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# Techniques for Maximizing Speed and Reliability of Project Portfolios

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Founder & Principal Consultant

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# About Your Presenter

Mike Hannan has over 20 years' experience as a Consulting Executive, IT Project Portfolio Manager, IT Project Manager, Process Engineer, and Software Architect/Engineer/Designer/Tester. He has been a PMP in the PMI Montgomery County Chapter since 2005, and a Theory of Constraints Jonah since 2011.



He has coached, mentored, and trained Senior Executives, CIOs, Portfolio Managers, Project Managers, and Software Engineers throughout his career, and his primary professional passion is helping organizations and teams achieve breakthrough performance.



## ***About Fortezza Consulting, LLC***

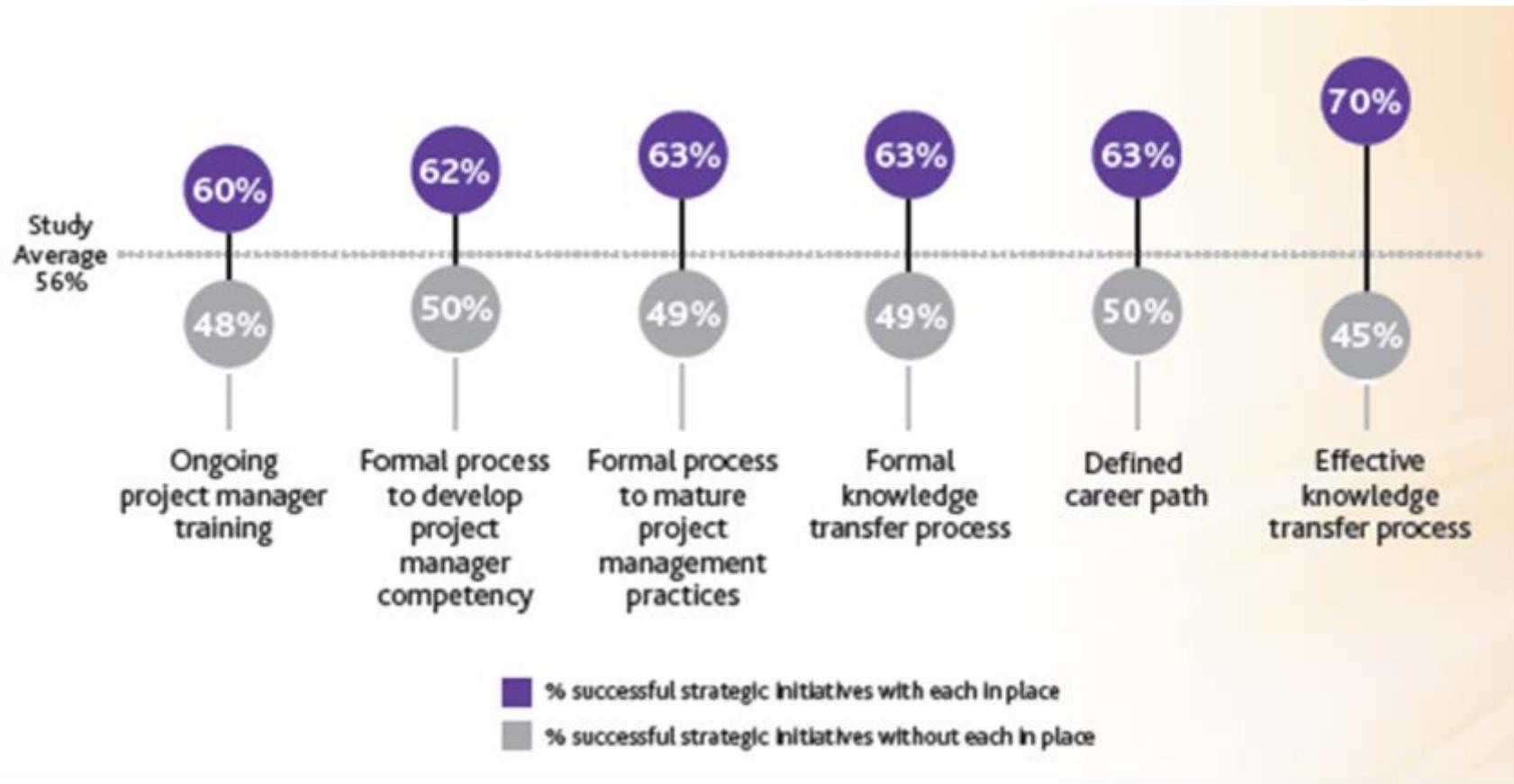
Founded in early 2013, Fortezza Consulting started by helping companies improve their IT Project Portfolio Management capabilities. We've since developed a comprehensive solution to help achieve breakthrough performance—the Fortezza ACCLAIM™ Framework, presented here.

# Problem: Most Project Portfolios Are Failing

- ▶ PMI focused its entire 2014 “Pulse of the Profession” report on this problem, and titled it “*The High Cost of Low Performance.*” See if you can guess the metrics:
  - Percent of strategic initiatives that meet their original goals and business intent: **Only 56%**
    - Percent for “highly agile” organizations: **69%**
  - Percent of organizations that consider themselves “excellent” at executing initiatives to deliver strategic results: **9%**
  - How much organizations lose for every \$1 billion invested in projects and programs: **\$109M**
  - Lower-performing project-centric organizations waste this many times more than higher-performing ones: **12 times more**
  - Percent of projects that lower performers complete: **36%**
  - Percent of projects that are aligned with the organization’s strategy: **40%**



# Won't Formalized PM Processes and Improved PM Training Solve the Problem?



Source: *The High Cost of Low Performance*, PMI, 2014



# Can Agile Help Solve the Problem?

- ▶ Many studies point to productivity gains of 40% or more, especially for software development teams.
- ▶ However, at the portfolio level, results have varied
  - BMC Software first adopted Agile in 2005, and almost immediately launched an enterprise “scaling” initiative that has yielded generally positive results
  - John Deere launched a “big bang” Agile transformation in 2011, achieving positive results initially, before hitting a wall
  - Freddie Mac had some noteworthy improvements at the project level, but portfolio-wide adoption has not met expectations
  - The Department of Veterans Affairs just launched its “Agile Transformation” initiative, piloting a 36-project portfolio.



# What's Missing?

- ▶ Traditional approaches focus on “fixing inputs,” such as PM training and process maturity, and take it on faith that results will follow
- ▶ Agile was designed to address project-level problems for software-development projects, not portfolio-level problems or other types of projects
- ▶ What's needed is an approach specifically designed to improve portfolio performance:
  - **Portfolio Throughput:** How to maximize the number of project completions
  - **Portfolio Reliability:** How to maximize the probability that each project is successful
  - **Portfolio Hybridization:** How to blend the right mix of Agile and Non-Agile projects

*Get More Done*

*Avoid Failures*

*Best Tool  
for the Job*



# The Agile: Scrum Framework at a glance

## The Agile: Scrum Framework at a glance

Inputs from Executives,  
Team, Stakeholders,  
Customers, Users



# What We'll Cover in This Session

Technique	Primary Purpose
Project Staggering	<ul style="list-style-type: none"><li>• Speed Portfolio Execution</li><li>• Expose Resource Bottlenecks</li></ul>
Single-Tasking	<ul style="list-style-type: none"><li>• Speed Project Execution</li><li>• Improve Project Reliability</li></ul>
Eliminating Task-Level Commitments	<ul style="list-style-type: none"><li>• Speed Project Execution</li><li>• Improve Project Reliability</li></ul>
Lean Process Value Stream Analysis (VSA)	<ul style="list-style-type: none"><li>• Tighten Scope</li><li>• Reduce Complexity</li></ul>
Buffering Techniques	<ul style="list-style-type: none"><li>• Improve Project Reliability</li></ul>
Buffer Management Techniques	<ul style="list-style-type: none"><li>• Improve Portfolio Reliability</li></ul>
How to Manage a Hybrid Agile / Non-Agile IT Project Portfolio	<ul style="list-style-type: none"><li>• “Best Tool for the Job” Flexibility</li><li>• Helps Avoid Zealotry</li></ul>



# Guiding Principles

- ▶ Any approach to pursuing highly productive work must be technically sound, and must integrate well together...but that's only the beginning.
- ▶ No organization will ever achieve enduring performance improvements unless it also adheres to two Guiding Principles:



- ***Unity of Purpose***—Does our approach enhance the sense of shared purpose as we perform our work?

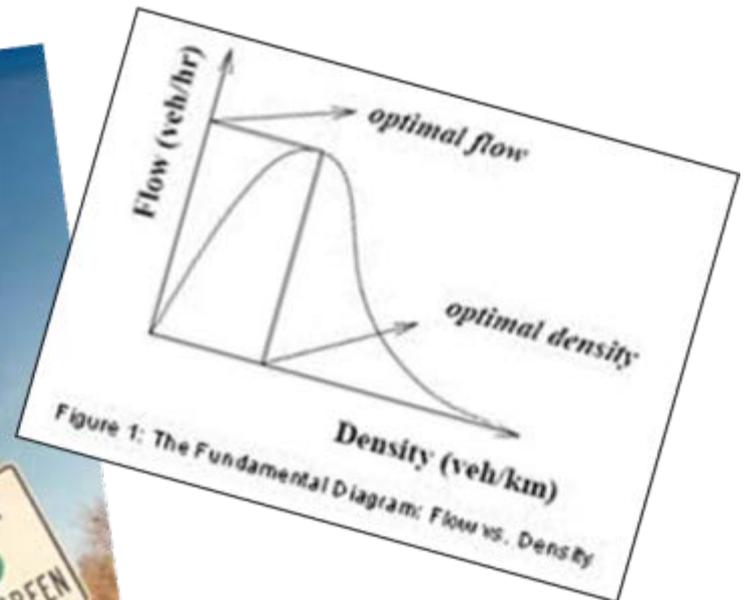
- ***Communities of Trust***—Does our approach foster trust among all stakeholder communities



# Objective: Get More Projects Done

Technique

## Project Staggering



# Project Staggering: Simple Example

## ***Three person team:***

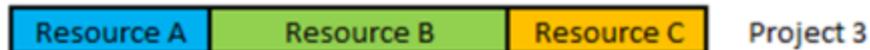
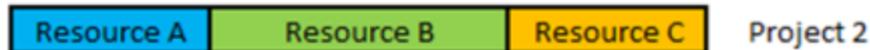
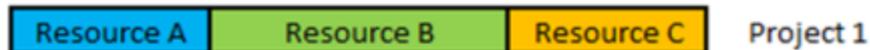
- ***A – Designer***
- ***B – Builder***
- ***C – Tester***

