The Math (and Psychology)

of scheduling, bug tracking, and triage

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Unusual Applications of Queuing Theory

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Advice, Obvious in Retrospect

that seems profound
when accompanied by fancy charts

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1. Project estimation

Much more detail: W. Edwards Deming

Ray Williams
Wired for Success

Why Goal Setting Doesn't Work

Goal setting may actually be counter productive if not a waste of time

Posted Jul 11, 2014

We have all heard this advice: Set goals if you want to accomplish anything substantial. That advice comes from personal coaches, self-help gurus, management consultants, managers and executives and is deeply imbedded in leadership practices.

In organizations, “stretch goals,” or “hairy audacious goals,” as a management motivational and performance strategy, is widely practiced. Yet, there is evidence that goal setting may actually be counter productive if not a waste of time.

-- Psychology Today

Student Syndrome

“When we used milestones, and you knew that you had two weeks to complete a step, the two weeks were yours. I, as project leader, couldn't do much to push you to finish earlier.

Moreover, if I came after one week and started to press, even inquired, you would have reacted as if I were out of line. ‘There is still a week to go, what do you want?’”

-- Critical Chain

The schedule is not the place to play psychological games.

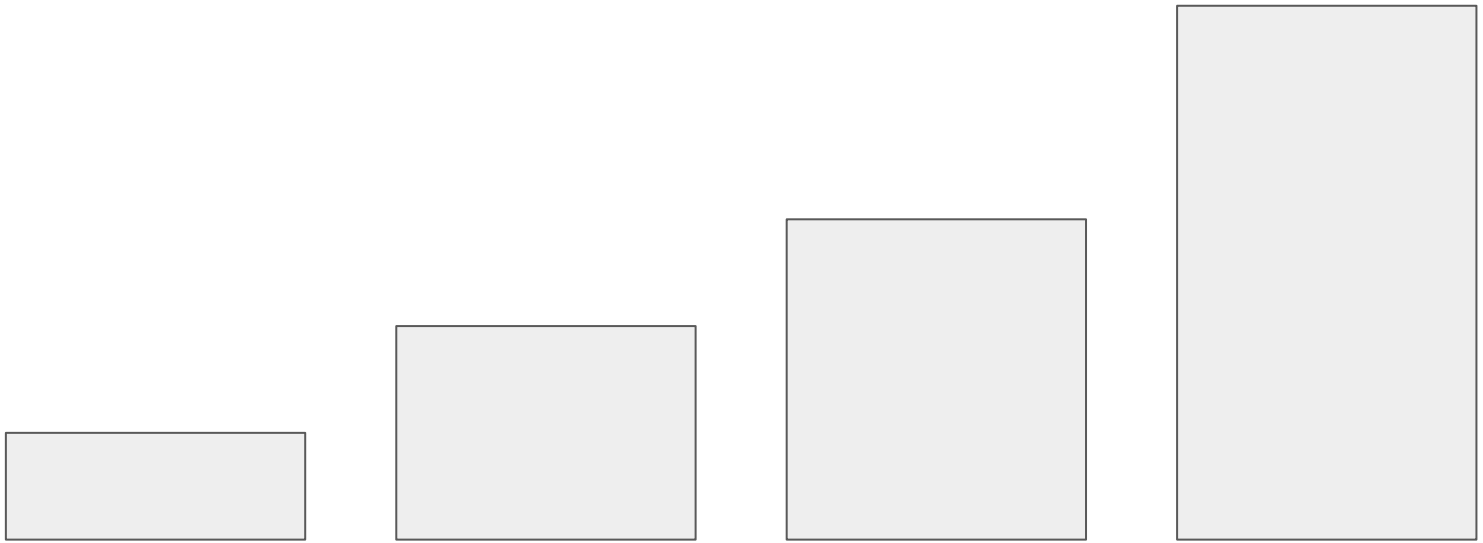
-- Joel on Software

The schedule is absolutely the place to play psychological games. But you have to play to win!

-- me

Story Points

[Estimating Like an Adult]



Story points are **ratios**

Estimating Like an Adult

- People are weirdly good at ratios
- **NOT** absolute days or hours

    ⇒ Student Syndrome and sandbagging

- **NOT** small/medium/large

    ⇒ How many smalls make a large?

- Pseudo-fibonacci sequence works well

What is a “story” anyway?

