Default events
- Alternative sequence



<http://www.stellman-greene.com/2009/05/03/requirements-101-user-stories-vs-use-cases/>

- ✓ 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.



April

May

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

- ✓ Theming
- ✓ Development/config

<html>

<?php

The "real" work?

hook\_form\_alter()

.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



✓ 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

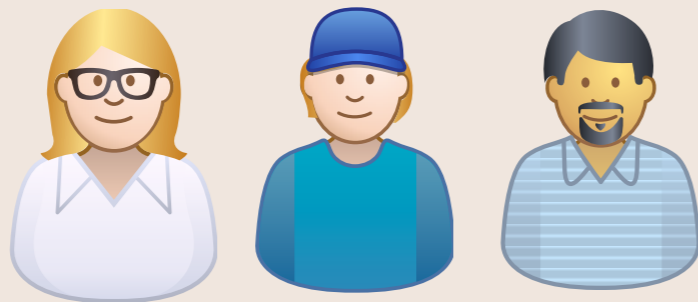


Plan

# WHY WE NEED ESTIMATES

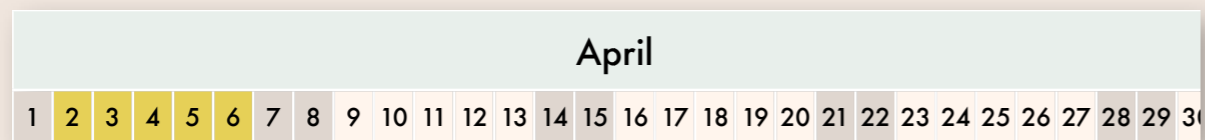


Plan



Choose a team

*then*



Block their time  
based on estimates

# WHY WE NEED ESTIMATES



Plan

# WHY WE NEED ESTIMATES

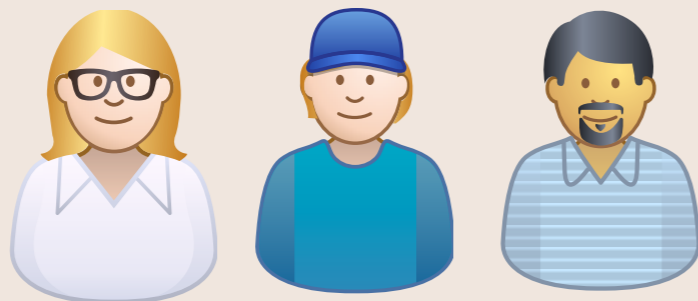


Plan



Get a deadline...

*then*



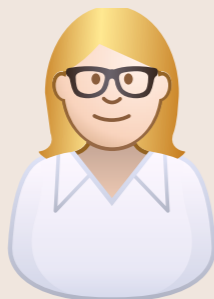
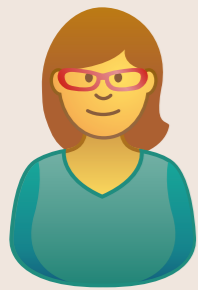
Choose a team

# WHY WE NEED ESTIMATES

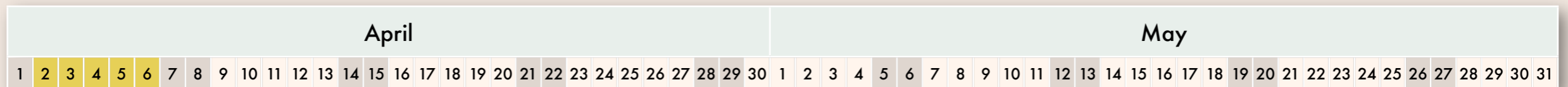


Plan

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



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



# WHY WE NEED ESTIMATES



Plan

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

Woops....

**AVAILABILITY**

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

April

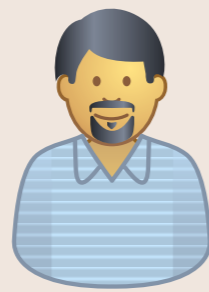
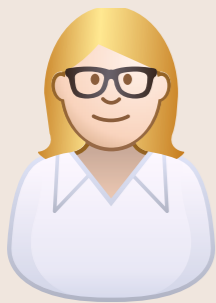
May