***Three hot projects***

***Seven weeks each***



Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	Wk 12	Wk 13	Wk 14	Wk 15	Wk 16	Wk 17
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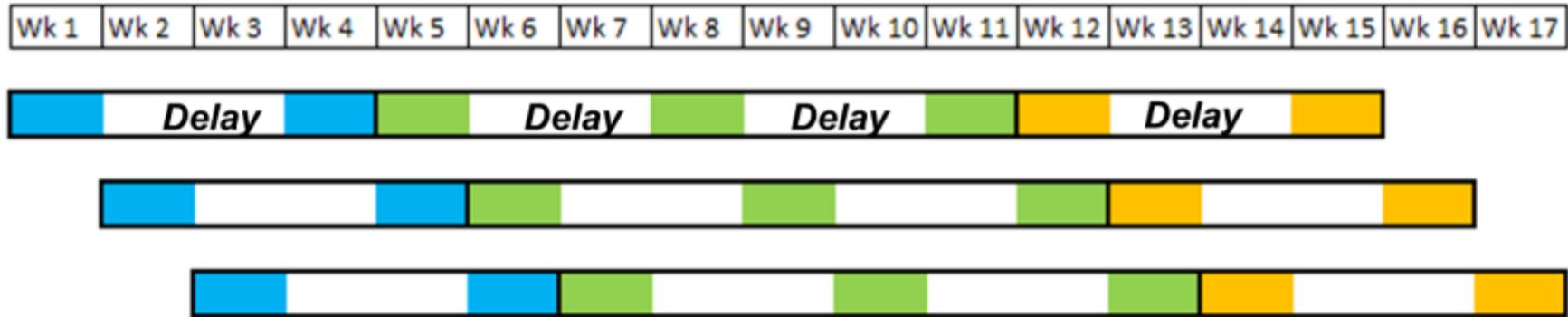
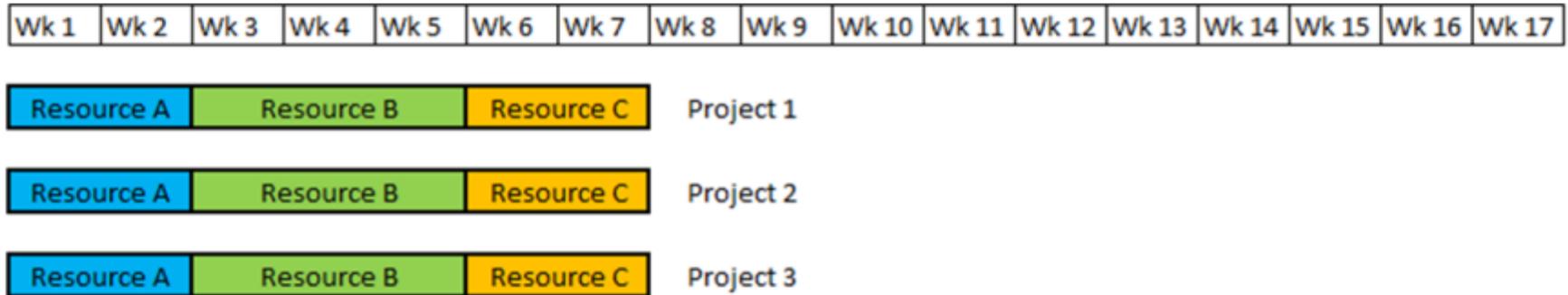


***The sooner we start ....***

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# The Illusion of Progress

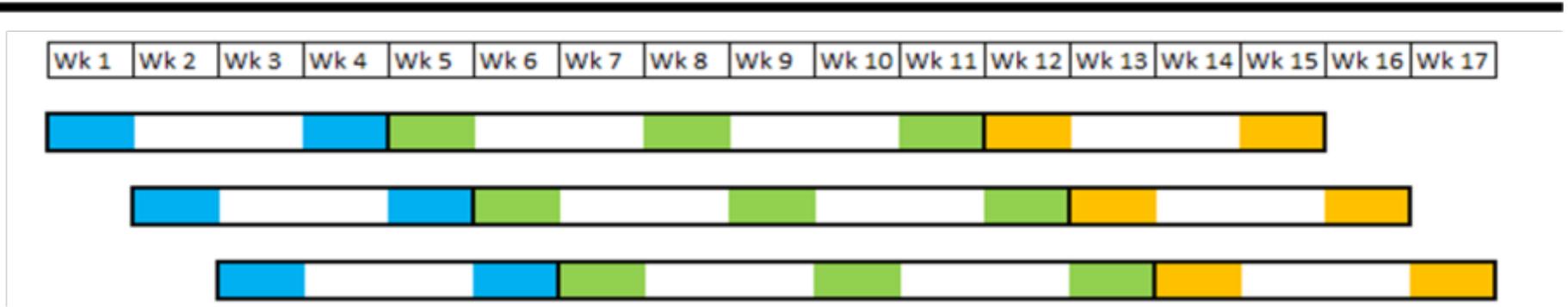


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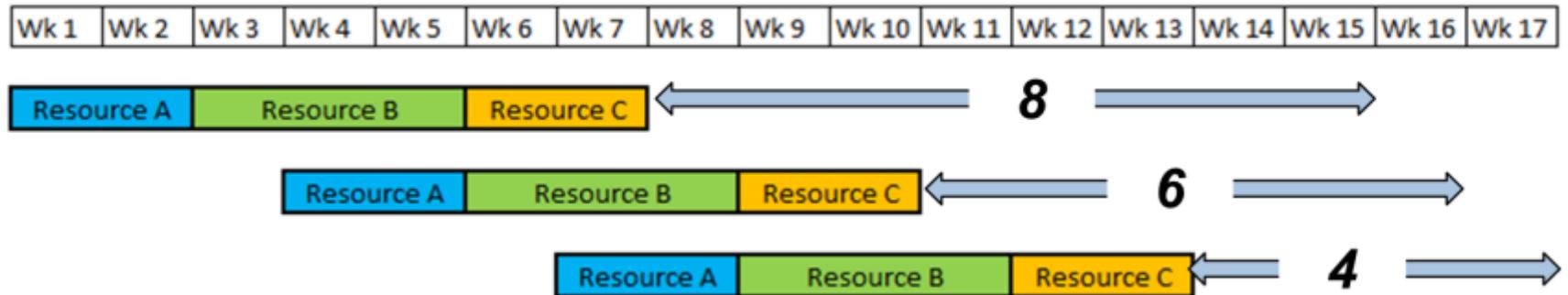


# Simultaneous vs. Staggered Projects

## Simultaneous Projects



## Staggered Projects



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# Project Staggering: Key Takeaways

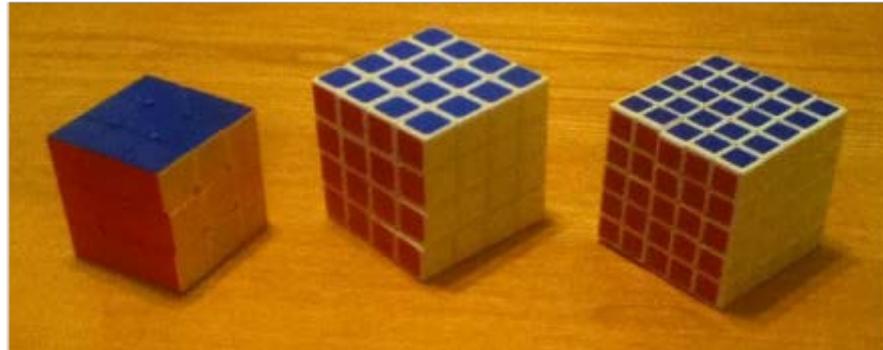
- ▶ Typically delivers a 20-40% improvement in project throughput
- ▶ Agile tenets are consistent with staggering, but staggering is not an Agile requirement; the organization must apply the necessary discipline and tools to implement staggering
- ▶ Executive stakeholders must be convinced that a project start date weeks or months in the future will result in an earlier finish.
- ▶ Staggering helps expose hidden resource bottlenecks, identifying opportunities for resource balancing (more on this later!)
- ▶ Individual efficiency must be subordinated to the goal of maximizing throughput



# Objective: Get More Projects Done, While Improving Reliability

Technique

Maximize Single-Task Focus



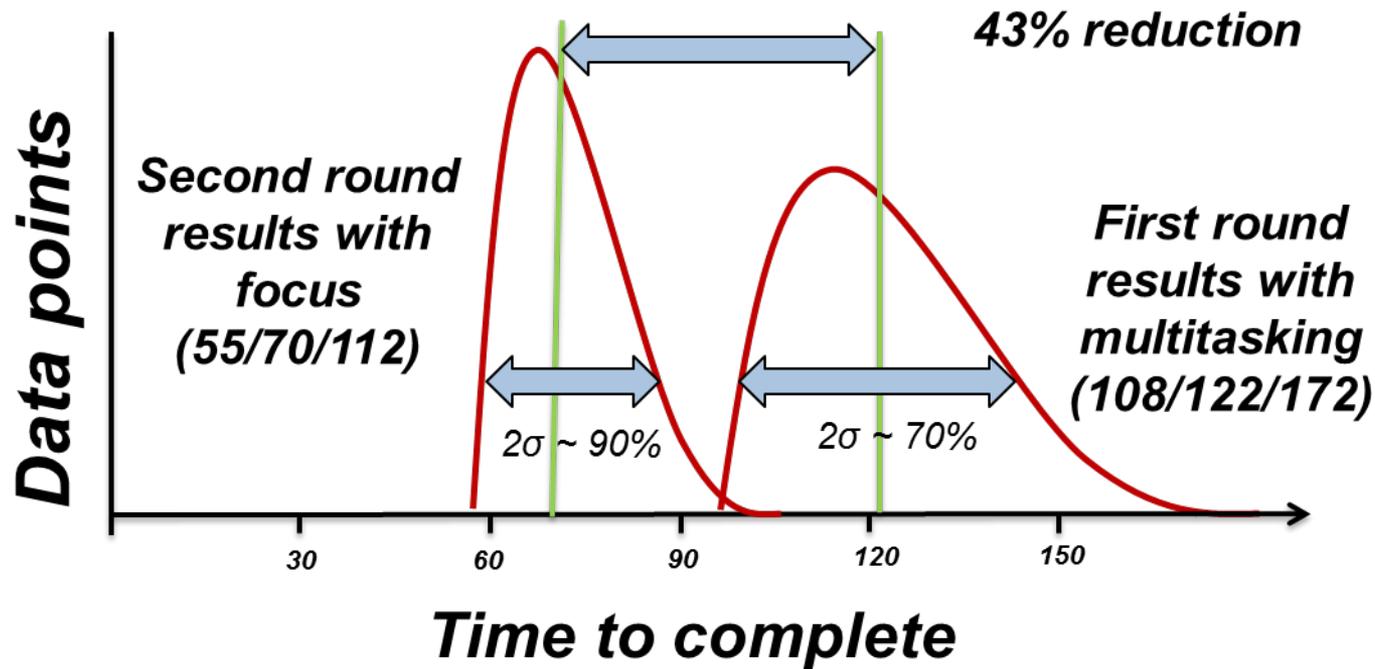
# Maximizing Single-Task Focus

- ▶ In Agile projects, “sprints” are supposed to maximize single-task focus, but it doesn’t always work out that way
- ▶ In non-Agile projects, this is typically even more difficult.
- ▶ We will present some techniques that are highly effective at driving single-task discipline, as well as some helpful tips and tricks
- ▶ But first, let’s play a game...