Estimating Like an Adult

- A small bit of useful functionality **delivered to a customer.**
- The customer must **actually be impacted**
  (though maybe they won’t notice, like when reducing downtime)

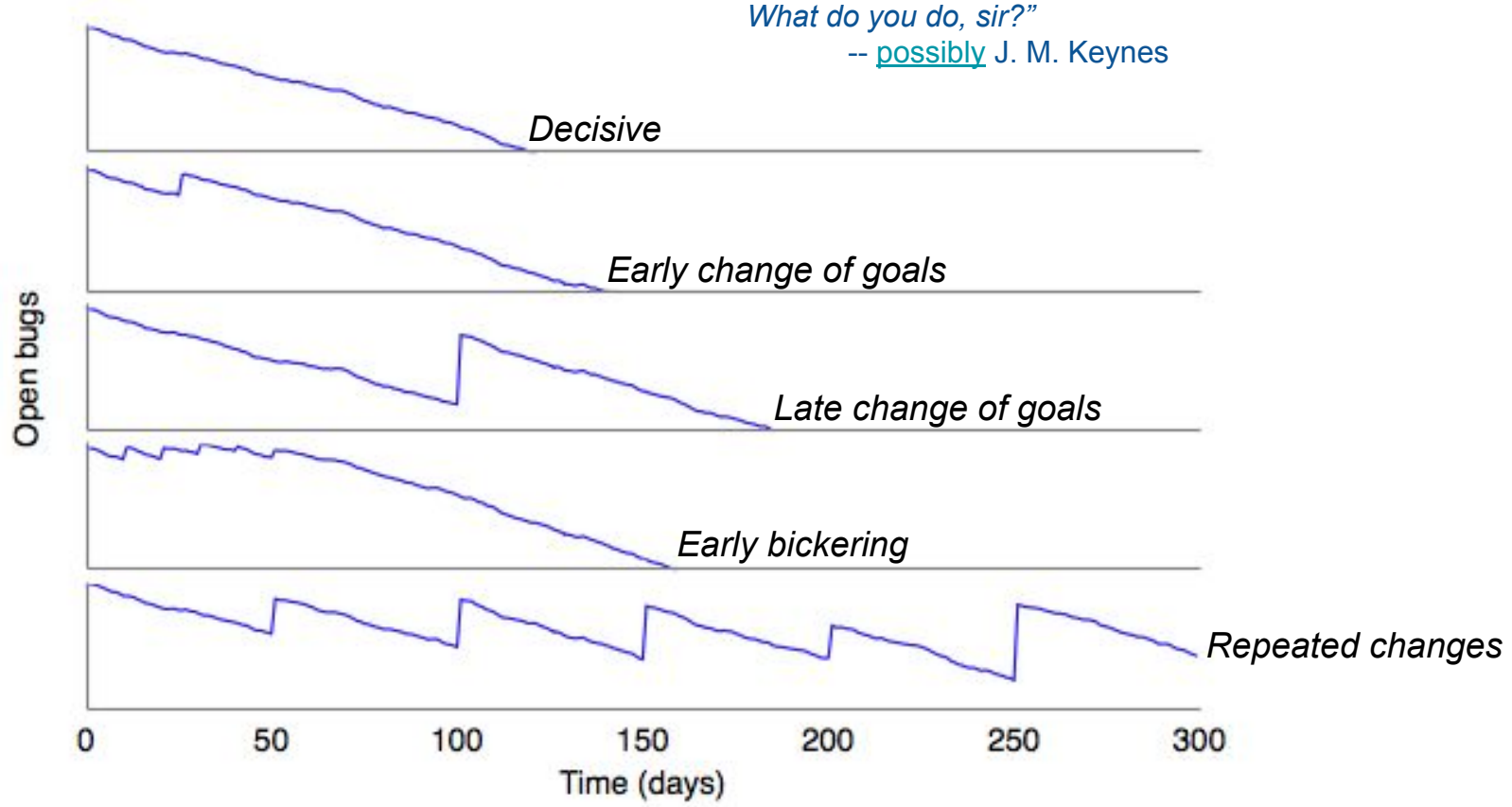
"You can’t tell a story without the main character."
(the customer)

- Not the same as a bug, task, or ticket

Strict prioritization

Discussion

"When the facts change, I change my mind. What do you do, sir?"
-- possibly J. M. Keynes



