WIP Limits: Lessons from the Trenches

*How to limit WIP at the team and organizational levels*

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Part III of Blog Series

Final installment of Stephen Franklin’s blog series: “WIP Limits - How to Journey (safely) Into the Unknown”
Today’s Discussion

• How Kanban systems can help you manage your WIP and set limits
• Tips for implementing WIP at the team and organizational levels
• Lessons learned from the trenches at LeanKit
Is Your Organization Sub-Merged by a Tidal Wave of WIP?
WIP Limits: Blog Post Recap

• Part I:
  – What is WIP?
  – Why does limiting WIP matter?
  – Why is limiting WIP so hard?
What is WIP?

• “Value demand that has been started but is not yet providing value to the customer.”
Why Manage WIP?

- All flow based systems have capacity limits
- Nearing or exceeding these limits results in bad things
Why is Limiting WIP SO Hard?
WIP Limits: Blog Post Recap

• Part II:
  – Personal WIP
  – Team (Execution) WIP
  – Organizational (Structural) WIP
Managing Team (Execution) WIP

Limiting the team’s WIP serves as the “lever” to implement a pull system so the amount of work to be executed matches the capacity of the team.
Managing Organizational WIP

Limiting the strategic focus of the organization is less about flow and more about clear focus and direction.
So, where do we go from here?
We need a system!
Kanban to the Rescue!

- Why we think the Kanban Method is such a valuable tool for limiting WIP?
Kanban to the Rescue!

• Limiting WIP is a key tenet baked into the Kanban Method
Kanban to the Rescue!

• We cannot manage what we do not understand
• To manage the work, we need a shared understanding of it
This queue replenishment process is an example of “Push”.

Yay! More Codez to write!

It’s my job to replenish the ready queue – I prioritize the top 6 items every 2-3 days.

- Jon (Product Manager)
Finished One!

- Daniel and Stephen, Developers
Better replenish the queue...

- Jon (Product Manager)

- Chris (Tester)
This one is ready to deploy...

- Chris (Tester)
I’m on it...

- Scott (DevOps)
<table>
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<th>Day 6</th>
<th>Development</th>
<th>Test</th>
<th>Deploy</th>
<th>Ready</th>
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</table>
This one isn’t working… I’ll go ahead and pull some more to test...

- Chris (Tester)
Daniel and Stephen,

Rock and Roll… We’ve been very productive these last couple of days

- Daniel and Stephen, Developers
Daniel and Stephen,

Developers

Oops…can’t do that…it would break the WIP limit

What can we do to help?

F2 is broken…

Ok, we’re on it

Oops...can’t do that...it would break the WIP limit
Work is flowing nicely now...
Now we’re really getting some stuff done!
Smooth sailing from here on out, right?

SO YOU KANBAN NOW

YOU MUST BE SO GOOD AT LIMITING YOUR WIP
3 Classifications of WIP

• Personal WIP
• Team WIP / Execution WIP
• Organization WIP / Structural WIP
Managing Team (Execution) WIP

• Why: To Improve Flow

• Challenges:
  – Variability
  – Constraints
  – Interpersonal Dynamics
Introducing Limits
Team(Execution) WIP
Vs.
Handling Variability and Constraint Mobility

Team (Execution) WIP

Ready (6) | In Process | Done | In Process | Done | Deploy | Done

- F7
- F8
- F9
- D2
- D1
- F5
- F6
- F2
- F3
- F4
- F1

Flow
Work regression was a major issue that introduced large variability in our flow.
Ensuring Adoption

Team(Execution) WIP

• The secret formula for ensuring WIP management is:

\[ P_r = P_t \int \frac{\lambda^2 g_t g_r}{(4\pi)^2 r_1^2 r_2^2} \sigma \, dV \]

• Actually, there isn’t a single formula
Scaling WIP Limits
Team (Execution) WIP

• What are things to look out for?
• Horizontal Scaling across a value stream
• Vertical Scaling across higher levels of abstraction
Across the value stream...

Team(Execution) WIP
WIP Dispersion (aka WIP Sprawl)

Team(Execution) WIP
WIP Dispersion Examples

Team(Execution) WIP
WIP Dispersion Examples

Team(Execution) WIP
What to do?
Team(Execution) WIP
So you got your execution WIP under control, time to relax
Managing Organizational (Structural) WIP Limits

• Why: Clear Focus, Align Strategy with Execution

• To Make It Work
  – Maintain focus by limiting your options
  – Systems Thinking (top to bottom, bottom to top)
  – Diligently monitor for hidden WIP and WIP capacity violations
So what does this really mean?
Let’s look at an example
A change of perspective?
Look out: Strategic Bloat

Cycle Time = 6 weeks
Look out: Internal Distractions

Cycle Time = 6 weeks
Look out: Internal Distractions

Cycle Time = 6 weeks
Look out: Internal Distractions

Cycle Time = 6 weeks
Closing Points

- Managing WIP is difficult
- It takes a lot of dedication and commitment
- Perfection is the enemy of progress
- Organizations that stick to it become hyper-productive
YOUR QUESTIONS ANSWERED
Operational Topics

• Should only "in progress" lanes count towards your WIP Limit?
• How do you limit WIP when there are lots of dependencies between teams?
Situational Topics

- If developers have WIP limits, what will they do while they wait for QA to finish testing?
- How useful are WIP limits when you follow a Scrum model?
Communication Topics

• How to convey WIP limits to executive management to prevent overscheduling?
• What to do when managers are the biggest WIP offenders, causing bottlenecks and delays?
Next Steps

• Keep Persevering!
  – Managing your WIP IS hard, but the benefits are worth it.

• Learning Resources
  – Link to the complete WIP limits blog series
  – Kanban Roadmap
Thank you!