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



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



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



# WHY WE NEED ESTIMATES



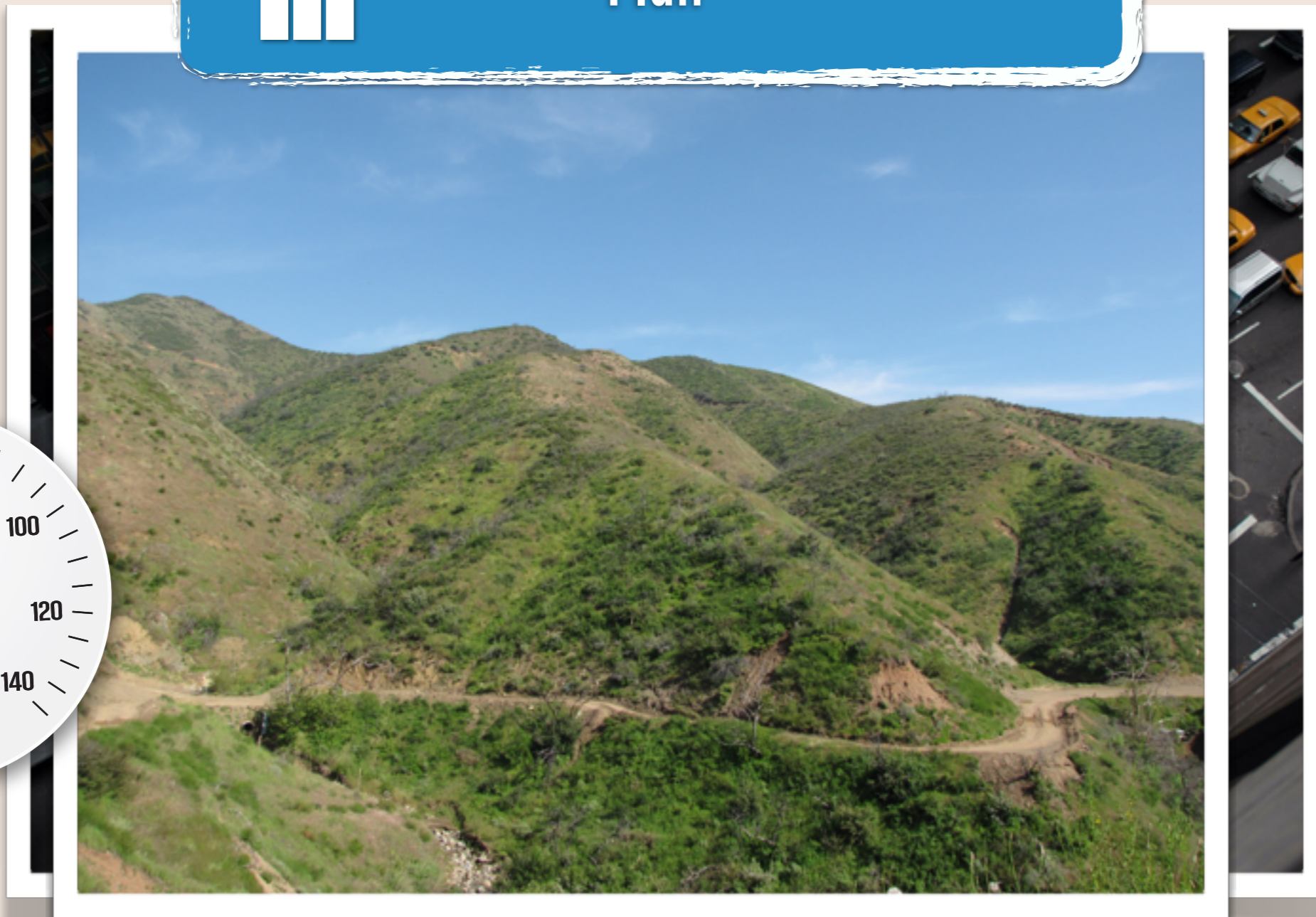
Plan



# WHY WE NEED ESTIMATES



Plan



# WHY WE NEED ESTIMATES



Plan



# WHY WE NEED ESTIMATES



Plan

*Even the best laid plans...*

Project A

Project B

Project C

| 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 |
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*"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