# Typical Game Results



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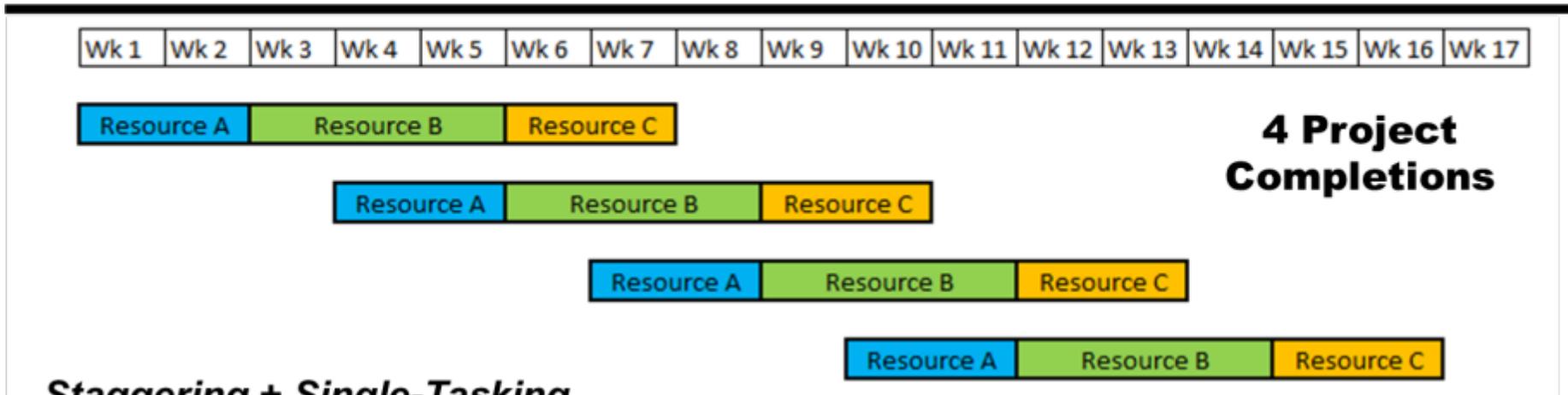
# Ways to Drive Single-Tasking

- ▶ Turn off the Outlook pop-up notifications
- ▶ Block off calendar time, and only leave a few small windows for mandatory meetings, responding to emails, and to handle miscellaneous tasks
- ▶ Turn on an auto-reply message letting people know that you are “heads down” on a task for X days, and will respond to them as soon as the task is complete.
- ▶ Put your phone on silent while in the middle of a task
- ▶ Close the door, and put a sign out saying, “Tasked with completing XYZ task; please do not disturb.”
- ▶ Work from home, and/or work non-standard hours (non-Agile projects)
- ▶ Show your boss the results from the multi-tasking game...or better yet, invite him/her to play it!
- ▶ Work under a single-tasking management framework (more on this later!)
- ▶ If you are the boss, mandate all of the above

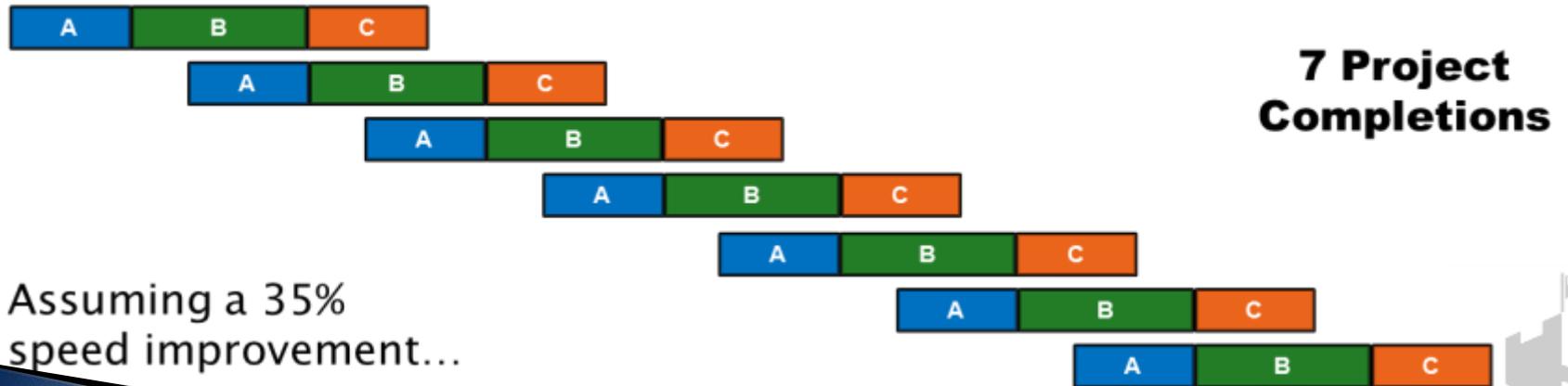


# Staggering + Single Tasking

## Staggering



## Staggering + Single-Tasking

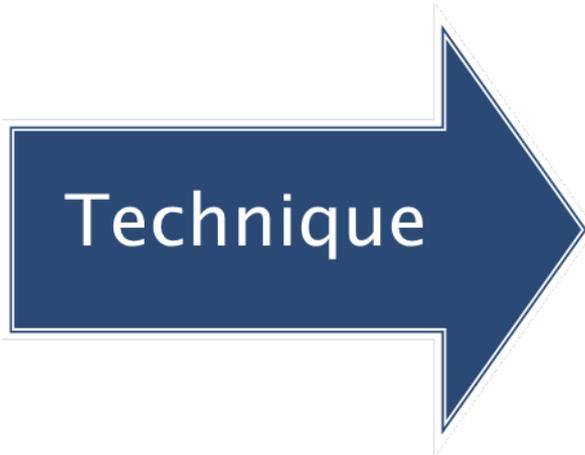


# Single-Tasking: Key Takeaways

- ▶ Potential speed improvements are typically 40% or more, and execution is more predictable and reliable
- ▶ Agile isn't the only way to drive single-tasking, and simply organizing work into sprints does not guarantee single-tasking
- ▶ There are many ways to drive single-tasking on your own
- ▶ Executive support is critical
  - Executive “top cover” for single-tasking can accelerate its adoption dramatically
  - Executive interruptions and expectations of multi-tasking will quickly derail adoption of single-tasking



Objective: Get More Projects Done, While Improving Reliability



Eliminate Task-Level Commitments



# How Eliminating Task-Level Commitments Speeds Execution

- ▶ Responsible task owners understand the inherent uncertainty in task execution, and build in appropriate buffers when committing.



Total = 40 days



Total = 20 days

- ▶ Responsible task owners are often hesitant to deliver early, because they fear they may be held to the same short deadlines in the future.
- ▶ Responsible task owners enjoy delivering early—much like a relay-race runner does—as long as they have the assurance that their team is behind them if things don't go so well.



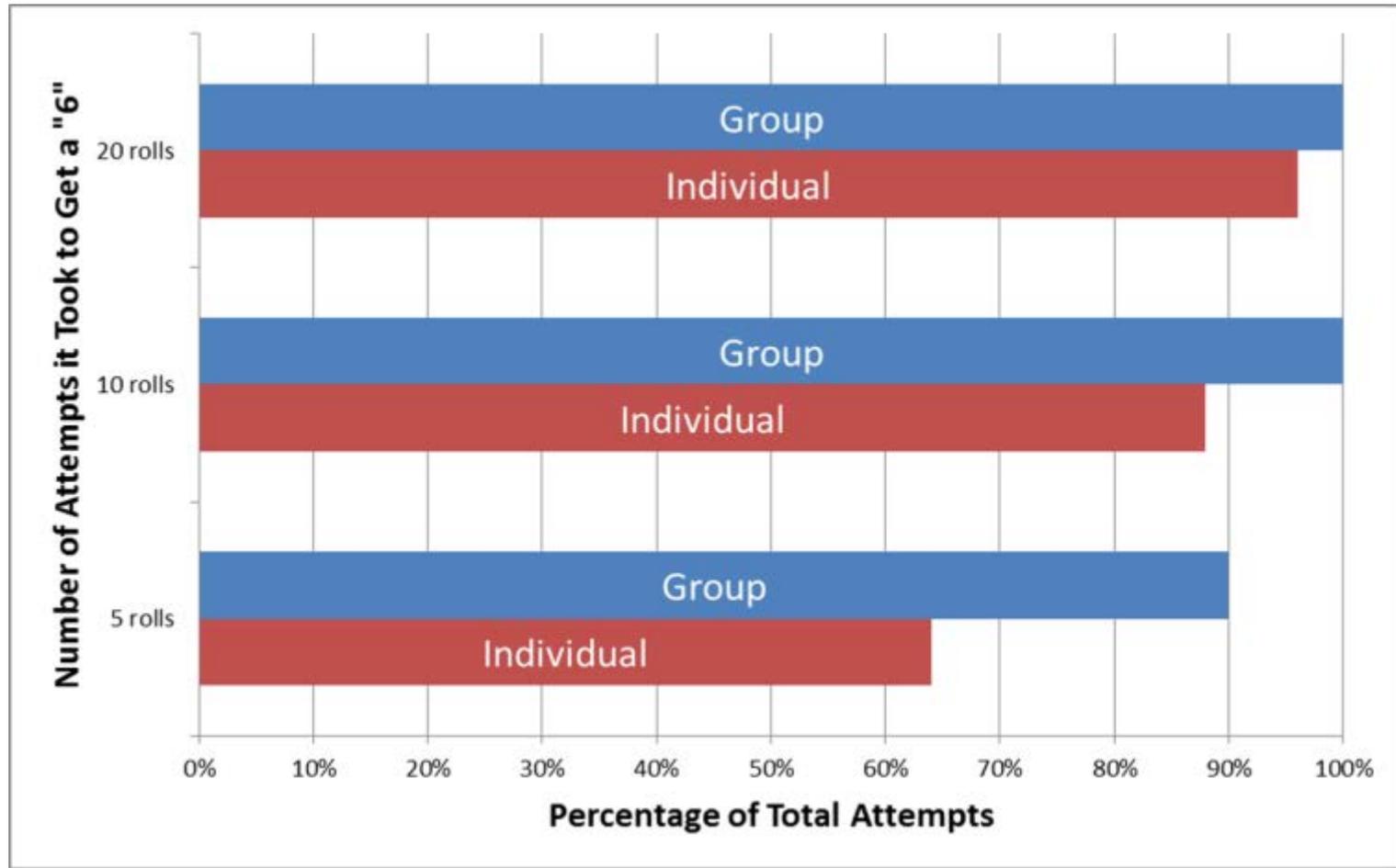
Total = 30 days

- ▶ Let's play a game...

