Taiichi Ohno…

TPS = JIT + Deming

Kanban is the tool that enables these

http://www.limitedwipsociety.org

Yahoo! Groups Kanbandev
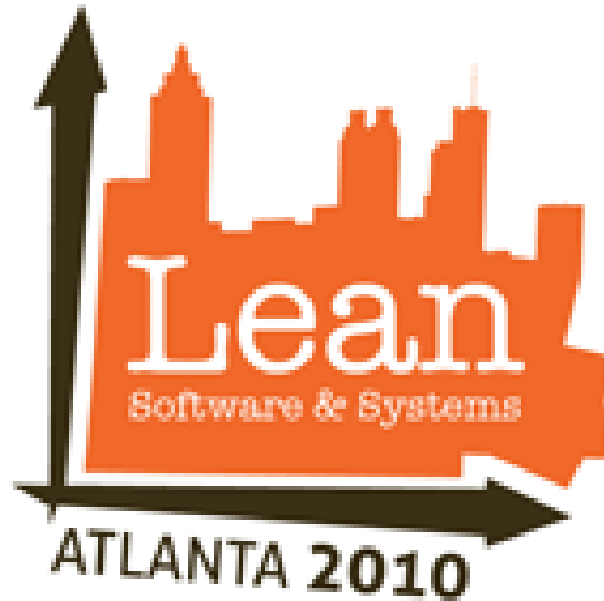
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atlanta2010.leanssc.org

YES WE KANBAN

limitedwipsociety.org

New Approaches to Managing Risk

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Let's provide a working definition…

Risk is…

likelihood of, & magnitude of,
the difference between
a desired outcome
and
an actual outcome

NO SURPRISES!

The theme of this talk

Manage risk with…

ALLOCATION!

What follows
are 3 ideas
that emerged from
Lean & Kanban practice
over the last 5 years

1. Managing Requirement Risk

Describe a market and its players

- ## Who is the cost leader?
  - (there can be only one)
- ## How are the other players differentiated?
  - What product features or services are offered that create that differentiation?
  - How much profit or market share is associated with those differentiators?
- ## Are there any niche players?
  - Don't compete in the whole broad market
  - Small but defensible market share
  - What is their niche?
  - How big a share does the niche represent?

Aligning with strategic planning is critical

- ## Table Stakes
  - Undifferentiated
  - Commodities
  - "must have"

- ## Differentiators
  - Drive customer choice/selection
  - Drive profits

- ## Spoilers
  - Spoil a competitors differentiators

- ## Cost Reducers
  - Reduce cost to produce, maintain or service and increase margin

Mapping features to strategic planning

Table Stakes
=> the minimal set of features to enter a market niche
=> Cost Leader

Differentiators
=> features that enable a differentiated profit or share opportunity
=> Differentiated Player or Niche Player