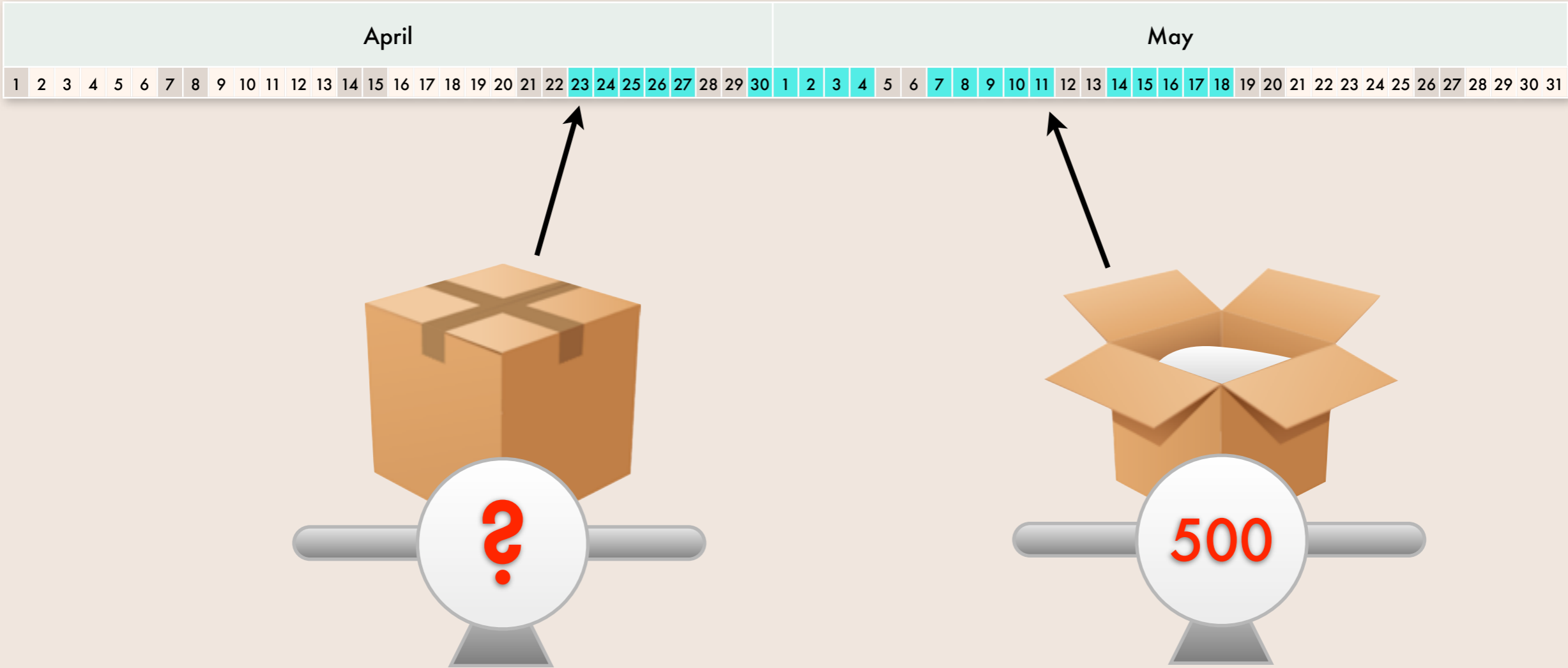
Budget



*“stuff customer wants”*

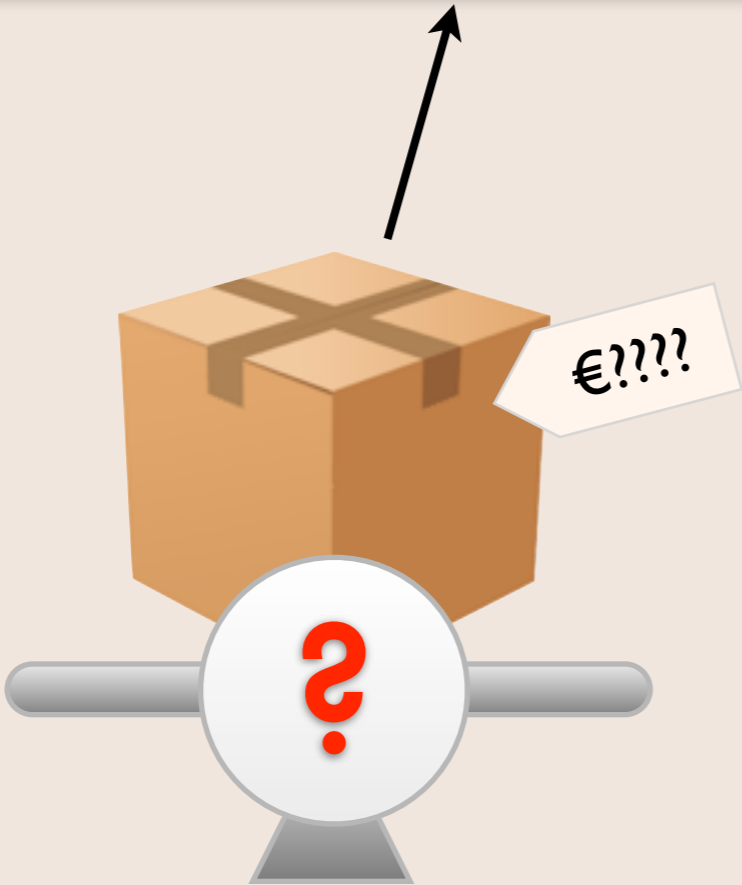
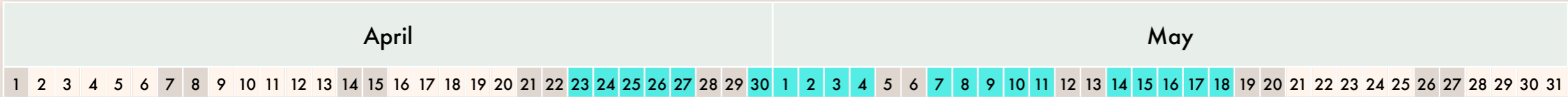
*“customer’s budget”*

# WHY DO WE NEED THEM



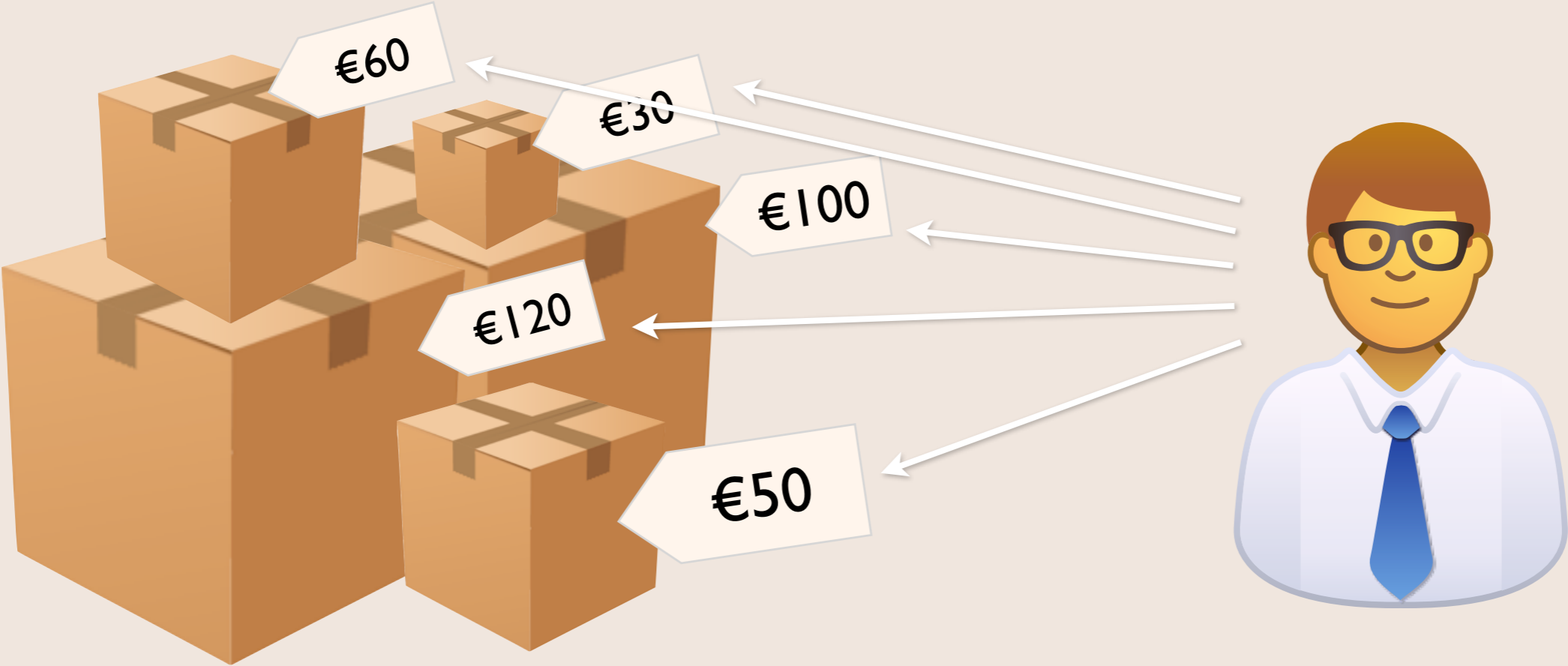
# WHY DO WE NEED THEM

## \$€ Budget



# WHY DO WE NEED THEM

**\$€ Budget**





# WHY DO WE NEED THEM

\$€

Budget



# WHY DO WE NEED THEM

\$€

Budget



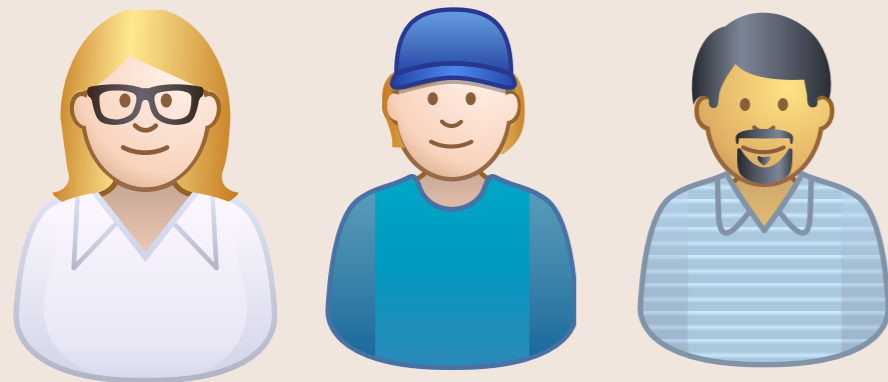
# WHY DO WE NEED THEM

\$€

Budget

We *think* this is accurate...

