The Science of Guessing - Drupal Estimation Techniques from Project Managers
Who are these people?

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D8 Project Liaison, Project Managing since 2005, Drupal since 2010, Working in IT since 2000

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Co-founder at Wunderkraut, being doing Drupal since 2005

Mattias Axelsson
CEO and co-founder, Happiness Drupal agency

Introductions
Introductions

Tweet, Tweet, Tweedly-deet...

Questions & comments?
#drestimate
Why You Are Here
When a client or colleague asks you for an estimate, what’s your initial reaction?
When a client or colleague asks you for an estimate, what’s your initial reaction?

Is it THIS?

YOU MAKE KITTY SCARED
When a client or colleague asks you for an estimate, what’s your initial reaction?

Or... Maybe This?

Sad kitteh
is sad
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!
At the end of this presentation, we want you to feel like this when asked for an estimate

We’ll cover:

- What an estimate is
- What (not) to use them for
- What they are affected by
- How an estimate is done
- Answers to your questions
What’s an estimate?
What’s an estimate?

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

– Wikipedia
What’s an estimate?

Burning questions

What’s in an estimate? What advice can you give me?
What’s an estimate?

“How to bake a pie”

- Requirements clarification
- Use cases
- UI refinement
- Theming
- Development/config
- Automated testmaking
- Testing
- Bugfixing
- Training/doc
- Deployment
- Project management time
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

http://www.stellman-greene.com/2009/05/03/requirements-101-user-stories-vs-use-cases/
Requirements evolve and are clarified over the course of a project, and they’re often provided as UI designs.
<html>

<?php

hook_form_alter()

views

CCK

panels

Rules

$(function() {...})

.tpl.php

The “real” work?
• Test more, build more

• Automated testing saves time over the course of a project

• Tests helps identify and manage ambiguous requirements
Drupal rules, ok?

HOMEWORK (DON'T FORGET!):
- Creating content
- Editing menus
What’s this? PM? Project baloney! We don’t need a PM. We got our own PM team.

Yes but who’s gonna tell the nodes where to go?
Why do we need them?
Why do we need them?

Burning questions

How does an estimate help me plan the project?

What does an estimate communicate?

How does an estimate help me budget?
Why do we need them?

Estimates help us

- Plan
- Budget
- Communicate
Why do we need them?

Plan

Practical Example!
Why do we need them?

Plan

Practical Example!

120 hrs

32 hrs × 3 = 96 hrs

96 hrs × 0.25 = 24 hrs
Why do we need them?

When will it be done?

<table>
<thead>
<tr>
<th>April</th>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
<td>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</td>
</tr>
</tbody>
</table>

6.4 × 3 = 19.2 hrs per day

96/19.2 = 5 days
Why do we need them?
Why do we need them?
Why do we need them?
Why do we need them?

"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?
Why do we need them?
Why do we need them?

Practical Example!

$€ Budget
Why do we need them?

What can I get for my money?

And why is that?

What gets me the most bang for the buck?

...
Why do we need them?

Budget

"stuff customer wants"  "customer's budget"

Is this slide about COST vs VALUE?
Maybe we should have those 2 words appear on here?
Why do we need them?

Budget

<table>
<thead>
<tr>
<th>April</th>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21</td>
<td>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</td>
</tr>
</tbody>
</table>

April: 30
May: 31

$500

??

500
Why do we need them?

Budget

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

€???

€500

May

500

Why do we need them?

Budget

€60
€30
€120
€100
€50
Why do we need them?

Budget

€120
€100
€30
€60

€50

$
Why do we need them?

Budget

- Complexity
- Familiarity
- Dependency

80-120

€100

80-120
Why do we need them?

Budget

$ €
Why do we need them?

$\in$ Budget

- The sweet spot, low hanging fruit
- Brings a lot of value but also risk
- Not a lot of gain
- Postpone, change or discard
**Why do we need them?**

<table>
<thead>
<tr>
<th>Budget</th>
<th>Value</th>
<th>Effort / Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>$60</td>
<td>€30</td>
<td>10-20</td>
</tr>
<tr>
<td>€40</td>
<td>€50</td>
<td>10-20</td>
</tr>
<tr>
<td>€50</td>
<td>€60</td>
<td>30-40</td>
</tr>
<tr>
<td>€60</td>
<td>€100</td>
<td>40-60</td>
</tr>
<tr>
<td>€70</td>
<td>€120</td>
<td>80-120</td>
</tr>
</tbody>
</table>

**Budget**

**Value**

**Effort / Risk**
Why do we need them?

Budget

$  €

I'm sure!

We think this is accurate...
Why do we need them?

We think this is accurate...

I'm sure!

Budget

80-120

120
Why do we need them?

$€\quad$ Budget

We know this is accurate...

I’m sure!

<table>
<thead>
<tr>
<th>April</th>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 9 20 21 22 23 24 25 26 27 28 29 30 31</td>
</tr>
</tbody>
</table>

80-120

€120
Why do we need them?

Communicate

Practical Example!
Why do we need them?
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

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

4,500 - 5,500

2,500 - 3,500

6,500 - 7,000

RFP
Why do we need them?

Communicate

€40,000

€40,000
Why do we need them?

Communicate
What affects estimations?
What affects estimations?

RISK
“When the map and the territory don’t agree, always believe the territory.”

– Saying from the Swedish Army
Why should I care about risk so early on?

Are there common risks with Drupal?

How do I manage & communicate risk?
What affects estimation?

What’s the point of all these questions?