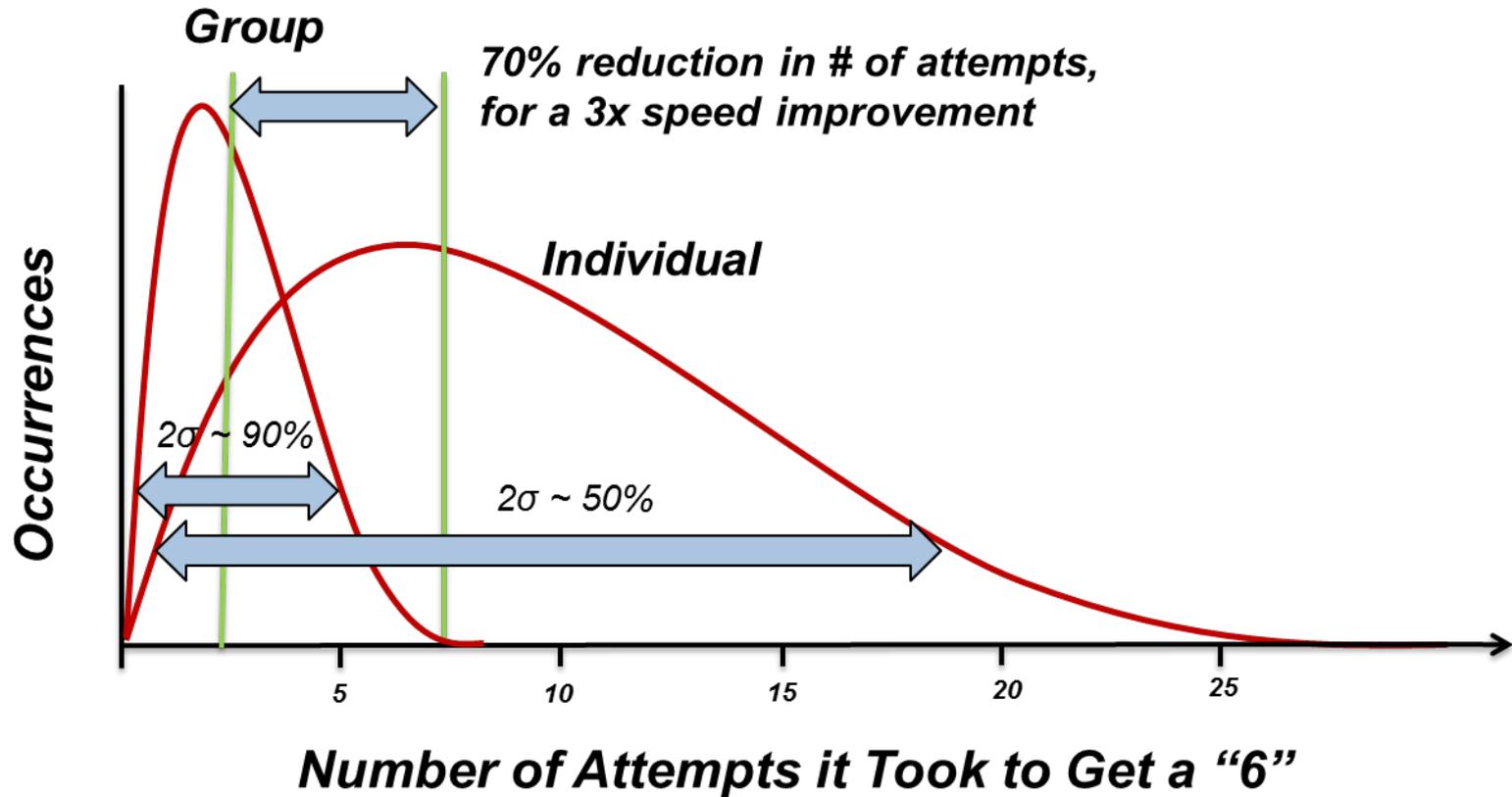


# Game Results: Individual vs. Group

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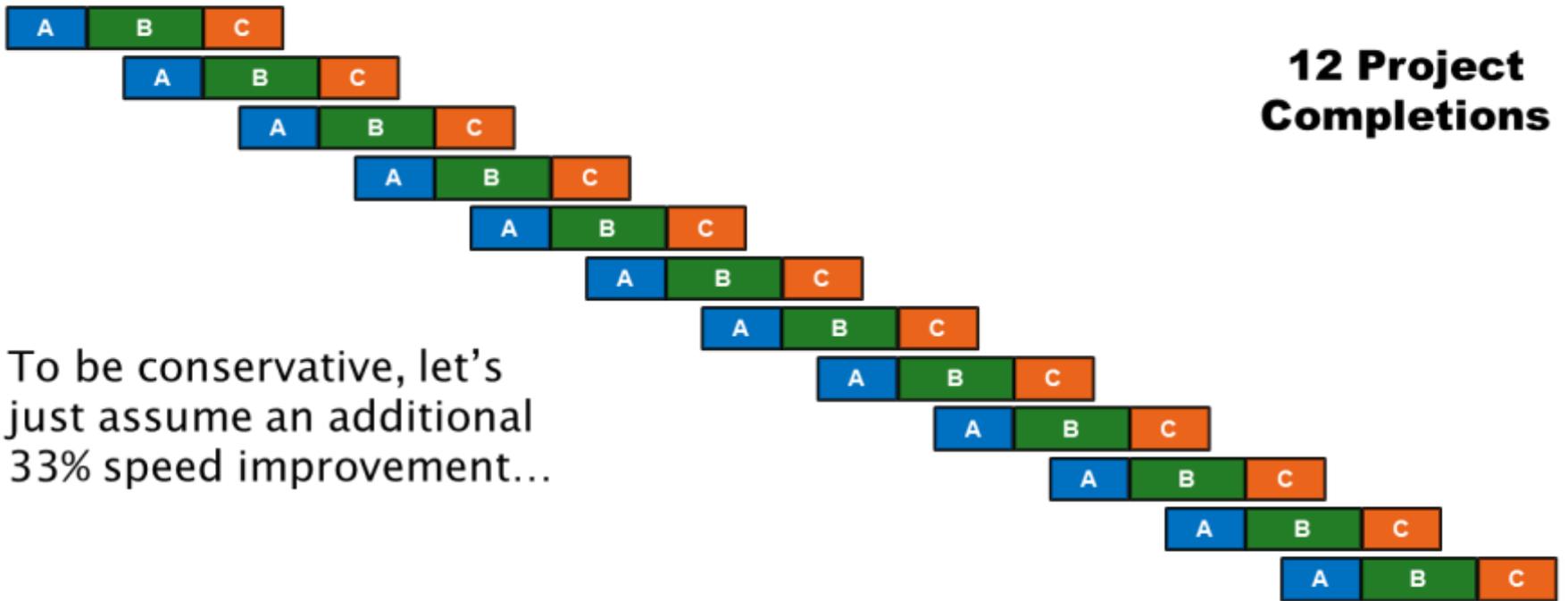


# Typical Game Results: Individual vs. Group



# Staggering + Single Tasking + Eliminating Task-Level Commitments

Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	Wk 12	Wk 13	Wk 14	Wk 15	Wk 16	Wk 17
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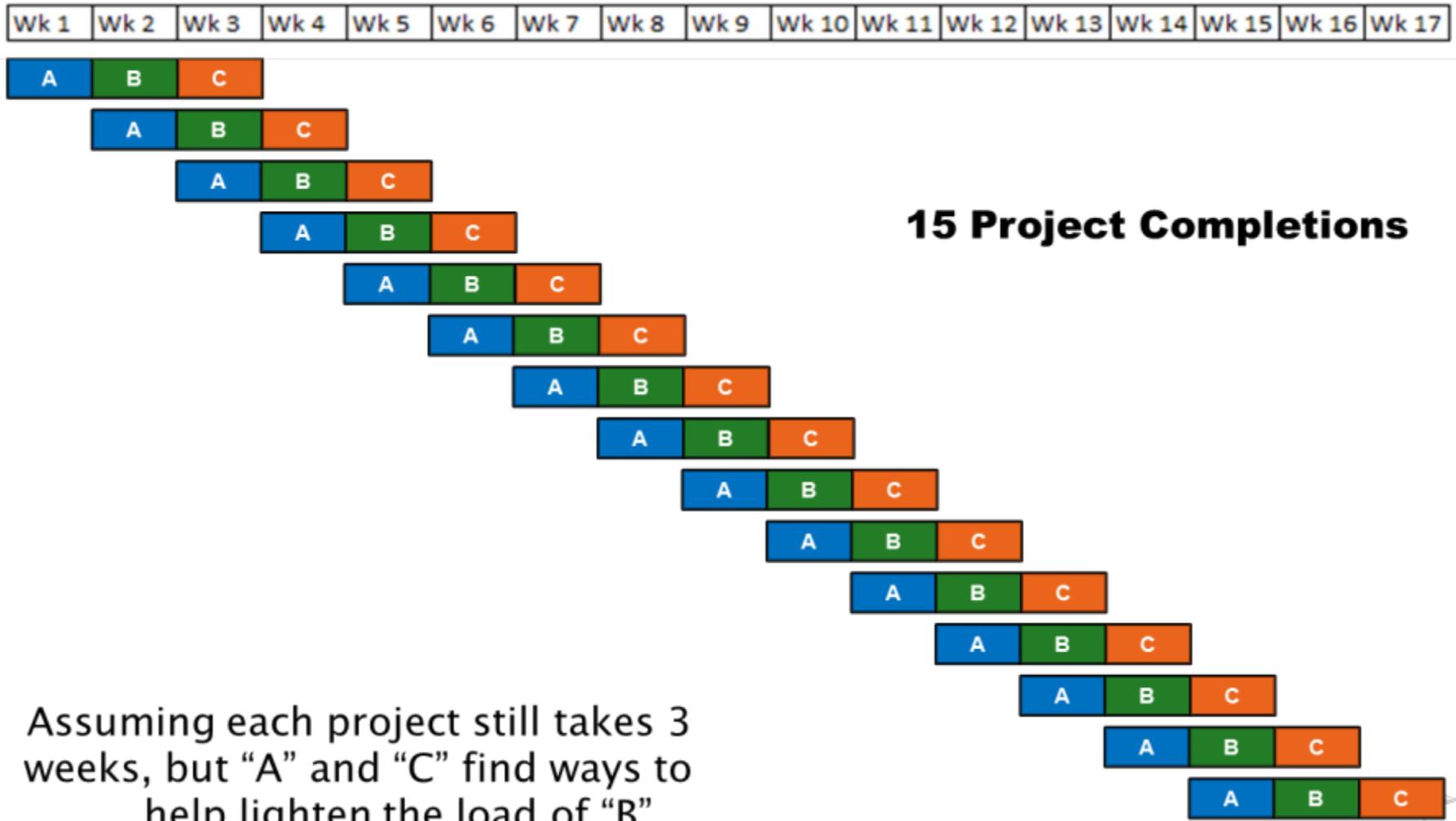


# Eliminating Task-level Commitments: Key Takeaways

- ▶ Speed improvements are often as big as 2x, and execution is more predictable and reliable
- ▶ Aggregating buffers at the project level pools project risk, just like an insurance policy does
- ▶ Eliminating task-level commitments encourages individuals and teams to deliver early, just like a relay race does
- ▶ Once task owners have faith that there is a project buffer that will be there if they need it, they stop adding hidden buffers, and are free to focus on rapid execution
- ▶ Even a generous project buffer will always be *less* than all of the hidden task-level buffers that you've now eliminated
- ▶ However, executives may still be tempted to cut it, so for this to work, they must be trained to *protect* it, not cut it.
- ▶ Agile sprints also help focus the Scrum Team on rapid execution, as long as the team avoids sprint commitments



# What if I Can Eliminate the Resource Bottleneck?



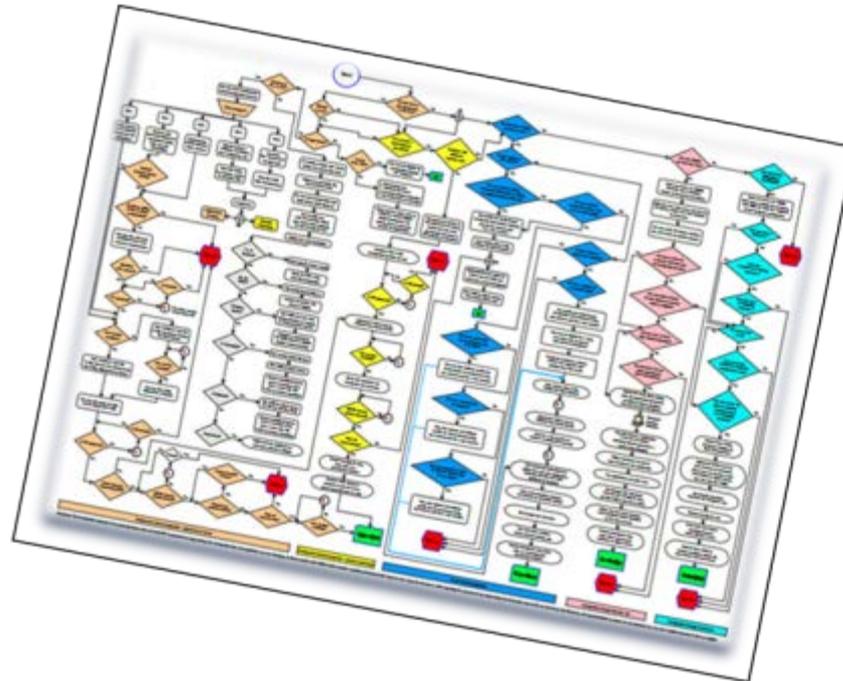
Assuming each project still takes 3 weeks, but "A" and "C" find ways to help lighten the load of "B"...



# Objective: Get More Projects Done

Technique

Lean Out Businesses Processes Before They Are IT-enabled



# Why Bloated Processes Are Often Hard to See

- ▶ “The customer said this is a hard requirement!”
- ▶ “A guy on our Scrum Team has a Lean Six Sigma Green Belt, and he said he already Leaned out the process!”
- ▶ “Whatever time and effort we spend Leaning out processes would be better spent getting software developed!”
- ▶ “In Agile, we don’t have time for such ‘analysis paralysis,’ and just need to get started!”
- ▶ “We like the challenge of designing and developing software to enable complex processes!”
- ▶ “We’re on a T&M contract, so if the customer has inefficient processes, that’s more \$\$ for us!”