I'm sure!



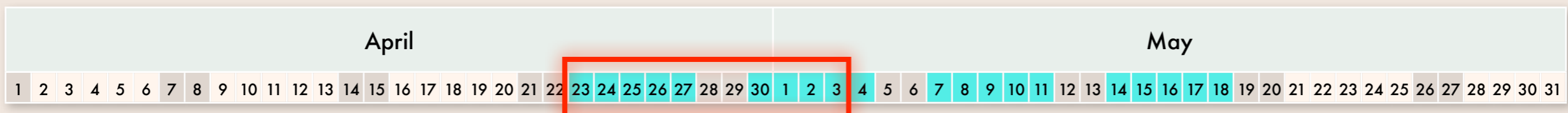
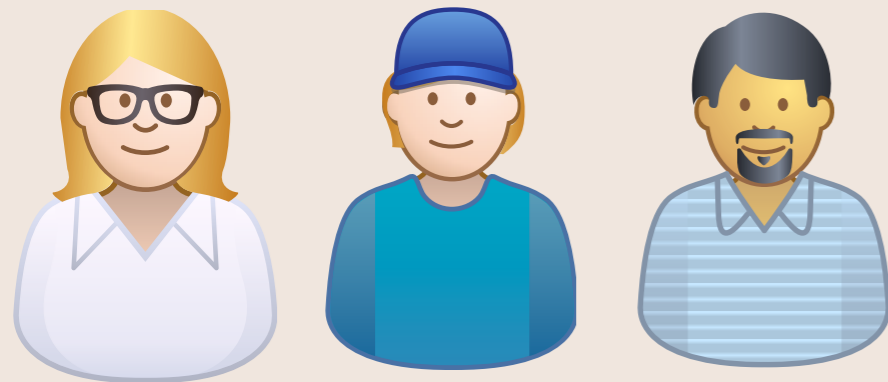
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\$€

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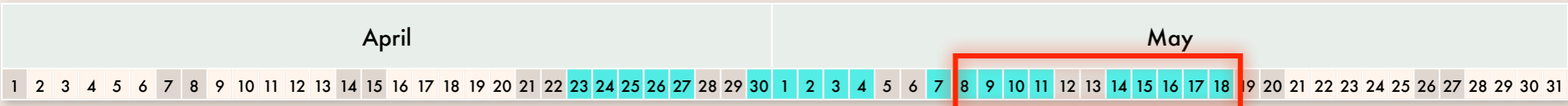
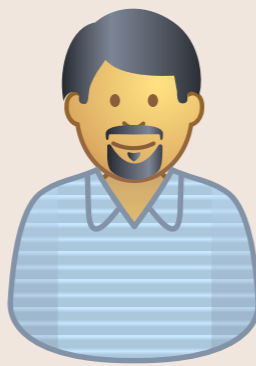
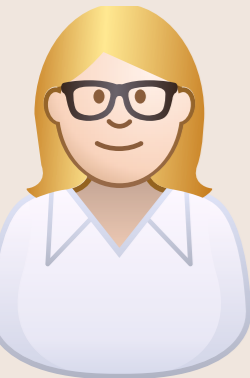
# WHY DO WE NEED THEM

\$€

Budget

We *know* this is accurate...

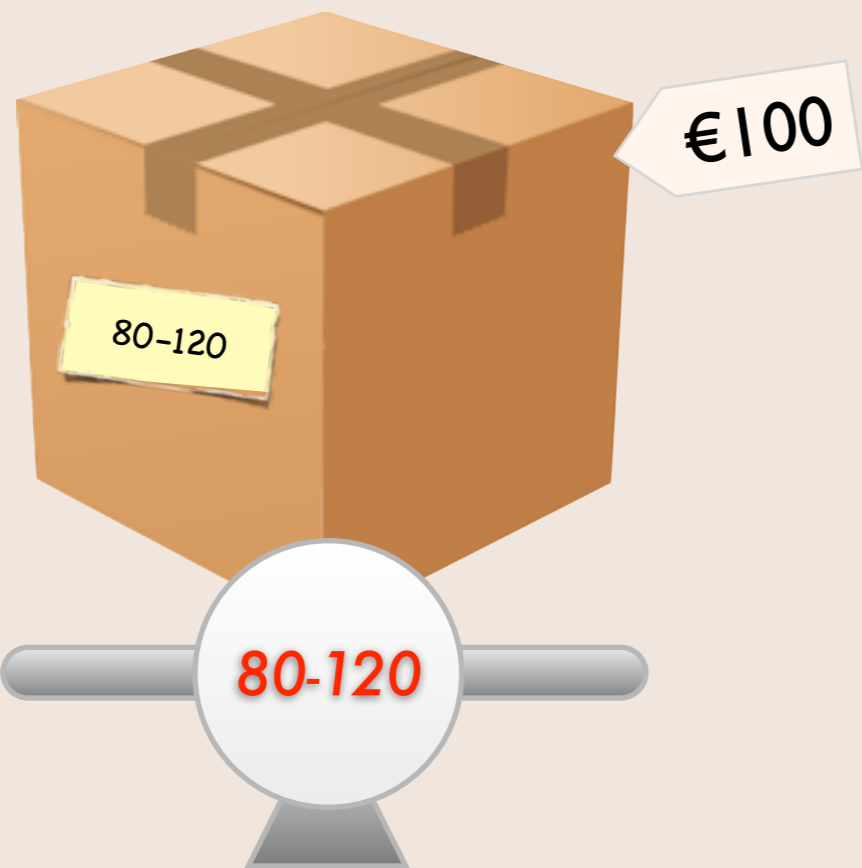
I'm sure!



