Cracking the WIP

Victoria Morgan-Smith

@VictoriaJMS
About Victoria

Head of Delivery, Internal Products

@VictoriaJMS
Agenda

❖ Enactment!

❖ Discussion
  ➢ 1. Time
  ➢ 2. Complexity & Risk
  ➢ 3. Feedback Loops
  ➢ 4. Measuring delivery
  ➢ 5. The Experience

❖ Further reading / Close
We all know the costs of Context Switching...

Cost of multitasking

Source: Gerald Weinberg, Quality Software Management: Vol. 1 System Thinking
@pawelbrodzinski #1kn112
We all know the costs of Context Switching...

❖ But are there other costs of a high Work In Progress?
❖ Why is it important to limit WIP?
❖ Is it important at all to limit WIP, or is it all a myth?

Let these two people show you:
Let’s discuss....
1. What was the effect on time?
Little’s Law

$L = \lambda \cdot W$

$L = \text{average number of customers}$

$\lambda = \text{customers’ average arrival rate}$

$W = \text{average time customers spend at the business}$
Applied to Kanban

WIP = Throughput * Cycle Time

Q: So how long does it take to consume 1 of my 6 marshmallows?
A: It depends on how many you’re eating at once

WIP / Throughput = Cycle Time
❖ 6 / 6 = 1 minute
❖ 1 / 6 = 10 seconds
More on Little’s Law

- David Lowe – At The Drive Thru
  - A brilliant illustration
- Eliyahu Goldratt - The Goal
  - The effects of adding variability
- Daniel Vacanti – Little’s Flaw
  - If you lurve metrics!
MHMM
AND HOW DID THAT MAKE YOU FEEL
What else could be observed?
2. Complexity & Risk
2. Complexity & Risk

- What could have gone wrong here?
  - How would they each have responded?

- What risks do you associate with working through a big job?
  - How would they have been handled differently?
2. Complexity & Risk

- Localise problems
  - What if they hiccup?
Keep your problems small

KEEP CALM AND JFDI
What happens when the problem gets bigger?
2. Complexity & Risk

- Localise problems
  - What if they hiccupped?

- **Reduce the pain of release**
  - It’s much easier when there’s less to swallow
Not so chubby cheeks...
Once Upon a time...
Everything-as-a service...
2. Complexity & Risk

- Localise problems
  - What if they hiccupped?

- Reduce the pain of release
  - It’s much easier when there’s less to swallow

- **Smaller cost of delay**
  - Don’t keep those tummies waiting!
“If you only quantify one thing, quantify cost of delay”

– Donald G. Reinertsen
3. Feedback Loops
3. Feedback Loops

- What was different here?
- What are the sources of feedback for a team?
- When do they get those chances here?
3. Feedback Loops

- Detect Defects Quicker
  - What if there was something weird and crunchy?
Avoid building on crumbly foundations
Benefits of Small Batch Testing

- Smaller Changes
- Fewer Open Bugs
- Faster Cycle Time
- Early Feedback
- Less Debug Complexity
- More Efficient Debug
- More Uptime
- Higher Validity
- Cheaper Debug
- Cheaper Testing
- Less Non-Value-Added
- Fewer Status Reports
- Less Requirements Change
- Faster Learning
- Lower Cost Changes
- Better Code
- Cheaper Correction

-Better Economics

- Donald G. Reinertsen
3. Feedback Loops

- Detect Defects Quicker
  - What if there was something weird and *crunchy*?

- Faster Feedback from the customer
  - What if their tummy rejected it?
Sometimes our products will be rejected...

**SHE DIDN'T LIKE THE DEAD BIRD.**

**I DON'T UNDERSTAND.**
3. Feedback Loops

● Detect Defects Quicker
  ○ What if there was something weird and *crunchy*?

● Faster Feedback from the customer
  ○ What if their tummy rejected it?

● **Responsive to change**
  ○ What if we wanted to change the priority?
Respond to new information
4. Can we measure our delivery?
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- Which method delivered value more quickly?
  - How do you know?

- Could you predict when they’d be finished?
  - Or when they’d met their customer need?
4. Can we measure our delivery?

- Deliver value early
  - Do these marshmallows still appeal?
4. Can we measure our delivery?

- Deliver value early
  - Do these marshmallows still appeal?

- Estimation
  - Just how big a job is it to eat marshmallows?
Cone of Uncertainty
4. Can we measure our delivery?

- Smaller cost of delay
  - Don’t keep those tummies waiting!
- Estimation
  - Just how big a job is it to eat marshmallows?
- Appetite
  - How much is enough?
Just Enough is Good Enough

Simplicity
- the art of maximising the amount of work not done -
  is essential
5. How does it feel to work this way?
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What would be the experience of working in these two ways?
5. How does it feel to work this way?

- **Achievement**
  - Ultimately much more satisfying
Getting stuff done is motivating
5. How does it feel to work this way?

- **Achievement**
  - Ultimately much more satisfying
- **Less stressful**
  - Being in control of your own pace
Effects of stress

- Inability to focus on tasks
- Ability to process information - existing and learned - and apply to problem solving
- Reduction in work quality
- Defensive behaviour, clashes with colleagues
- Physical illness, absenteeism
Agile processes promote sustainable development
5. How does it feel to work this way?

- Achievement
  - Ultimately much more satisfying
- Less stressful
  - Being in control of your own pace
- **Trigger workflow improvements**
  - What if this is only one step, and we really need to do it faster?
Kanban principles - Buy One Get One Free

- Visualise the workflow
- Limit the WIP
- Manage Flow
- Make policies explicit
- Improve Collaboratively
So, does Limiting WIP Matter?
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Yes!
So, does Limiting WIP Matter?

- Waste less time
- Reduce Complexity & Risk
- Shorten Feedback Loops
- Deliver Value faster - and measure it
- Reduce Stress
References

● The Goal - Eliyahu Goldratt & Jeff Cox

● LKCE12: Daniel Vacanti, Little’s Flaw

● WIP: why limiting work in progress makes sense (Kanban) - David Lowe

● The Principles of Product Development FLOW - Donald G. Reinertsen

● The Lean Startup - Eric Ries

● Continuous Delivery - Jez Humble & David Farley

● Get a Grip!: Overcoming Stress and Thriving in the Workplace - Bob Losvyk
You will be given 6 marshmallows.

When prompted, please put them all in your mouth and eat them all at once.

*Important:* If you think 6 will be too many for you, please say - we can do this with 5 if need be :-)

**NOTE:** Please try to avoid finishing them faster than the other person!

When asked how you feel *(at the end of the exercise)*, please answer with something like:

“I feel a bit sick, I didn’t enjoy that at all - pretty overwhelming actually”
Script - The Limited WIP advocate

You will be given 6 marshmallows.

When prompted, please proceed to eat them one at a time. I will stop you after 40 seconds.

NOTE: Please eat them as quickly as you can - without making yourself unwell!

When asked how you feel (at the end of the exercise), please answer with something like:

“Absolutely fine, those were yummy and I enjoyed that!”