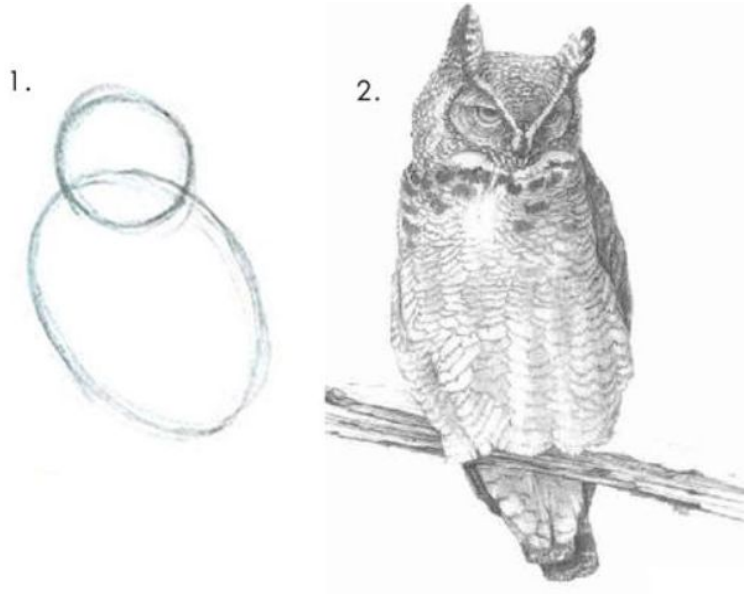
How to do project planning

Estimating Like an Adult

1. List the **sequence** and **relative size** of stories in a spreadsheet.

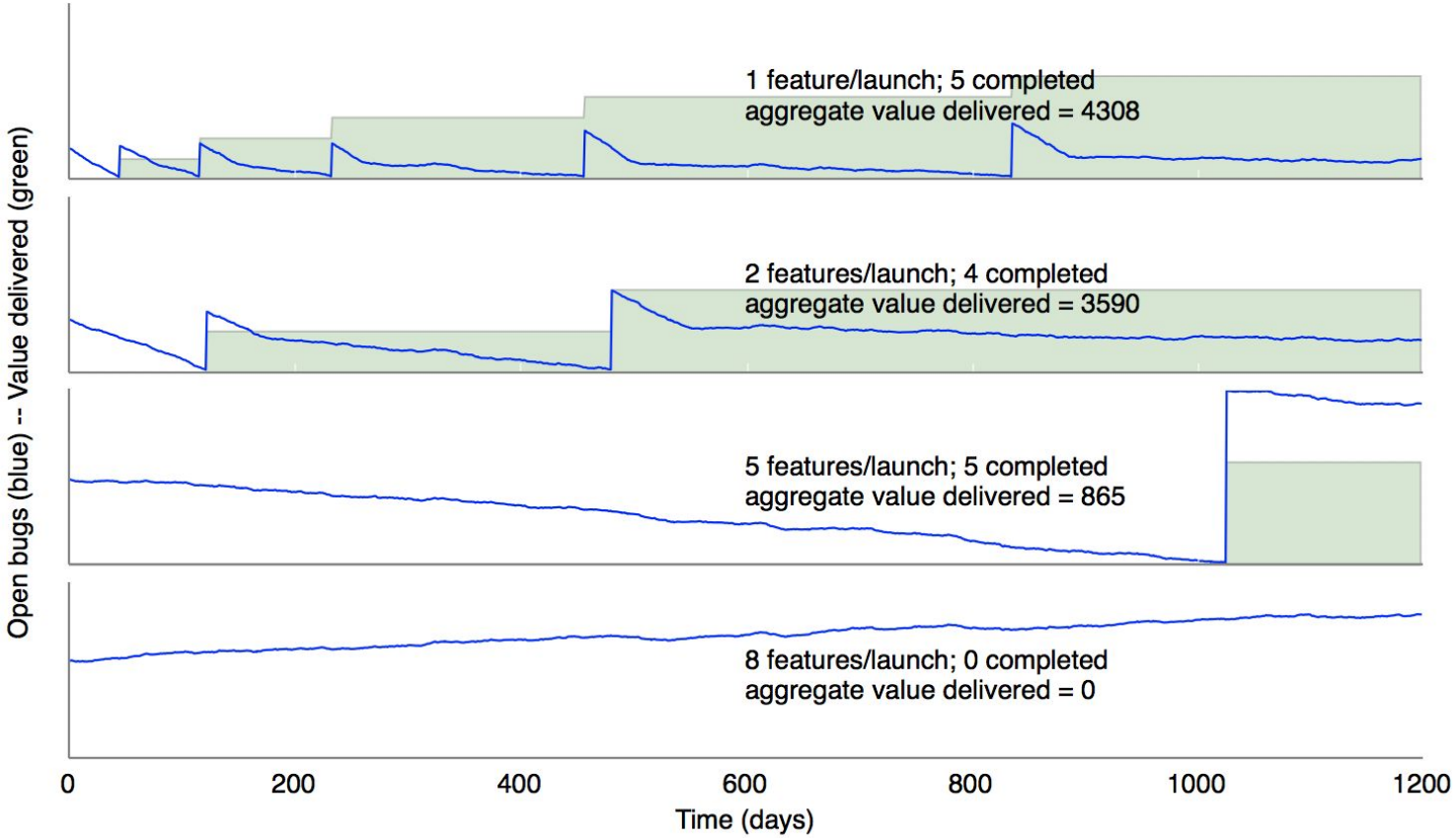
2. DO THE STORIES IN THAT ORDER.