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

Avoid car wrecks
What affects estimation?

Risk analysis

- Identification
- Assessment
- Mitigation
What affects estimation?

Identification

I can see no way in which this carefully laid plan could ever fail.
What affects estimation?

Assessment

Composite Risk Rating

Impact × Probability = 8

It’s an opportunity to evaluate risk in order to decide how to treat it.
What affects estimation?

<table>
<thead>
<tr>
<th>RISK</th>
<th>IMPACT</th>
<th>PROBABILITY</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video component</td>
<td>5</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Integration online booking</td>
<td>4</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Migration legacy system</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Asteroid hitting the Earth</td>
<td>$1 \times 10^{+21}$</td>
<td>0.0000000001</td>
<td>4</td>
</tr>
</tbody>
</table>

**Assessment**

Hey! Don’t forget about us!

http://www.sxc.hu/photo/1338362
What affects estimation?

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

<table>
<thead>
<tr>
<th>LOW</th>
<th>MEDIUM</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>9</td>
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<tr>
<td>10</td>
<td>11</td>
<td>12</td>
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<td>21</td>
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<tr>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **IGNORE**
- **QUARTERLY**
- **MONTHLY**
- **WEEKLY**
- **DAILY**

Overall risk monitoring, a continual process.
<table>
<thead>
<tr>
<th>Impact</th>
<th>Meh</th>
<th>Meh seriously</th>
<th>Dude, seriously</th>
<th>DUDE, SERIOUSLY</th>
<th>WTF? SERIOUSLY?</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>ASTEROID</td>
<td></td>
<td></td>
<td>the api is stable</td>
<td>VIDEO COMPONENT</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>INTEGRATION</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MIGRATION</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
</tbody>
</table>
What affects estimation?

Mitigation

- Accept risk - no action
- Eliminate risk
- Limit risk
- Share risk
What affects estimation?

Mitigation

FROM THE FRONT LINES

THE VIDEO COMPONENT

A TRUE RISK MITIGATION STORY
What affects estimation?

THE USUAL SUSPECTS

- THE API IS STABLE!
- UI IS EASY TO CHANGE!
- HEY, NOT MY PROBLEM!
- ISN’T IT OOTB?
- THERE´S A MODULE FOR THAT!
Drupal Estimation Techniques
Burning questions

What techniques should I use?

When should I use what?

How do they work?
“Estimation is like a walking stick for a blind man. It won’t miraculously give you sight, but it might help you avoid walking into a wall.”

- Old Chinese proverb says
3 Example Techniques

- Ball Park Top-Down
- Weighted Estimate
- Delphi Methods
Drupal 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

Poll: how many use this? How many new it was called this?
Drupal Estimation Techniques

Weighted Estimate

<table>
<thead>
<tr>
<th>Task</th>
<th>Est</th>
<th>Conf</th>
<th>Low - Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blog listing view</td>
<td>1</td>
<td>4</td>
<td>0.7 - 1.5</td>
</tr>
<tr>
<td>Blog post</td>
<td>1</td>
<td>4</td>
<td>0.7 - 1.5</td>
</tr>
<tr>
<td>Comments</td>
<td>1</td>
<td>4</td>
<td>0.7 - 1.5</td>
</tr>
<tr>
<td>Redirect user</td>
<td>2</td>
<td>3</td>
<td>1 - 4</td>
</tr>
<tr>
<td>Show message</td>
<td>2</td>
<td>3</td>
<td>1 - 4</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>300 - 450</td>
</tr>
</tbody>
</table>

Poll: how many use this? How many knew it was called this?
Drupal Estimation Techniques

Delphi Methods

Poll: how many use this? How many knew it was called this?

Hmm... Hmm... Hmm... Hmm...
# Drupal Estimation Techniques

## When should I use what?

<table>
<thead>
<tr>
<th></th>
<th>Ball Park Top-Down</th>
<th>Delphi</th>
<th>Weighted Estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>When</strong></td>
<td>General Strategy Decisions &gt; Accuracy</td>
<td>Specific Features Several Experts</td>
<td>Estimate Ranges</td>
</tr>
<tr>
<td><strong>Why</strong></td>
<td>Pros: Easy/Fast</td>
<td>Pros: Smarter/Accurate</td>
<td>Pros: Variance Range</td>
</tr>
<tr>
<td></td>
<td>Cons: Short-term</td>
<td>Cons: Feature Specific</td>
<td>Cons: Takes time</td>
</tr>
<tr>
<td></td>
<td>Helps for decision making</td>
<td>Helps validate theories</td>
<td>Helps level-set expectations</td>
</tr>
</tbody>
</table>

---

**Drupal Estimation**

**Techniques**

**When General Strategy Decisions > Accuracy**

**Why**

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

Accuracy / Confidence vs Effort
The don’ts

• Don’t the blame game

• Don’t estimate what you cannot know – requirements are like icebergs

• Don’t in a vacuum
Take Aways

We want you to remember:

• 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

http://www.flickr.com/photos/jakeliefer/290510226/
Thanks everyone!

Please review:


Note: You need to be logged in to the DrupalCon website to rate and review sessions.
Ask away

Who’s got Questions?!
Talk to us

Shannon Vettes
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shannonvettes@gmail.com

Jakob Persson
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jakob.persson@gmail.com

Mattias Axelsson
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mattias.axelsson@happiness.se

Wait, there’s more!

Meet us tomorrow at the “Drupal PM lunch date” BoF at 11.45 to 13.00 in Athen.

You’re welcome to bring food/lunch.