# Let Me Tell You a Story...

- ▶ A client had contracted with a major systems integrator (SI) to implement a large, complex COTS package to manage a key part of the agency's business.
- ▶ The SI emphasized the importance of accepting as much of the COTS solution's "standard configuration" as possible, in order to accelerate project schedule and minimize cost.
- ▶ The client took the advice, and launched a massive effort to map all existing processes to the standard configuration.
- ▶ A few months later, they presented their process maps. One particularly complex process took 523 steps, and all 523 steps mapped well to the COTS solution's standard configuration.
- ▶ My team asked this client for a chance to Lean out just this one process, even though that meant incurring an additional delay.
- ▶ The client agreed, and had its process owners "go back to the drawing board" with my team.



## ...Story Continued

- ▶ A month later, the client took its newly Leaned out process back to the SI, and asked if the COTS solution could support it.
- ▶ SI: “Yes, but it’s not the standard configuration, so therefore it must not be an industry best-practice approach.”
- ▶ Client: “Fine with me—if the solution can support either one, then I’ll take the simpler, faster option that my team came up with.”
- ▶ The SI sent in a change order for an additional \$500K for “additional configuration support,” with a 3-month schedule slip.
- ▶ The client not only rejected the change order, but terminated the contract. Why such a strong reaction?
- ▶ ...because the new process was just 22 steps, 95% shorter than the 523-step “best practice” approach.
- ▶ The entire COTS implementation was re-competed for a 20% lower price, and the new contractor implemented the Lean process 80% faster than its predecessor had originally planned to.



# Are Those Results Typical?

- ▶ They are definitely on the high end, but not by much.
- ▶ Most processes, in industry after industry, in large organizations and small, in both the private and public sectors, experience a

*70-90%  
improvement*

after undergoing a Lean Process Value Stream Analysis (VSA) performed by a highly qualified Lean Sensei or LSS Black Belt.



# A 95% Reduction? How is That Possible?

- ▶ Through Process Value Stream Analysis (VSA), a Lean technique that challenges process owners to apply much stronger scrutiny to their processes than is typically the case



## Value Added

- The step changes the item being processed.
- The customer of the process is willing to pay for the step (not just with \$).
- The step delivers a result that's done right the first time.



## Non-Value Added - Necessary

- No value is created but which cannot be eliminated based on current technology or thinking.
- Required (regulatory, customer mandate, legal).



## Non-Value Added - Waste

- Consumes resources but creates no value in the eyes of the customer.
- If you can't eliminate the activity, it's non-value added but necessary.



# Examples of Non-Value-Added Steps

- ▶ Steps that satisfy internal stakeholders—but which do little or nothing that the customer cares about—are eliminated
- ▶ Steps that consist of reviewing, approving, and reworking are removed
- ▶ Steps that deliver low-quality results—which necessitate all the reviewing/approving/reworking in the first place—are changed to deliver high-quality results
- ▶ Steps that call for complex branching are replaced by simple “standard work” steps that are perfectly acceptable.

*Eliminate*

*Improve*

*Simplify*



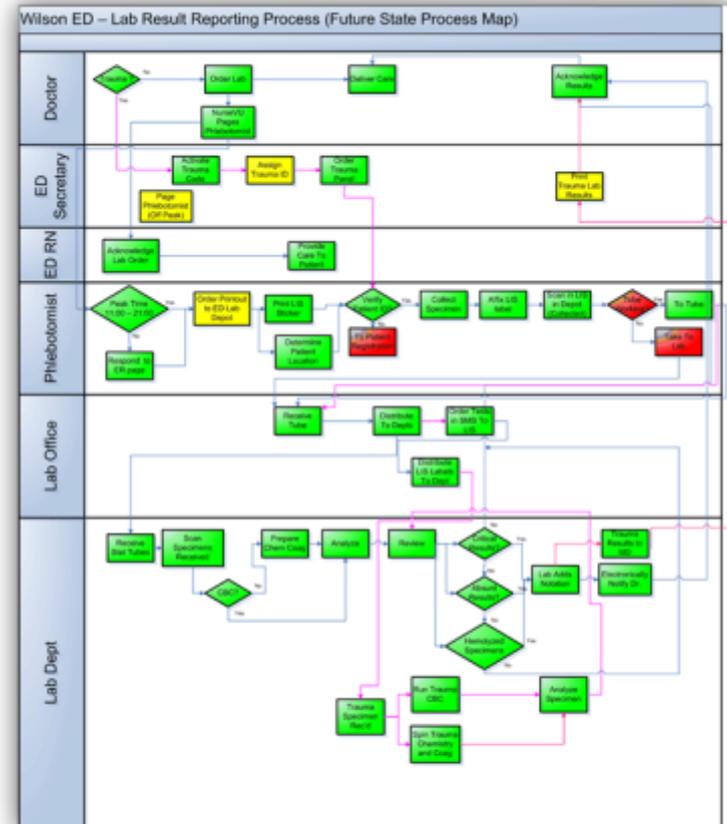
# Lean Process VSA Example

## Current State Map



**Steps: 117**  
**NVA Steps: 73**  
**Handoffs: 25**

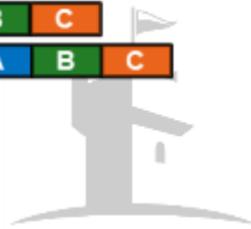
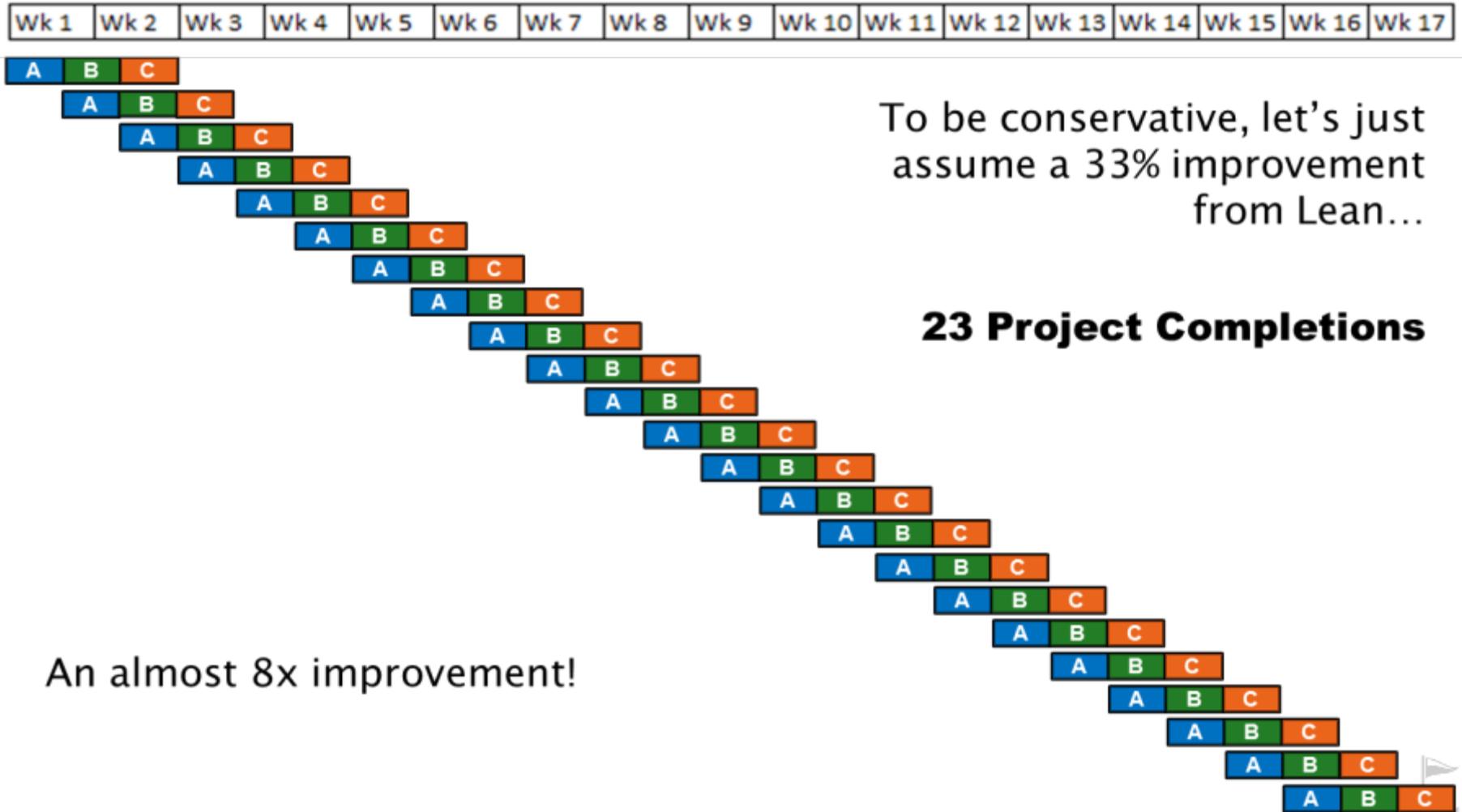
## Future State Map