Tools are a distraction. Stop using them. Sorry.



Restricted multitasking (Kanban)

Discussion



2. Stories are not bugs

Stories are not bugs

Stories:

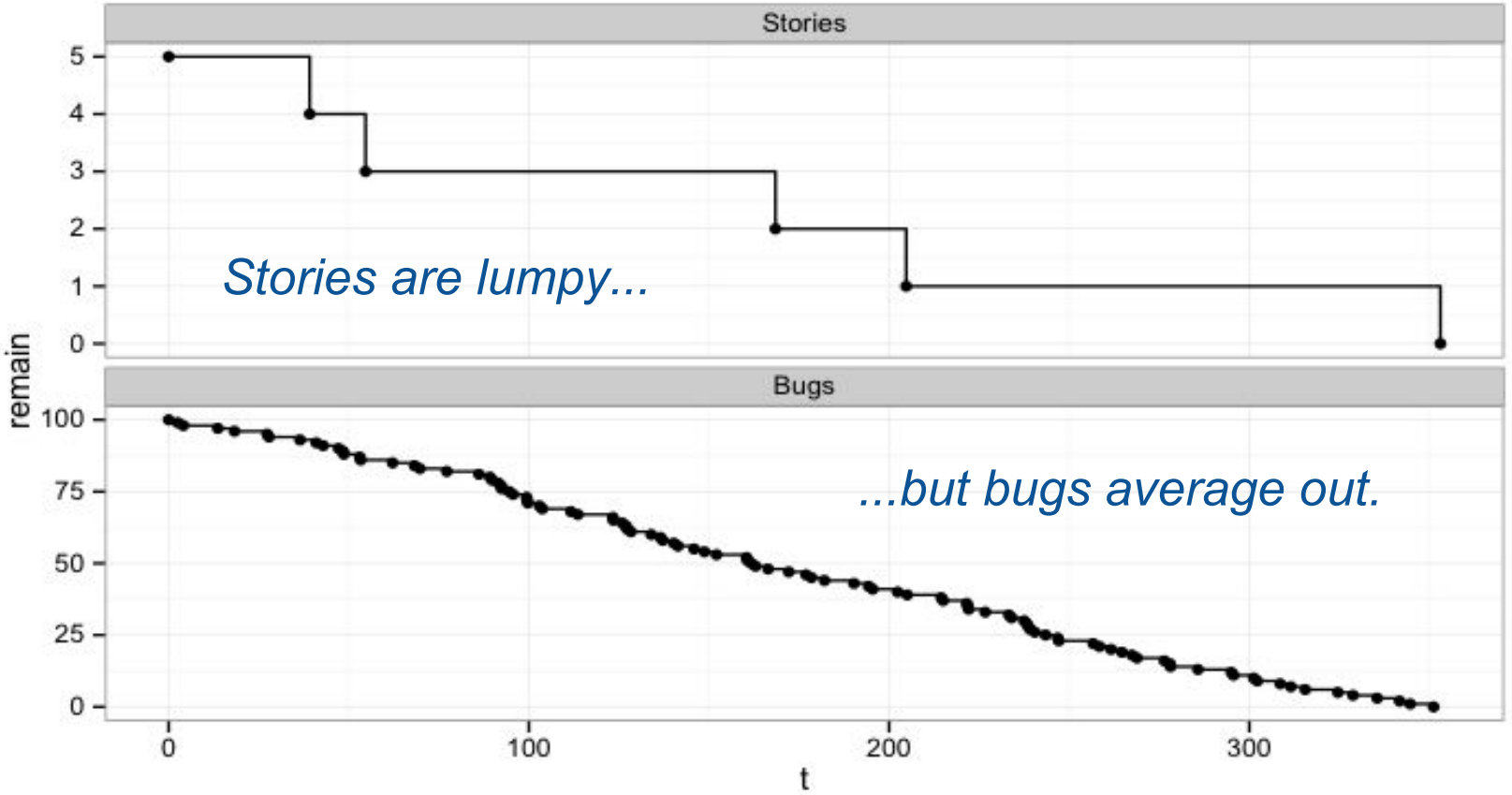
- Slow (~weeks)
- Infrequent
- Controversial (PMs, execs)
- Can be tracked on ~~Index cards~~ spreadsheets