# WHY DO WE NEED THEM



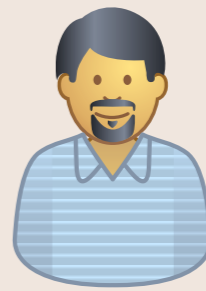
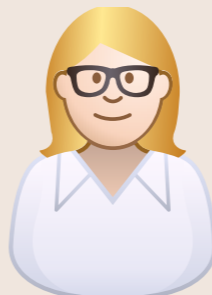
Budget



Complexity

Familiarity

Dependency



# WHY DO WE NEED THEM



Budget

Value

*The sweet spot,  
low hanging fruit*

*Brings a lot of  
value but also risk*

*Not a lot of gain*

*Postpone, change  
or discard*

Effort / Risk

# WHY DO WE NEED THEM



Budget

Value

*The sweet spot,  
low hanging fruit*

*Brings a lot of  
value but also risk*

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# WHY DO WE NEED THEM



Budget

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Effort / Risk

# WHY DO WE NEED THEM



Budget

Value

*The sweet spot,  
low hanging fruit*

*Brings a lot of  
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*Not a lot of gain*

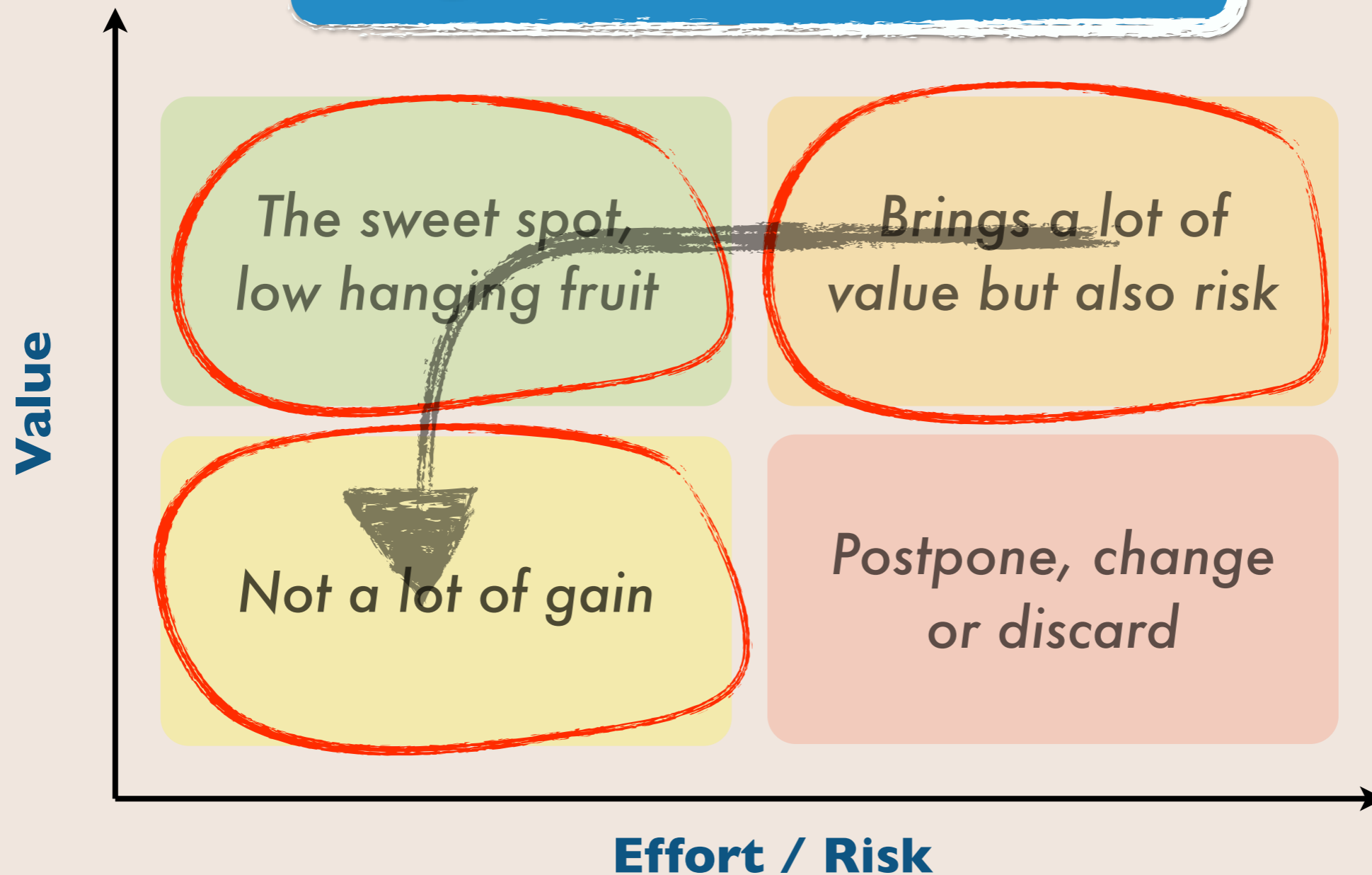
*Postpone, change  
or discard*

Effort / Risk

# WHY DO WE NEED THEM

\$€

Budget



# WHY DO WE NEED THEM

\$€

Budget



# 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



4,500 - 5,500

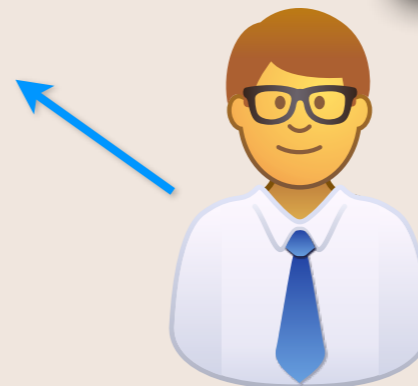
2,500 - 3,500

2,500???