**Steps: 45**  
**NVA Steps: 8**  
**Handoffs: 12**



# Staggering + Single Tasking + No Task-Level Commitments + Resource Balancing + Lean



# Objective: Improve Project Reliability

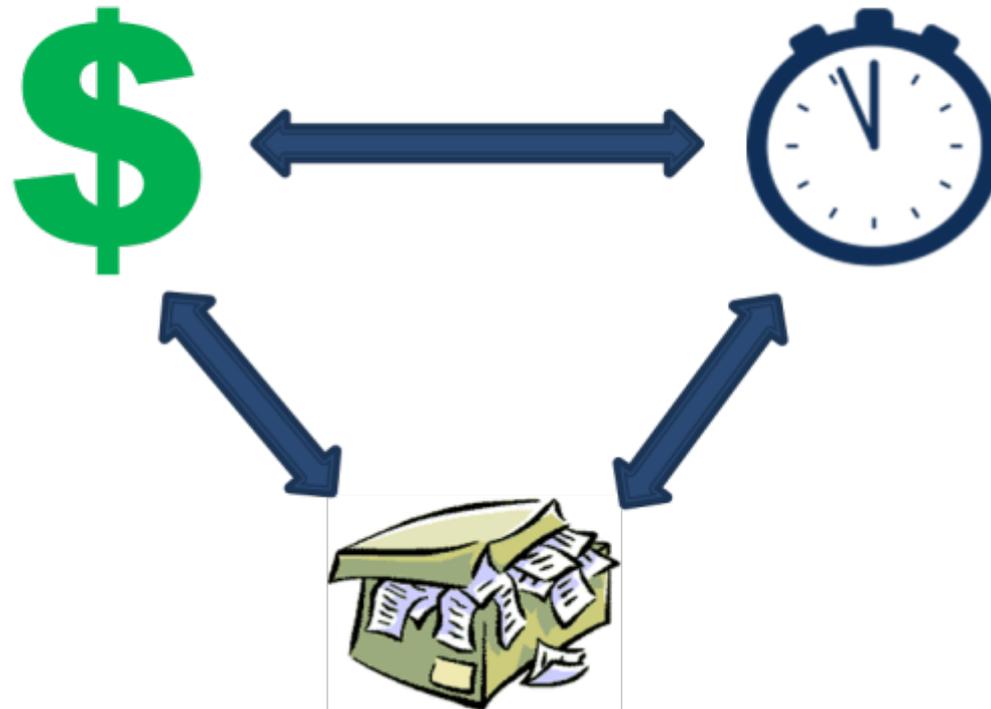
Technique

Buffering



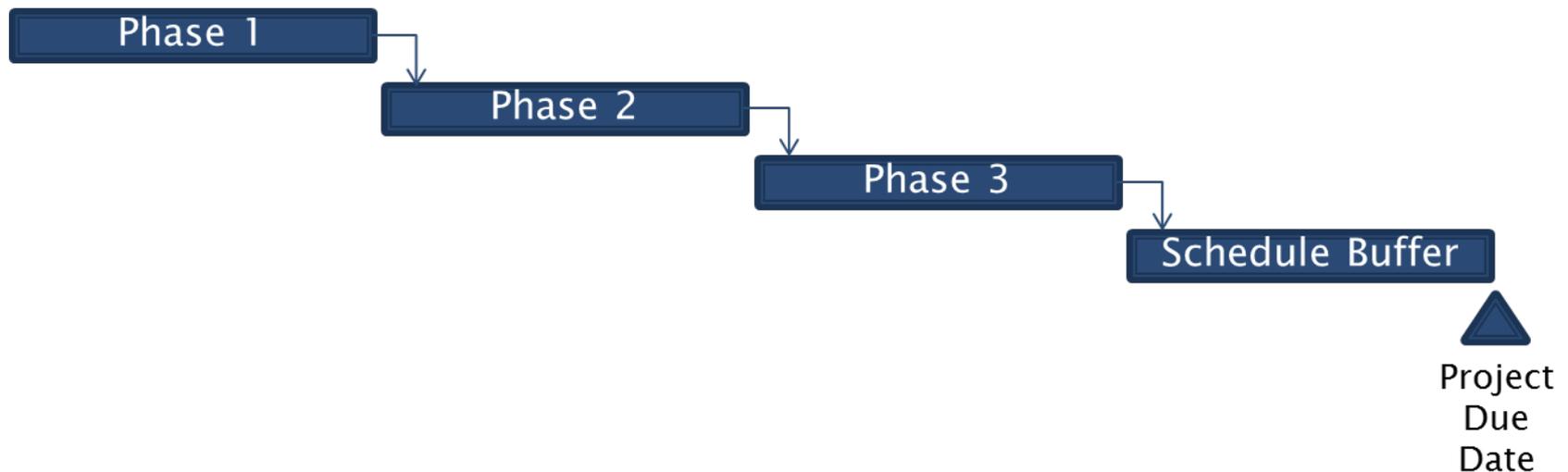
# The “Triple Constraint Rule” of Buffering

- ▶ In order to buffer against project uncertainty, the Triple Constraint Rule says that we can hold fixed at most two of the three standard project constraints:



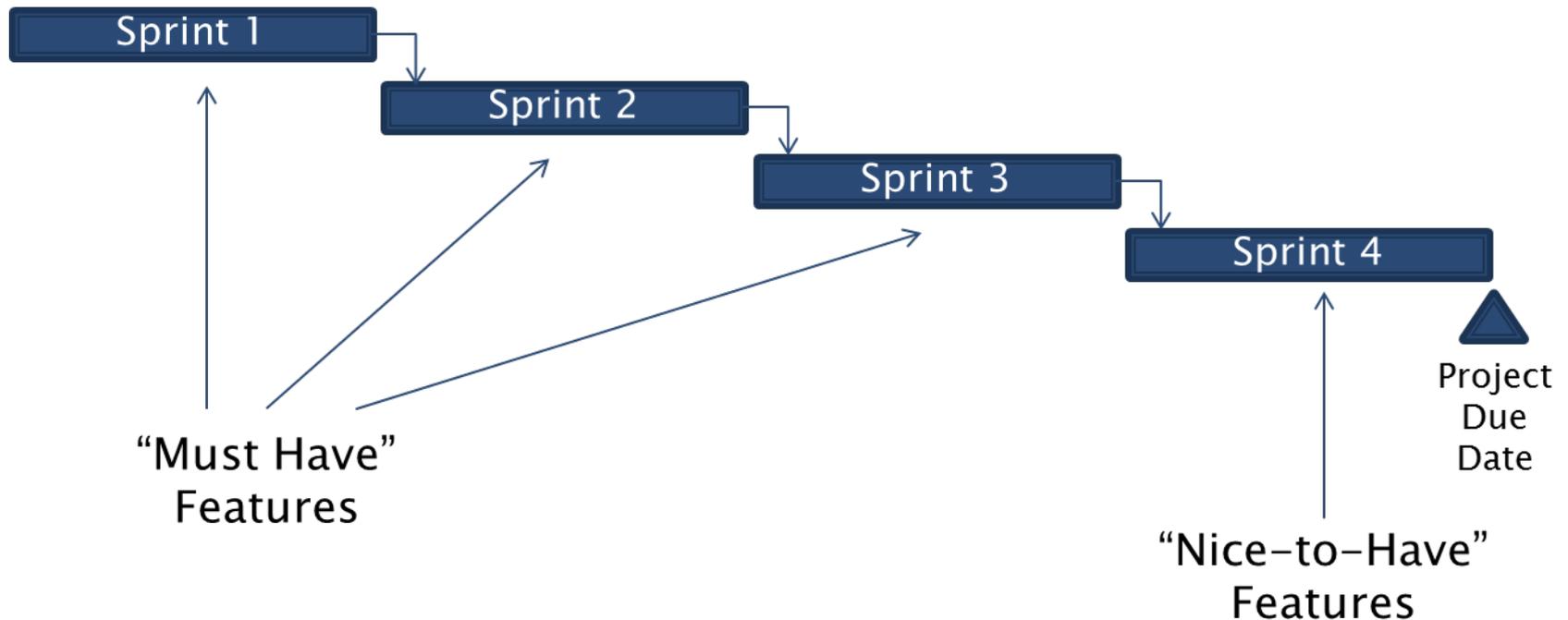
# Example of a Schedule-Buffered Project

- ▶ A traditional “waterfall” project typically has a “management reserve” schedule buffer at the end of the project



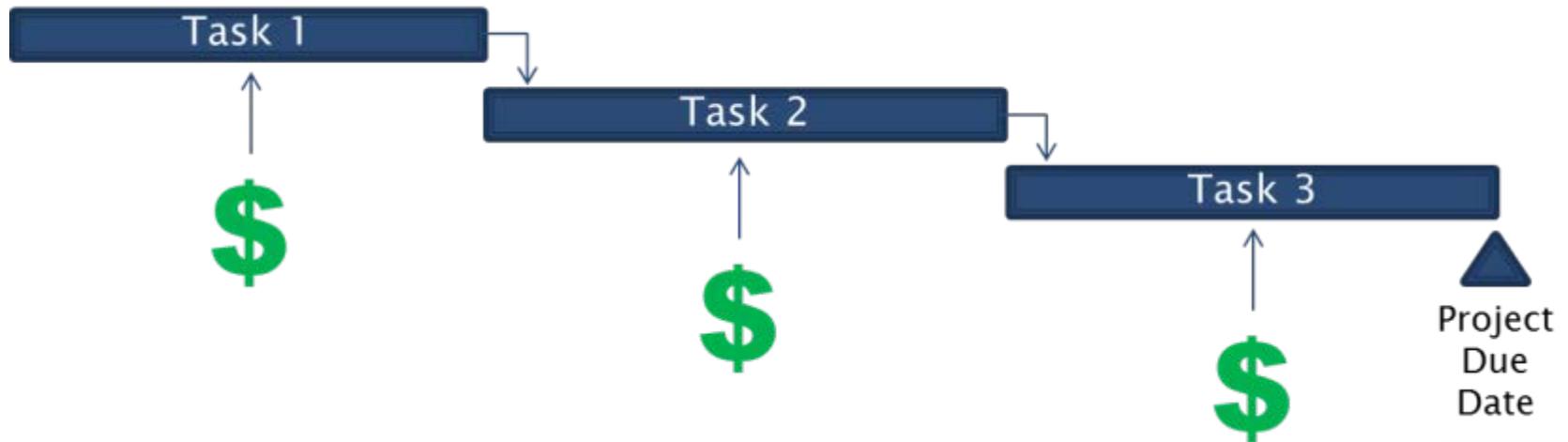
# Example of a Scope-Buffered Project

- ▶ Agile projects serve as a good example here—they typically have “backlogs” of tasks that include lesser-priority software features that users would like to have, but can live without.



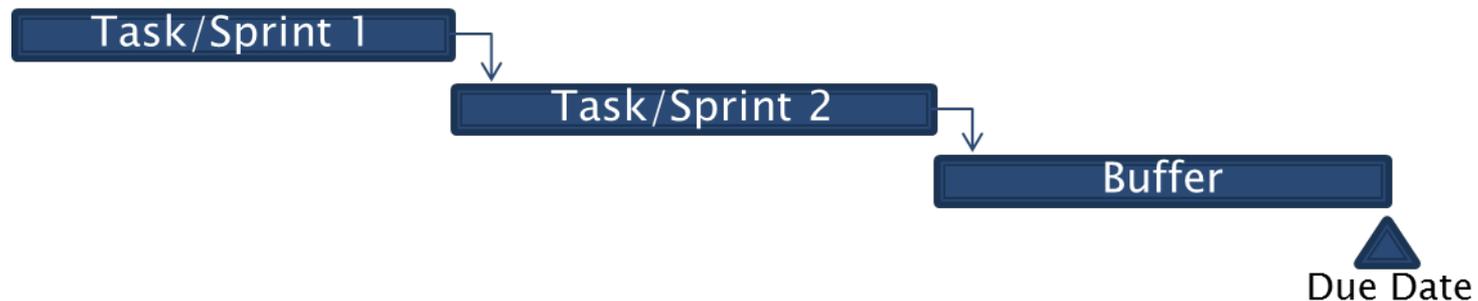
# Example of a Budget-Buffered Project

- ▶ This is what I call the “Olympic Stadium” type of project
  - The schedule is absolutely fixed
  - The scope is almost absolutely fixed
  - Budget is the only available buffer



# How Much Buffer Do I Need?

- ▶ The rule of thumb is 50%, also known as “The 2:1 Rule”
- ▶ For schedule-buffered projects, this means two days of focused, uninterrupted task execution, and one day of buffer
- ▶ For scope-buffered projects such as Agile, this means two sprints focused on “must-have” requirements, buffered by one sprint reserved for “desirements”



- ▶ For budget-buffered projects, this means \$2 of planned cost + \$1 of buffer
- ▶ For more complex, less predictable projects, more buffer may be appropriate
- ▶ For simpler, more predictable projects, less buffer may be sufficient

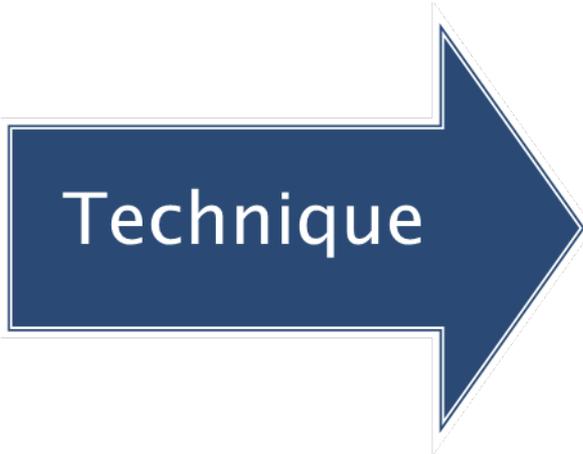


# Buffering Techniques: Key Takeaways

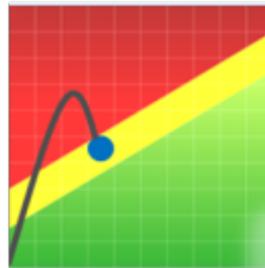
- ▶ The type(s) of buffer selected must align with customer and stakeholder preferences and circumstances
- ▶ When in doubt, apply the 2:1 rule of buffering, regardless of what type(s) of buffer may be appropriate for the project
- ▶ Agile often makes sense when scope is the primary buffer, but not necessarily for schedule- and budget-buffered IT projects
- ▶ Note that Agile projects often have both scope and schedule buffers—this can be great, as long as the total buffer adds up to the desired level (50%, using the 2:1 rule)
- ▶ It is important to plan out all known tasks, dependencies, and resource assignments, regardless of the type of buffer or project methodology selected



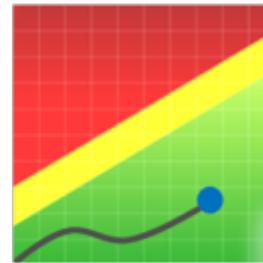
# Objective: Improve Portfolio Reliability