Bugs:

- Fast (~hours)
- Numerous
- Boring (engineers)
- Need automated tracking

Every bug is, on average, the same size

Central Limit Theorem



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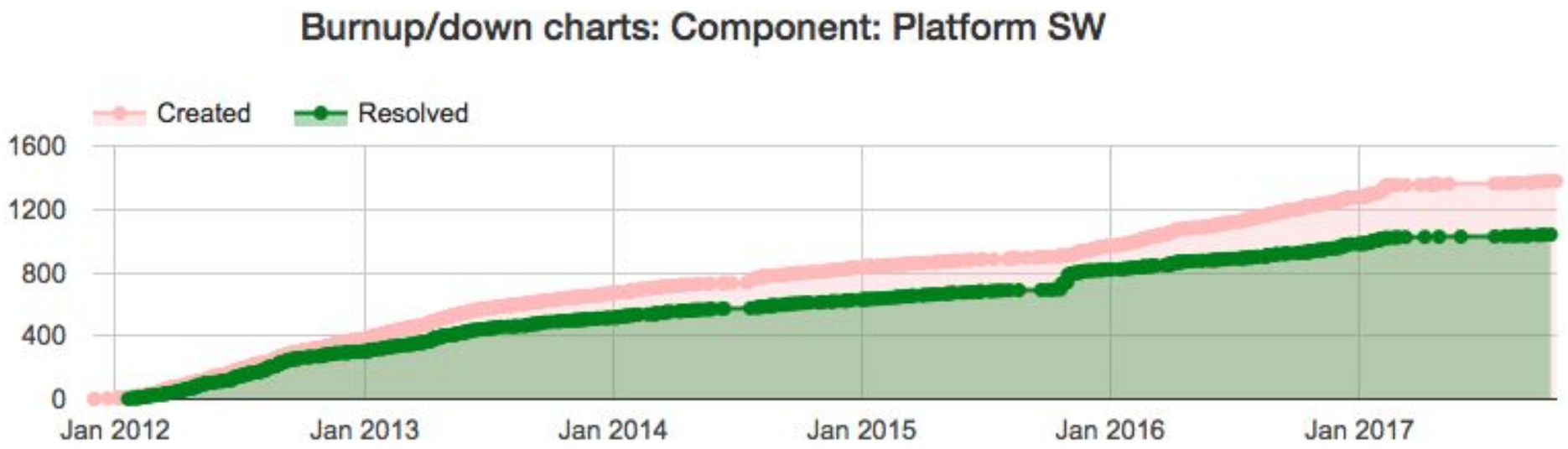
Central Limit Theorem



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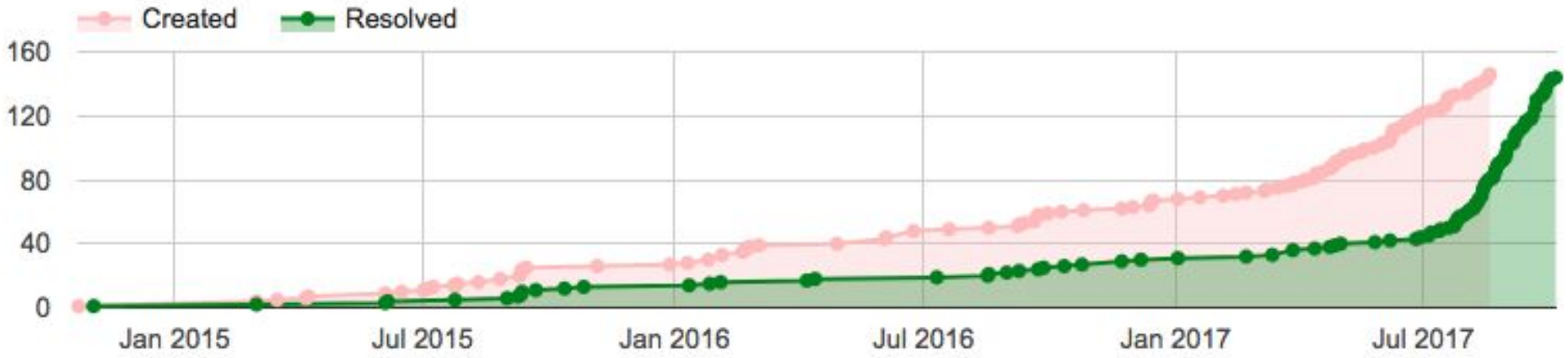