Spoilers
=> features that copy a profit or share driver of a competitor
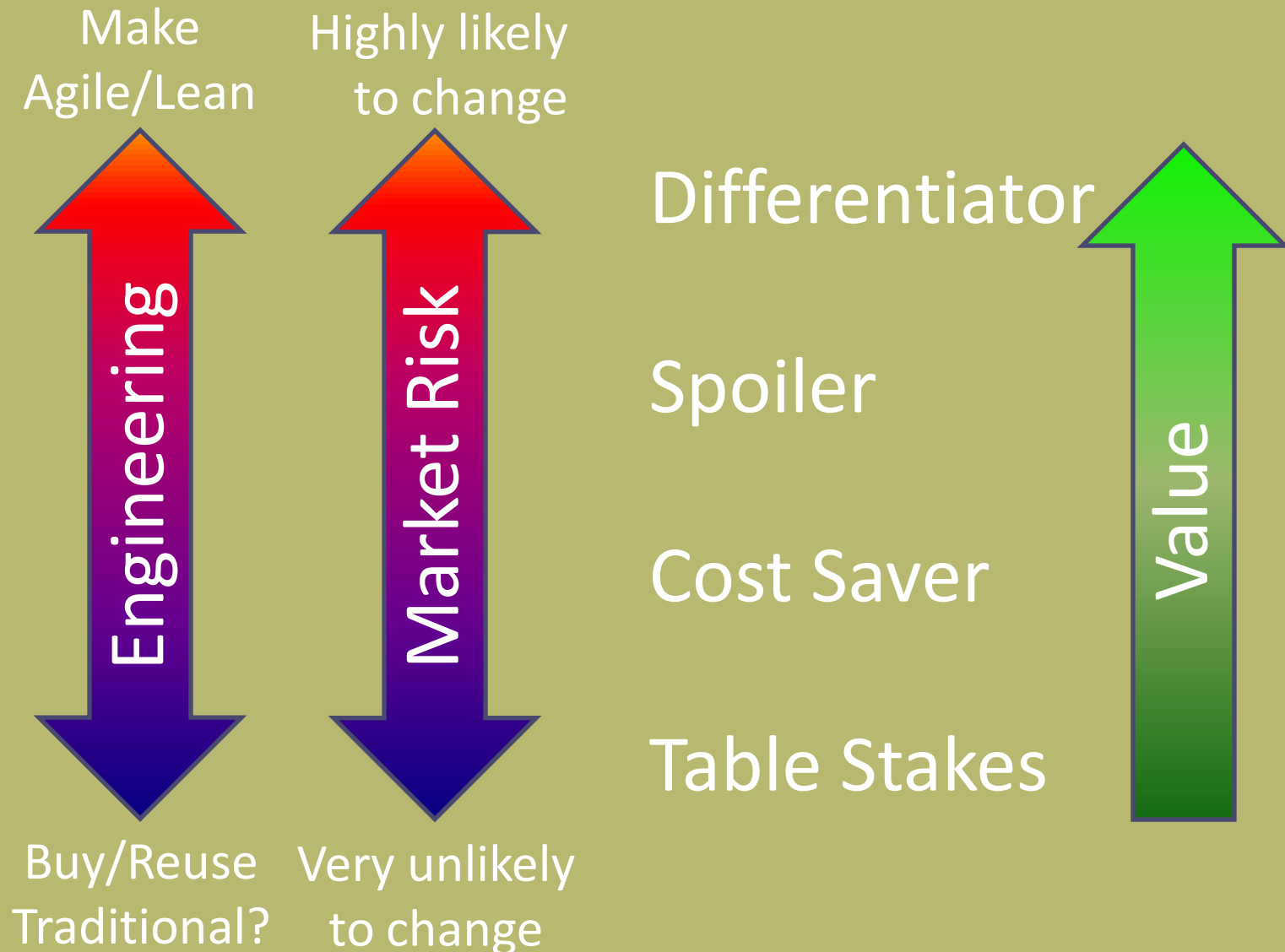
Cost Reducers
=> features same money
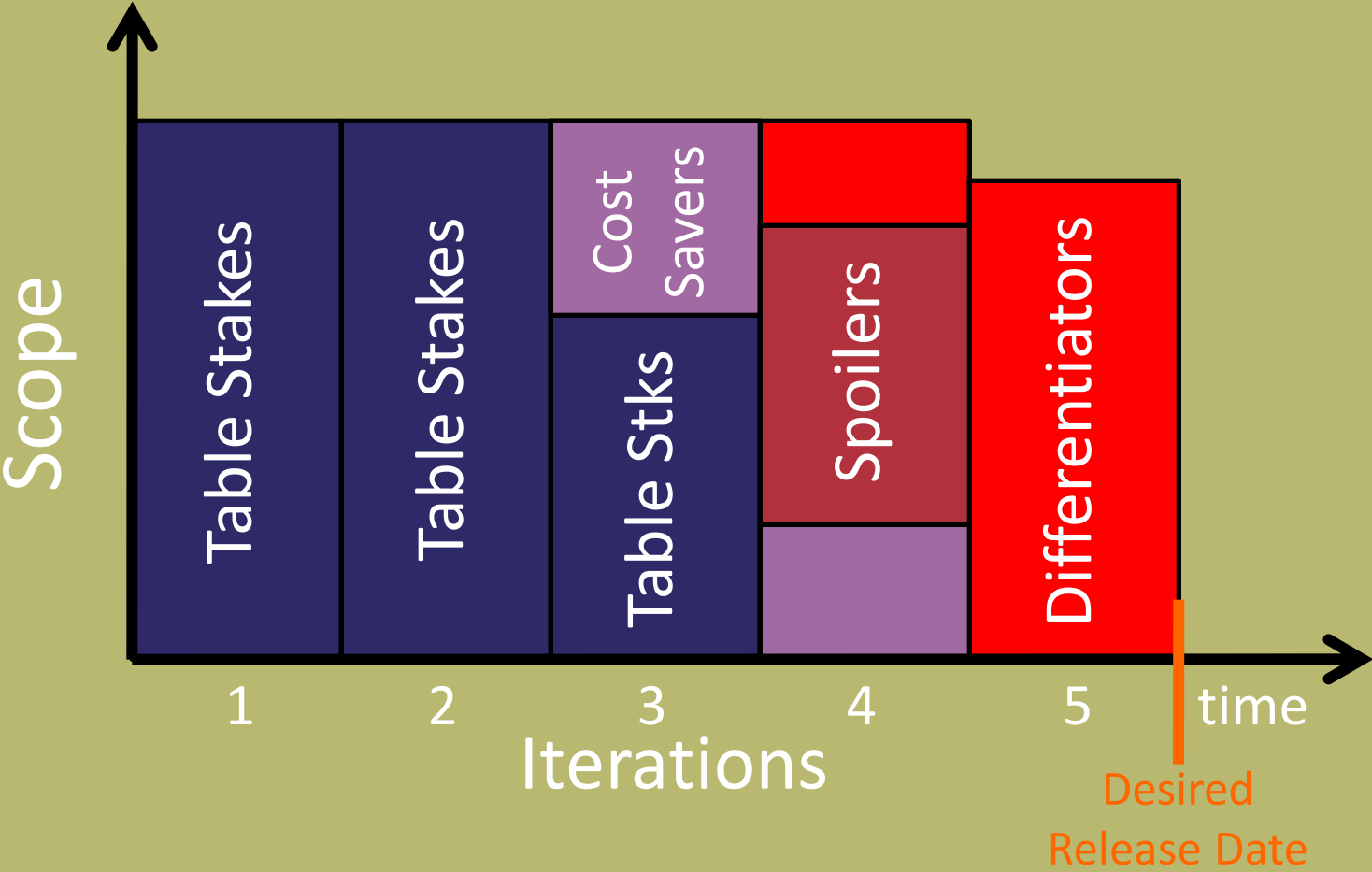=> most interesting to Cost Leader