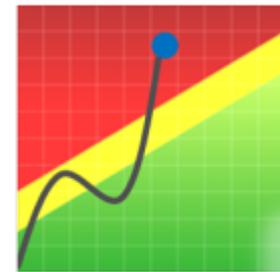
## The Buffer Protection Index



*Project A*



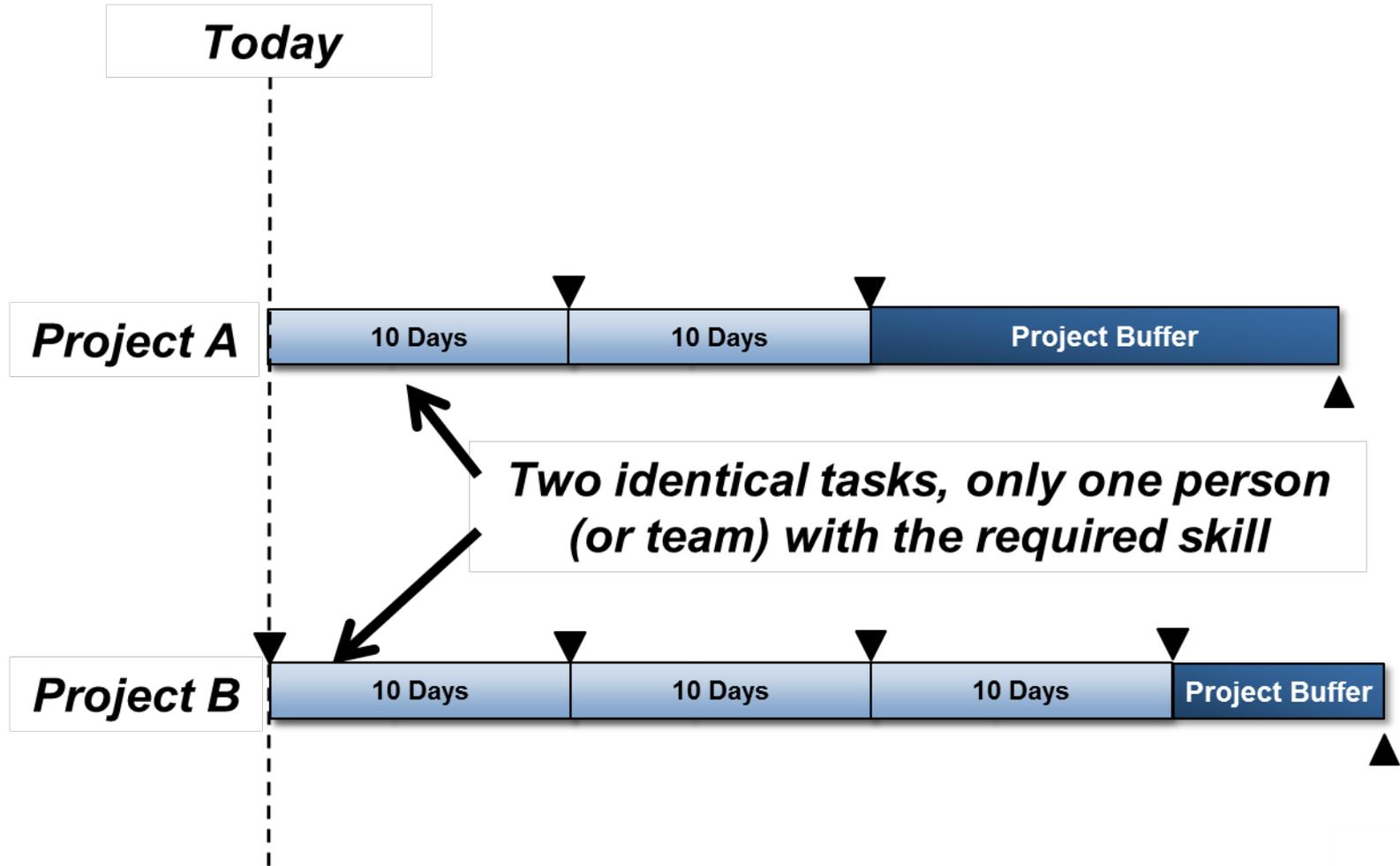
*Project B*



*Project C*



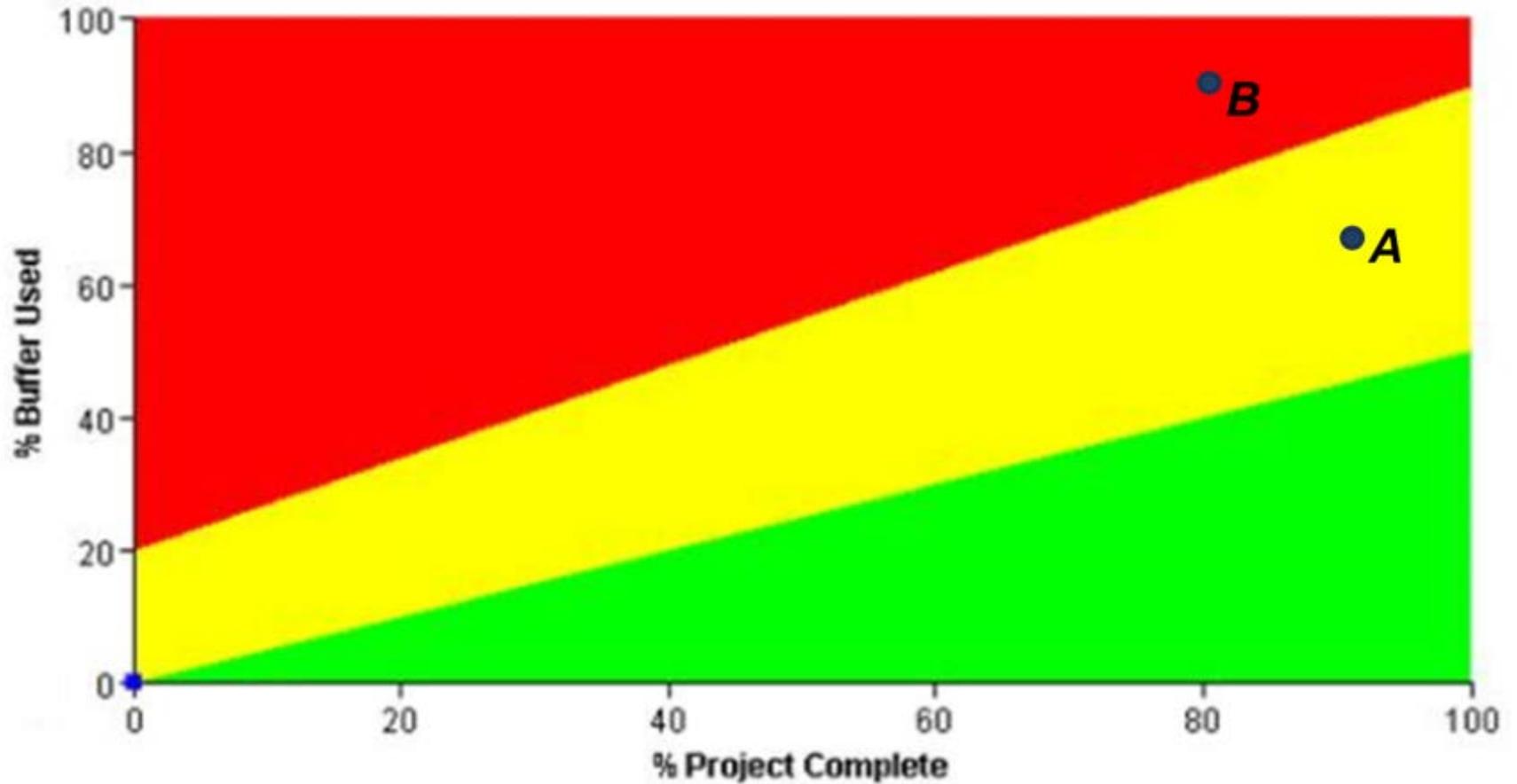
# Which Project Gets the Critical Resource?



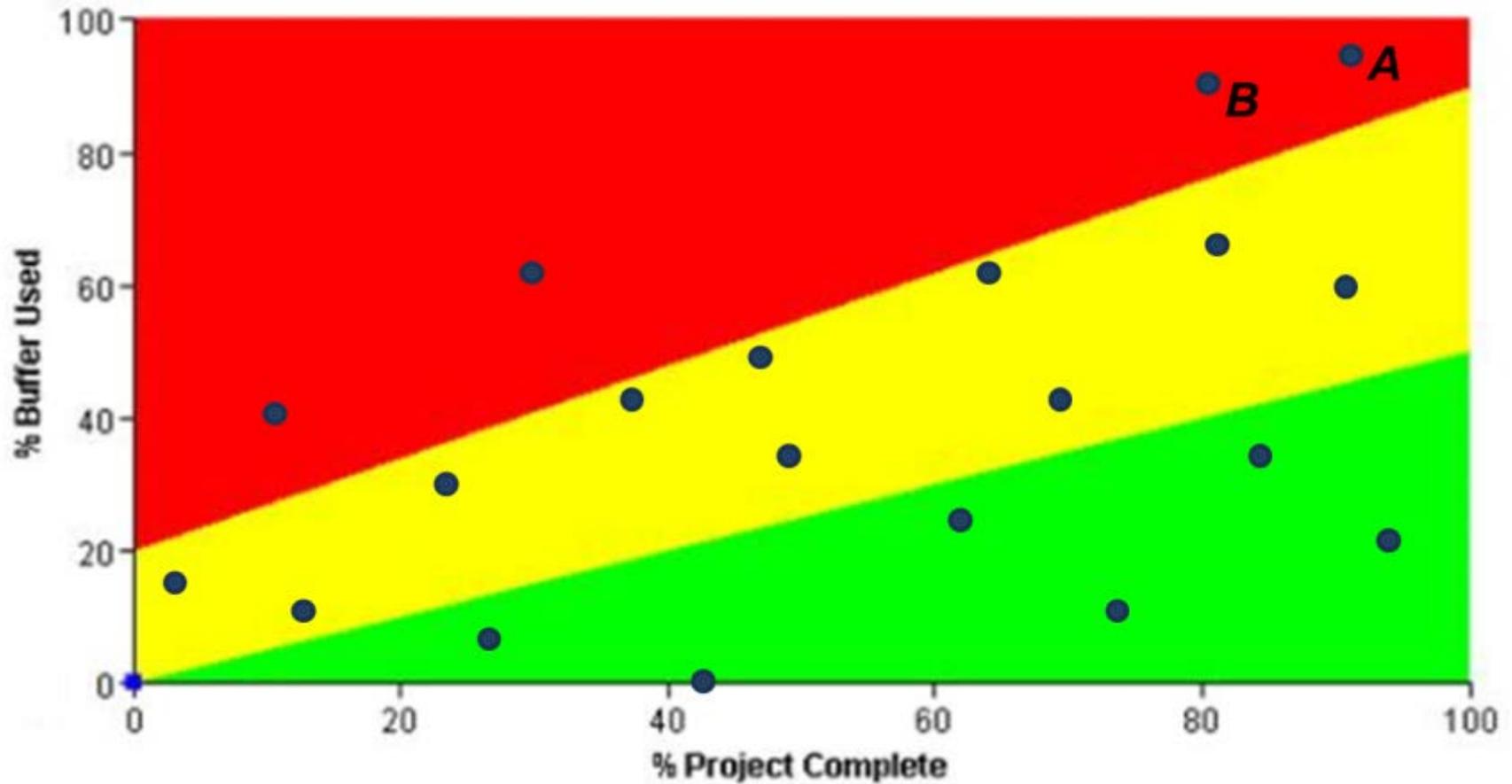
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# The Buffer Protection Index (BPI)