*Do they really understand the risks and complexities?*

RFP

6,500 - 7,000





# WHY DO WE NEED THEM



# WHY DO WE NEED THEM



Communicate



# MANAGING THE UNFORESEEN

**MANAGING THE UNFORESEEN**

**RISK**

# MANAGING RISK



**“Risk comes from not knowing what you’re doing.”**

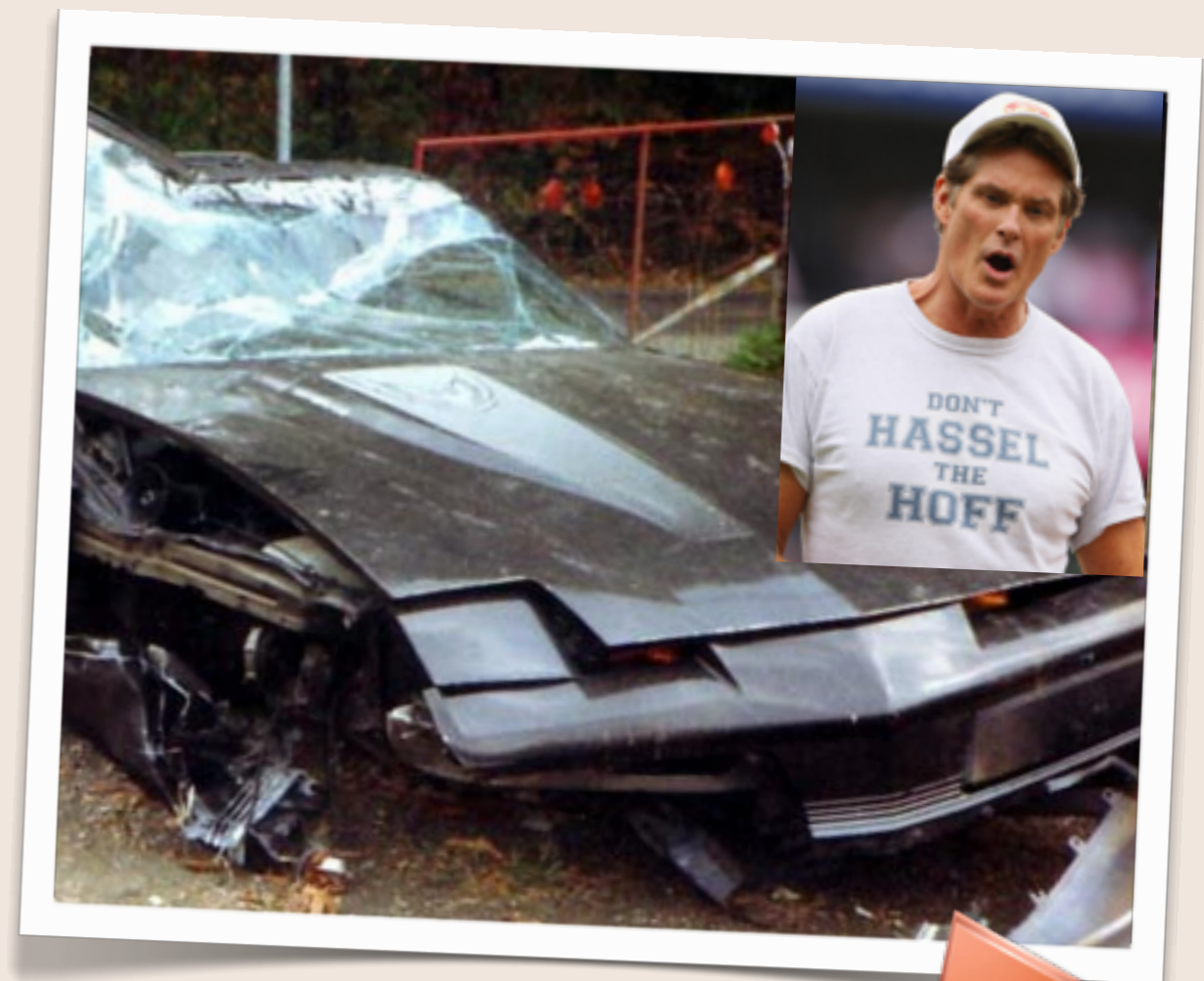
*- Warren Buffett*

# 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



**I can see no way in which this carefully laid plan could ever fail.**

ICANHASCHEEZBURGER.COM 🍔 🍷 🍷



# MANAGING RISK



## ?? Identification

*The usual suspects...*

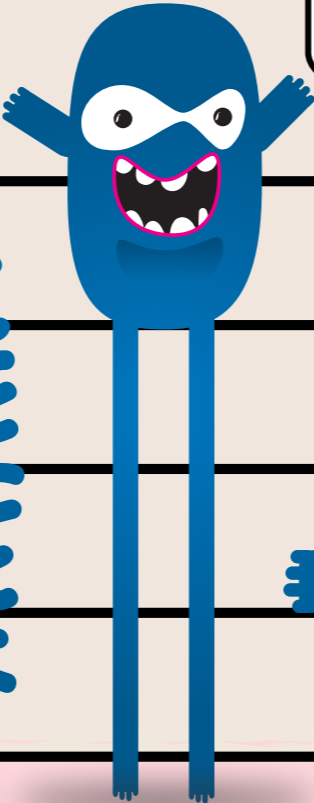
UI IS EASY TO CHANGE!



THE API IS STABLE!



HEY, NOT MY PROBLEM!



ISN'T IT OOTB?




THERE'S A MODULE FOR THAT!



# MANAGING RISK



 Assessment

*Composite risk rating*

Impact

Probability


 ×  = 8

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

# MANAGING RISK



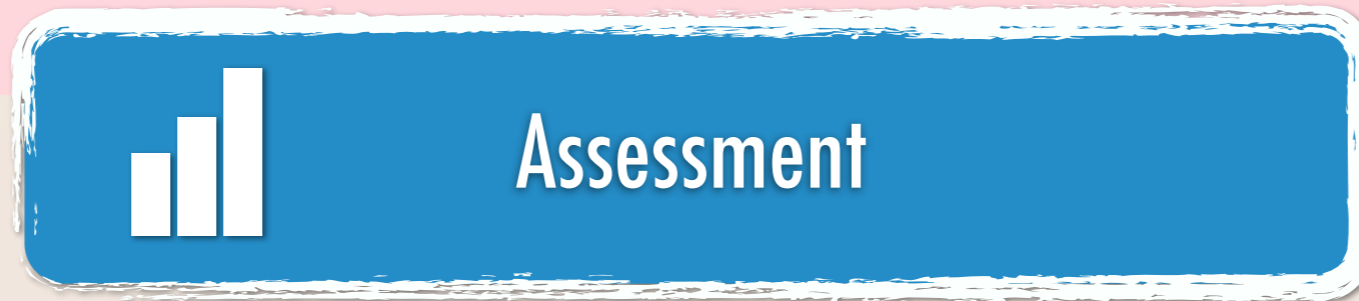
## Assessment

| 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  | 0.0000000001 |  |



Hey! Don't forget about us!