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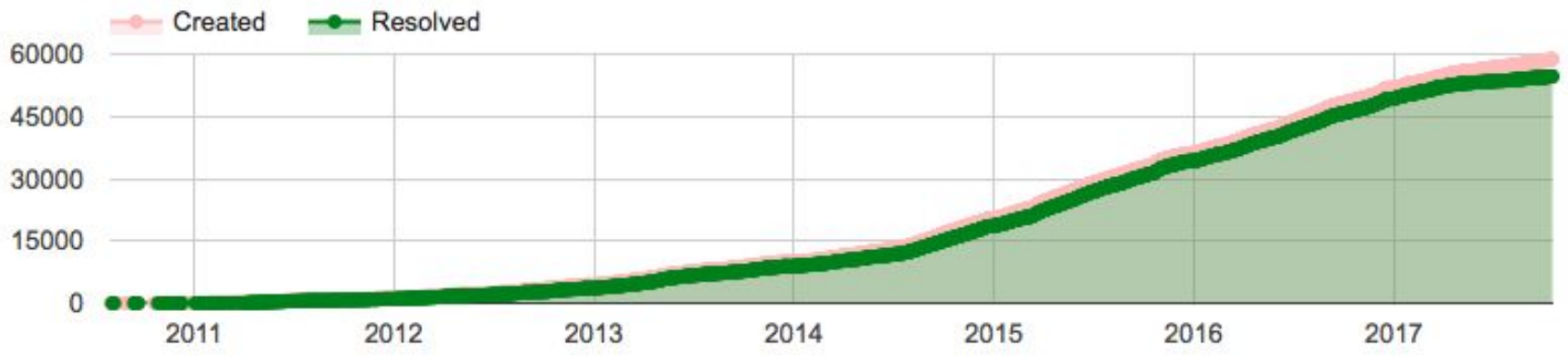
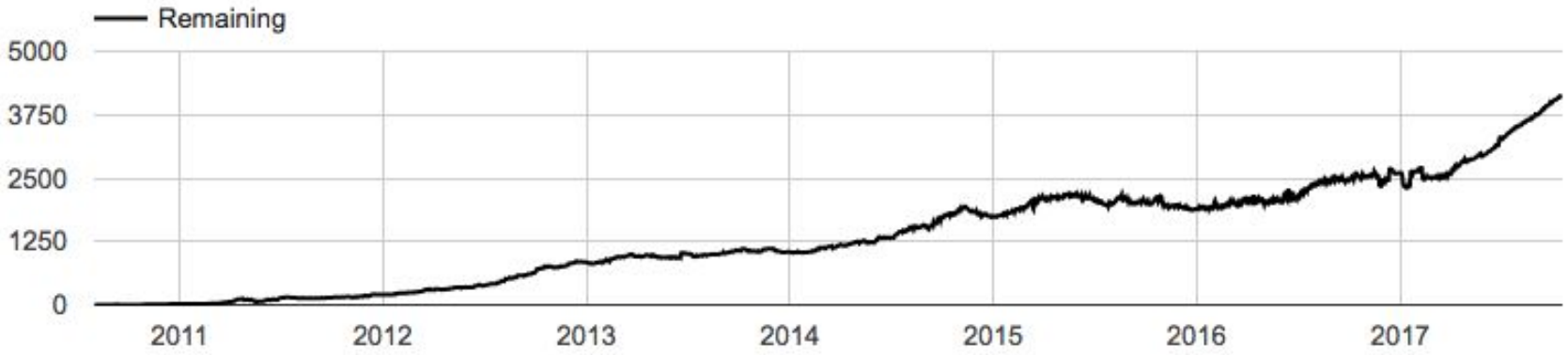