# The Buffer Protection Index (BPI)



# BPI-based Portfolio Management: Key Takeaways

- ▶ Simple and effective way to focus Portfolio Governance
- ▶ Fosters a strong “unity of purpose” among Executives, PMs, Scrum Masters, and Team Members
  - This can help accelerate Agile adoption enterprise-wide, extending the strong team emphasis from the Scrum Team to the entire organization
- ▶ Encourages “relay race” behavior, with all Team Members looking to increase, conserve, and protect buffers at every opportunity
  - This further enhances Agile’s emphasis on velocity
- ▶ Complements Staggering, Single-Tasking, and Eliminating Task-level Commitments, and applies Resource Balancing at the portfolio level
- ▶ Can complement other techniques such as Earned Value Management (EVM), but most organizations find it easier and more effective to just use BPI



# Objective: Manage Both Agile and Non-Agile Projects in the Same Portfolio

Technique

Show All Buffers as  
Time-Based

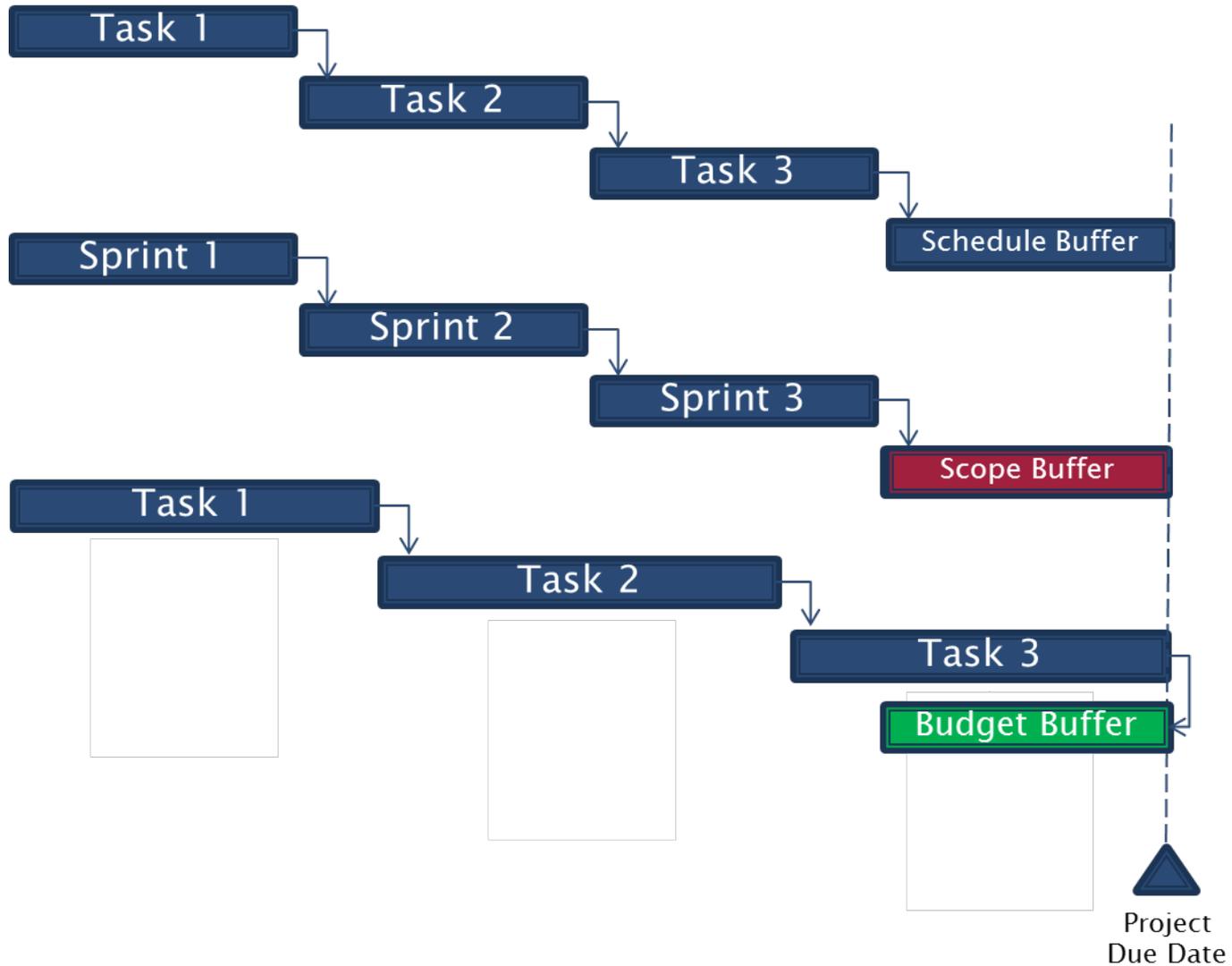


# Showing All Buffers as Time-Based

- ▶ Project managers tend to prefer a schedule view—such as a Gantt chart—to show all tasks being executed in a logical manner over a defined project duration
- ▶ Project managers intuitively know how to translate between budget, scope, and schedule
  - For example, we might “buy schedule” by increasing budget or sacrificing scope
- ▶ If we can translate budget and scope into schedule, then we can also show all project’s buffers—whether budget, scope, schedule, or some combination of the three—as time-based

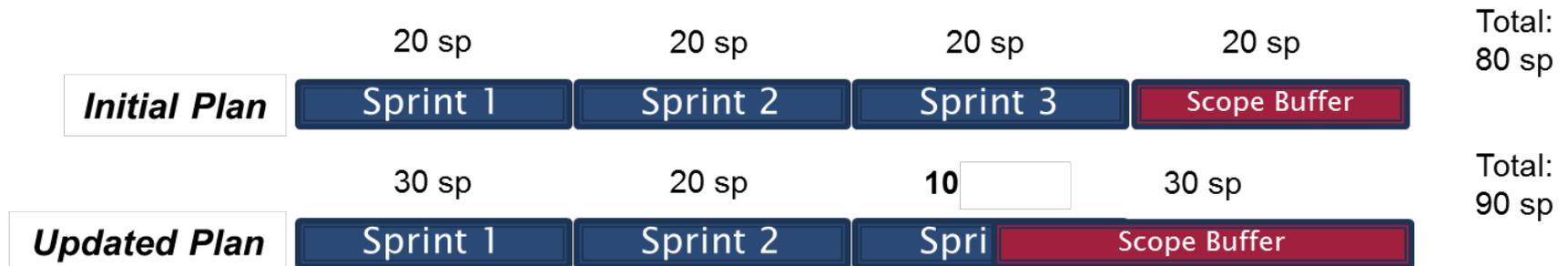


# How to Show All Buffers As Time-Based



# Time-Based Buffering for Scope-Buffered (Agile) Projects

- ▶ Agile/Scrum practitioners often prefer to think in terms of velocity, or “story points per sprint.”
  - If actual velocity is higher than planned, it means we have added story points to our time-based scope buffer



- If actual velocity is lower than planned, it means we have consumed story points from our time-based scope buffer.



# Showing All Buffers as Time-Based: Key Takeaways

- ▶ In order for IT executives to optimize their project portfolios, buffers must be visible, and represented in an “apples-to-apples” manner
- ▶ Not all IT projects are well-suited for Agile, so it is important to maintain “right tool for the job” flexibility in project methodology
  - Many attempts at “Agile Transformation” have failed because of overzealous attempts to mandate Agile for all IT projects
- ▶ Showing all buffers as time-based is usually the most intuitive for executives, project managers, and team members
  - Agile’s velocity-based approach can easily be translated into time-based buffering
- ▶ Helping one project by using buffer from another is simple and straightforward
- ▶ Don’t be too worried about the “pregnant woman” scenario



# Where Do These Techniques Come From?

	Technique	Primary Purpose
Critical Chain Project Management (CCPM)	Project Staggering	<ul style="list-style-type: none"> <li>• Speed Portfolio Execution</li> <li>• Expose Resource Bottlenecks</li> </ul>
CCPM, Agile, others	Single-Tasking	<ul style="list-style-type: none"> <li>• Speed Project Execution</li> <li>• Improve Project Reliability</li> </ul>
CCPM	Eliminating Task-Level Commitments	<ul style="list-style-type: none"> <li>• Speed Project Execution</li> <li>• Improve Project Reliability</li> </ul>
Lean	Process VSA	<ul style="list-style-type: none"> <li>• Tighten Scope</li> <li>• Reduce Complexity</li> </ul>
CCPM, Agile, others	Buffering Techniques	<ul style="list-style-type: none"> <li>• Improve Project Reliability</li> </ul>
CCPM	Buffer Management Techniques	<ul style="list-style-type: none"> <li>• Improve Portfolio Reliability</li> </ul>
Fortezza Consulting	How to Manage a Hybrid Agile / Non-Agile IT Project Portfolio	<ul style="list-style-type: none"> <li>• “Best Tool for the Job” Flexibility</li> <li>• Helps Avoid Zealotry</li> </ul>



# Typical Benefits of ACCLAIM Techniques

Technique	Primary Purpose	Typical Benefit
Project Staggering	<ul style="list-style-type: none"> <li>• Speed Portfolio Execution</li> <li>• Expose Resource Bottlenecks</li> </ul>	<ul style="list-style-type: none"> <li>• 20-30% More Project Completions</li> <li>• Opportunities for Even More Project Completions from Resource Balancing</li> </ul>
Single-Tasking	<ul style="list-style-type: none"> <li>• Speed Project Execution</li> <li>• Improve Project Reliability</li> </ul>	<ul style="list-style-type: none"> <li>• 30-40% More Project Completions</li> <li>• 25-30% Improvement in Reliability</li> </ul>
Eliminating Task-Level Commitments	<ul style="list-style-type: none"> <li>• Speed Project Execution</li> <li>• Improve Project Reliability</li> </ul>	<ul style="list-style-type: none"> <li>• 30-40% More Project Completions</li> <li>• 40-50% Improvement in Reliability</li> </ul>
Lean Process VSA	<ul style="list-style-type: none"> <li>• Tighten Scope</li> <li>• Reduce Complexity</li> </ul>	<ul style="list-style-type: none"> <li>• 30-50% More Project Completions</li> <li>• 30-50% Improvement in Reliability</li> </ul>
Buffering Techniques	<ul style="list-style-type: none"> <li>• Improve Project Reliability</li> </ul>	<ul style="list-style-type: none"> <li>• 30-50% Improvement in Reliability</li> </ul>
Buffer Management Techniques	<ul style="list-style-type: none"> <li>• Improve Portfolio Reliability</li> </ul>	<ul style="list-style-type: none"> <li>• 80-120% Improvement in Portfolio Reliability</li> </ul>
How to Manage a Hybrid Agile / Non-Agile IT Project Portfolio	<ul style="list-style-type: none"> <li>• Provide “Best Tool for the Job” Flexibility</li> <li>• Avoids Zealotry</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminates Risk of Enterprise-wide Failure to Adopt a Single Approach</li> </ul>
“Ultimate Scrum”	<ul style="list-style-type: none"> <li>• Tighten Scope</li> </ul>	<ul style="list-style-type: none"> <li>• 20-30% Faster Than Agile Sprints</li> </ul>



# How Much Total Improvement Can My Organization Expect From ACCLAIM?

Type of Benefit	Minimum Expectation	Realistic Expectation	High Expectation
Project Throughput <b>“Get More Done”</b>	2x	3x	5x
Reliability of Project Completions <b>“Avoid Failures”</b>	2x	2.5x	3x
Satisfied Customers	Very Satisfied	Highly Enthusiastic	Absolutely Ecstatic
Happy, Productive Staff	😊	😊😊	😊😊😊



# Where Can I Learn More?

- ▶ [Fortezza's blog](#)
- ▶ [The Project Manifesto book](#)
- ▶ ***A 4-day class to learn detailed Critical Chain planning techniques, and apply them in a project execution environment***
  - Offered by ProChain Solutions, Inc. (not advertised on their website...best to contact me for details)





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