# MANAGING RISK



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



## Assessment

|   | Meh      | Meh seriously | Dude, seriously | DUDE, SERIOUSLY   | WTF? SERIOUSLY? |
|---|----------|---------------|-----------------|-------------------|-----------------|
| 5 | ASTEROID |               |                 | the api is stable | VIDEO COMPONENT |
| 4 |          |               |                 | INTEGRATION       |                 |
| 3 |          |               |                 |                   |                 |
| 2 |          |               |                 | MIGRATION         |                 |
| 1 |          |               |                 |                   |                 |
|   | 1        | 2             | 3               | 4                 | 5               |

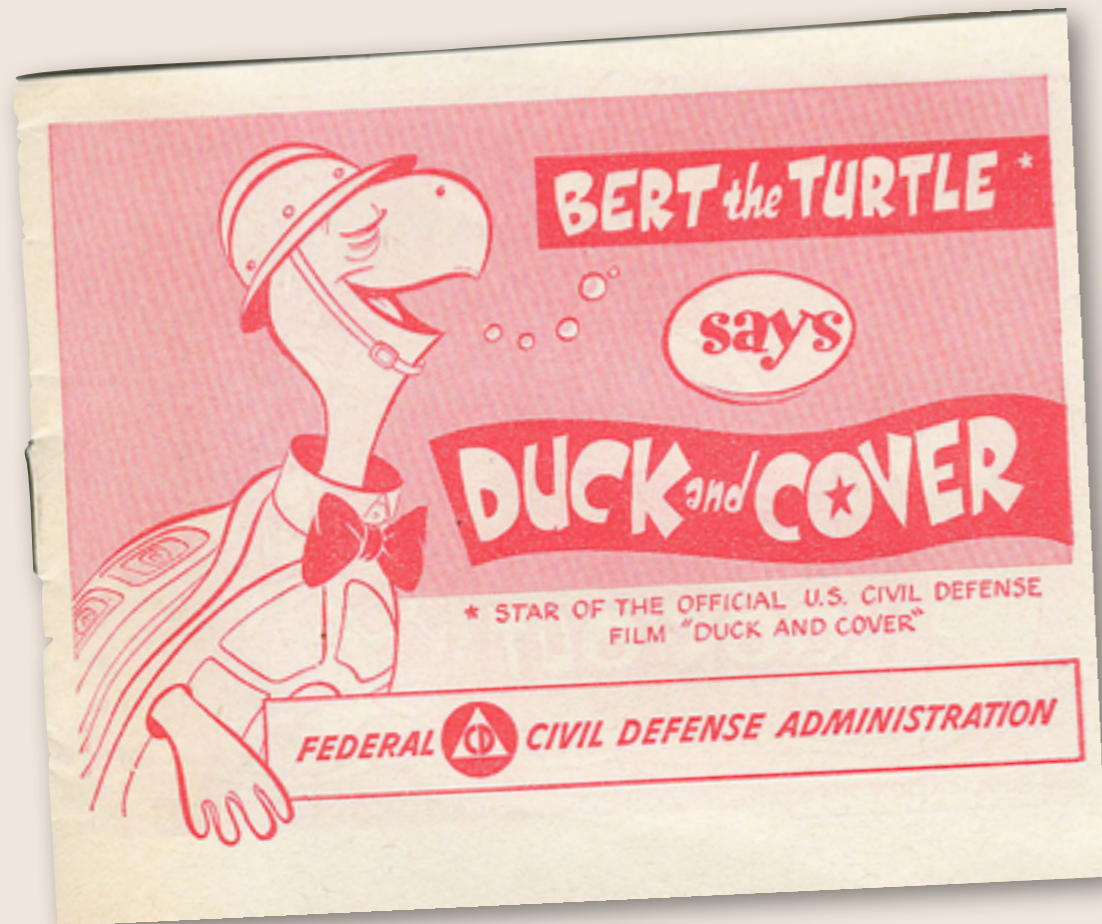
Impact

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



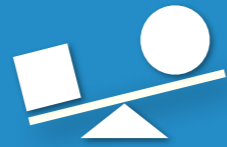
## Ball Park Top-Down

### Requirements

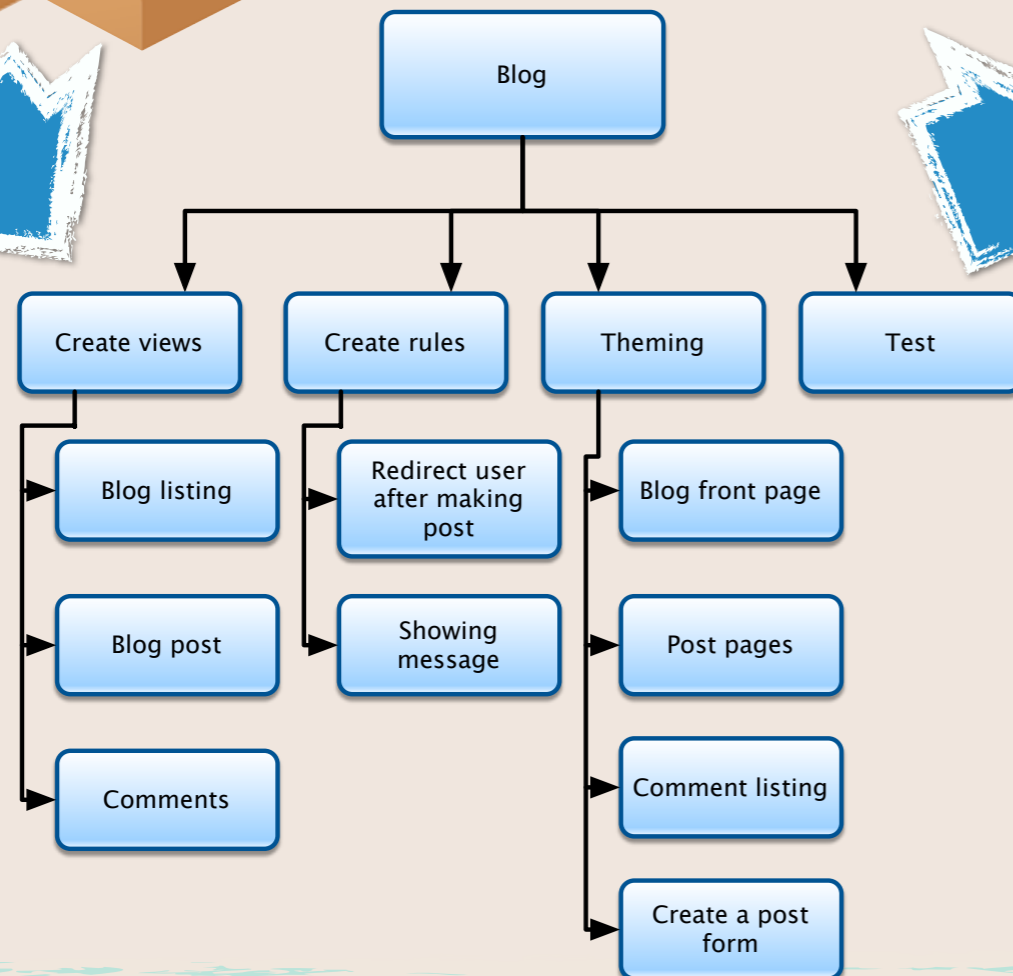
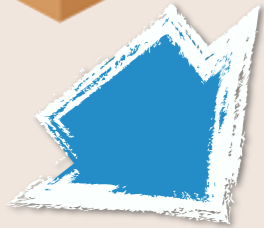
- As a user I want to be able to create blog posts
- As a user I want to be able to edit blog posts
- As a user I want to be able to un/publish blog posts