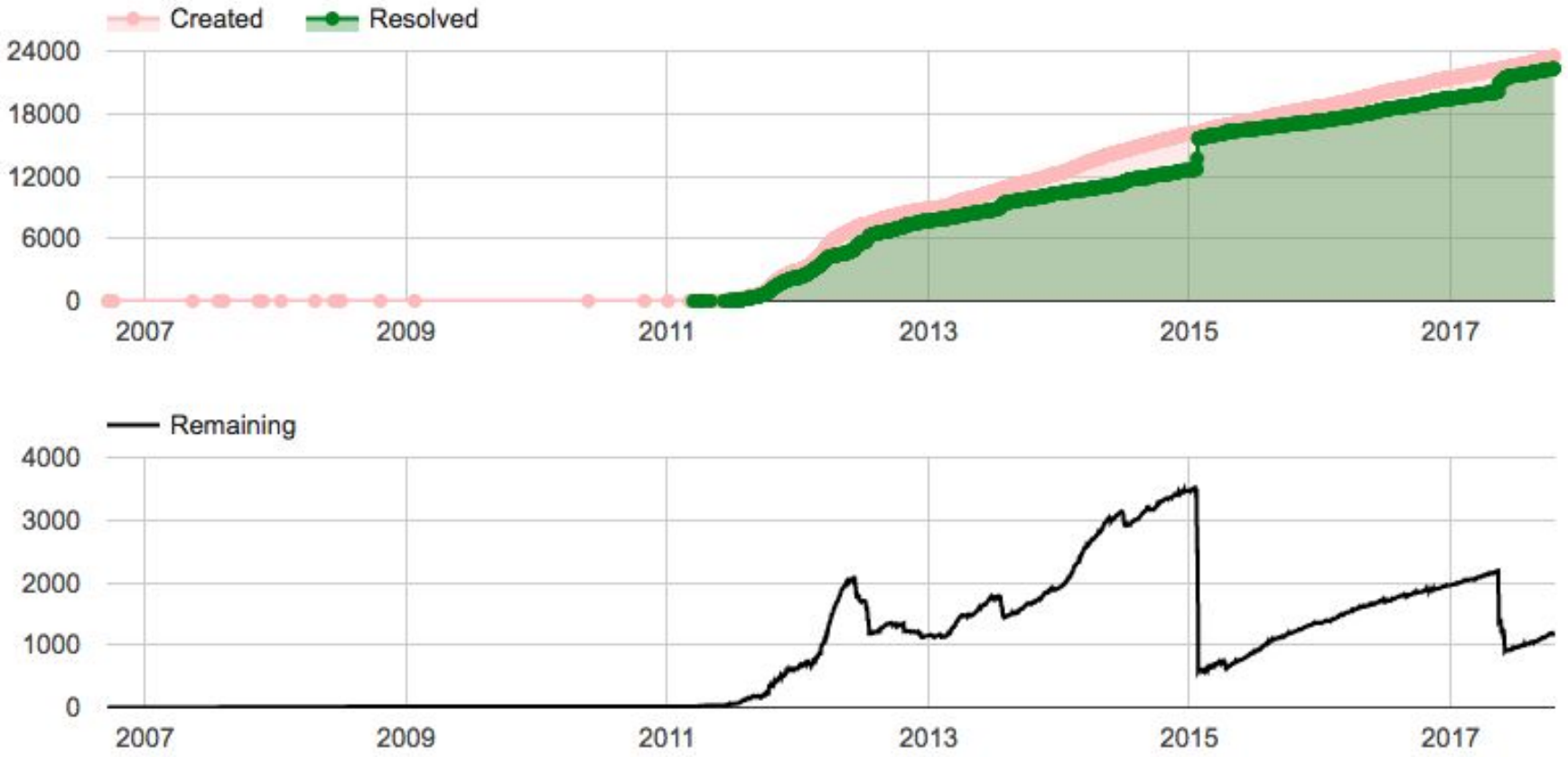


Bug scheduling tips

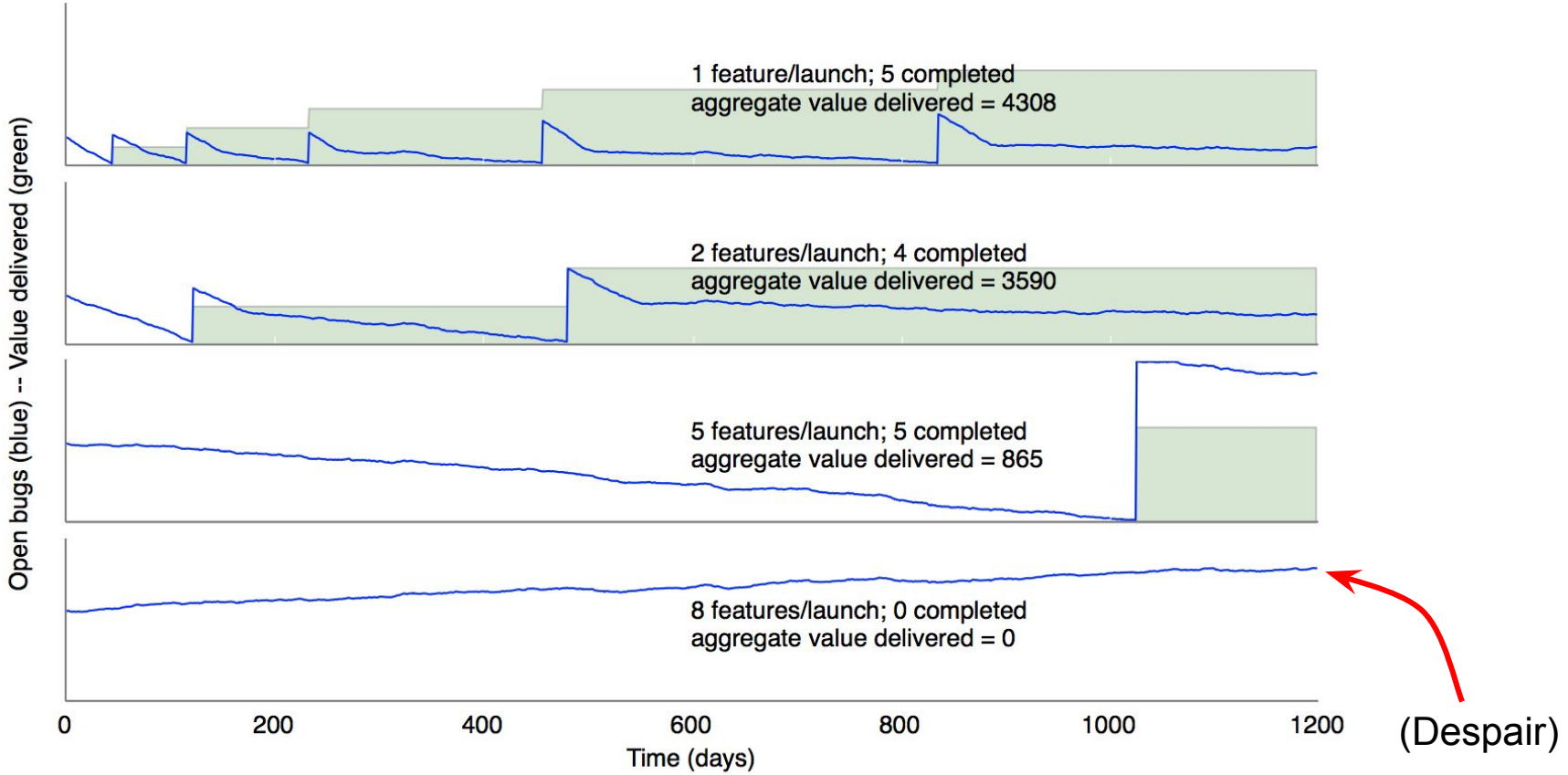
- Use **stories** for **long term** prioritization and estimation
- Use automatic **bug burndown** charts for **short term** prediction
- **Quality is part of every story:** tag all relevant bugs
  - Don't work on bugs that aren't in the current story
- "Regressions and emergencies" is its own top-priority story

3. Triage

Bug bankruptcy doesn’t work (ingress > egress)



Ingress is **always** > egress; that's why we prioritize!



Making “too many bugs” manageable

Fixing bugs:

- Slow
- Requires expertise
- You can’t ever fix them all
- Fix it right the first time

- You need a **system** to handle the **inevitable backlog.**

Triaging bugs:

- 100x faster
- Easy to parallelize
- You **can** triage them all
- Expect occasional re-triage

- No big deal if you do a little each day.

But... clutter!

People worry they'll lose track of bugs if they keep too many open.

Bug tracking: You’re holding it wrong

- Never look at all the bugs in a popular component. You’ll drown.
  Components are **only needed for triage.**

- Don’t create too many components. You only need about
  one component per **triage team.**

- Instead, use hotlists (tags, labels, whatever) to track:
  - Triage status
  - “Needs Discussion” status
  - Release / Sprint / Milestone sequence
  - Feature backlogs (overlapping; one per major feature area)

- Bugs don't need to be assigned to someone

Re-triage: when it's already too late

“It took us two years to get into this mess.
It’s okay if it takes us two years to get back out.”

- Once you have a triage methodology, you don’t have to triage all your old bugs right away.
- Instead, create a “rolling query” that just pops up a few old bugs each day:

componentid:999123+ -hotlistid:888424 **-created:730d**

- Re-triaging **a few at a time** is surprisingly rewarding:
old bugs are much easier to assess than new ones.

Questions

Super overkill extended director's cut slides and text:

apenwarr.ca/log/?m=201712#13

or search for "**apenwarr epic treatise**"