# ESTIMATION TECHNIQUES



## Weighted Estimate

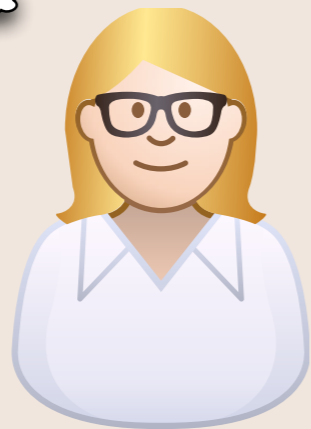
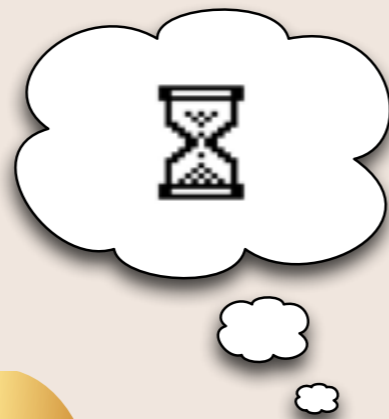


| Task              | Est | Conf | Low - Hi  |
|-------------------|-----|------|-----------|
| Blog listing view | 1   | 4    | 0.7 - 1.5 |
| Blog post         | 1   | 4    | 0.7 - 1.5 |
| Comments          | 1   | 4    | 0.7 - 1.5 |
| Redirect user     | 2   | 3    | 1 - 4     |
| Show message    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

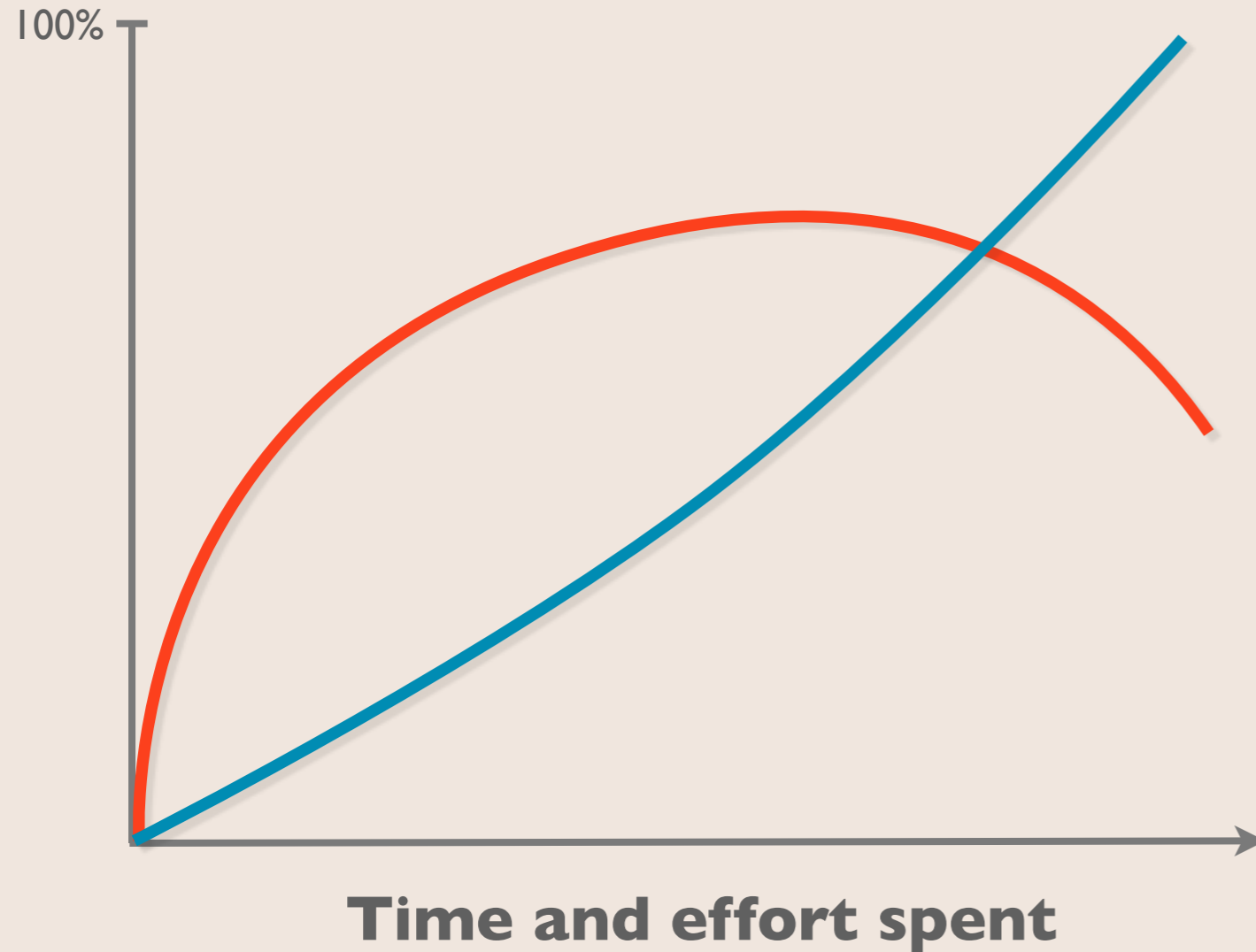
### **Why**

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](mailto:jakob.persson@gmail.com)**