Known to work for established/mature markets

Needs adapting for startups & emerging markets

Market Risk Varies by Requirement Type

Mapping requirements against iterations

As a result MMFs can be hugely variable in size

MMFs for commodities are large

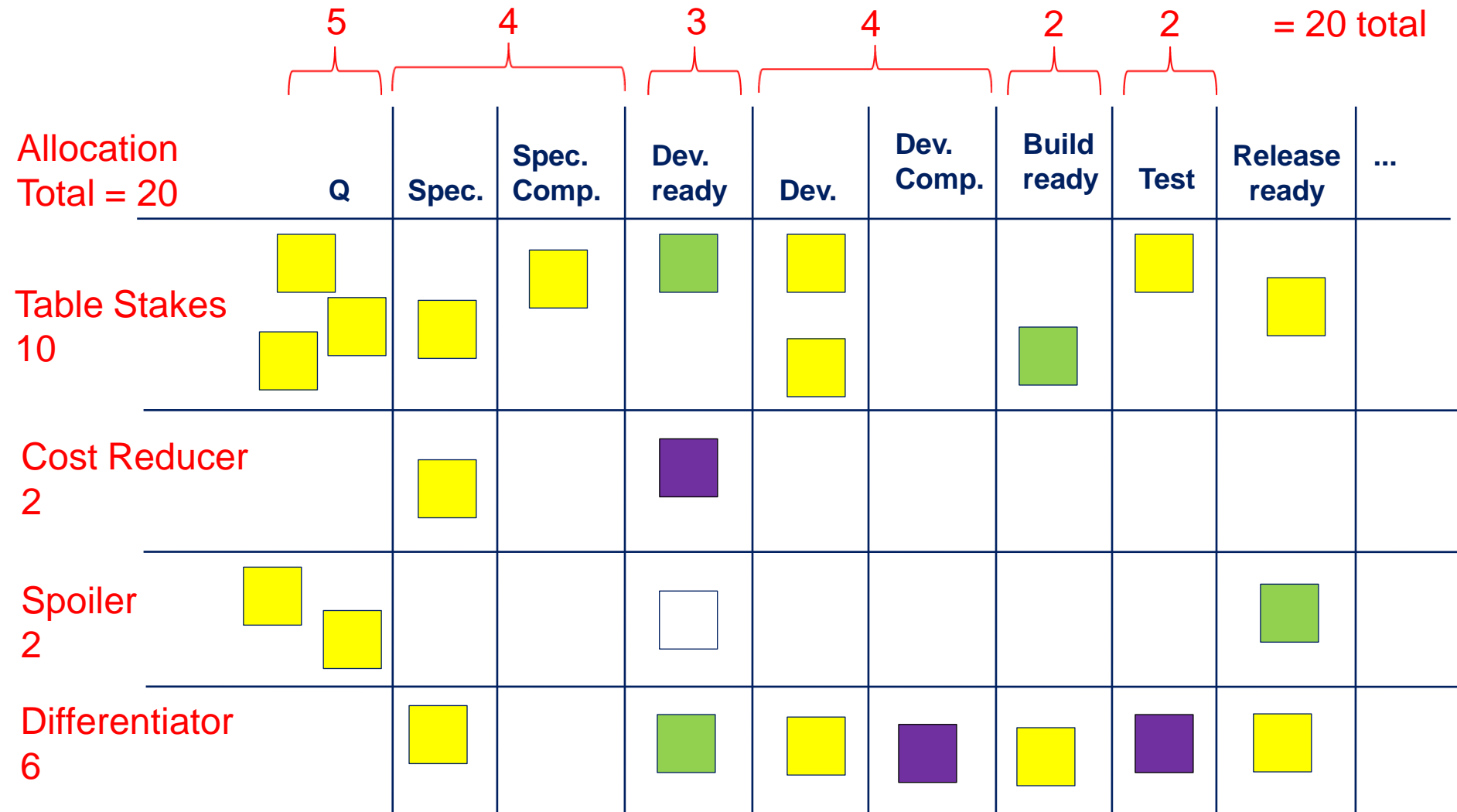MMFs for differentiators and spoilers are small

Size of MMF depends on stage in product lifecycle and strategic positioning

Hence MMF not a good unit of work for flowing through the lower tier of a Kanban board

Size variability interrupts flow

Kanban board with requirement type allocated by swim lane

Adapted from design courtesy Olav Maassen QNH

2. Managing Risk with Classes of Service

Generally speaking class of service should be defined according to *cost of delay* function
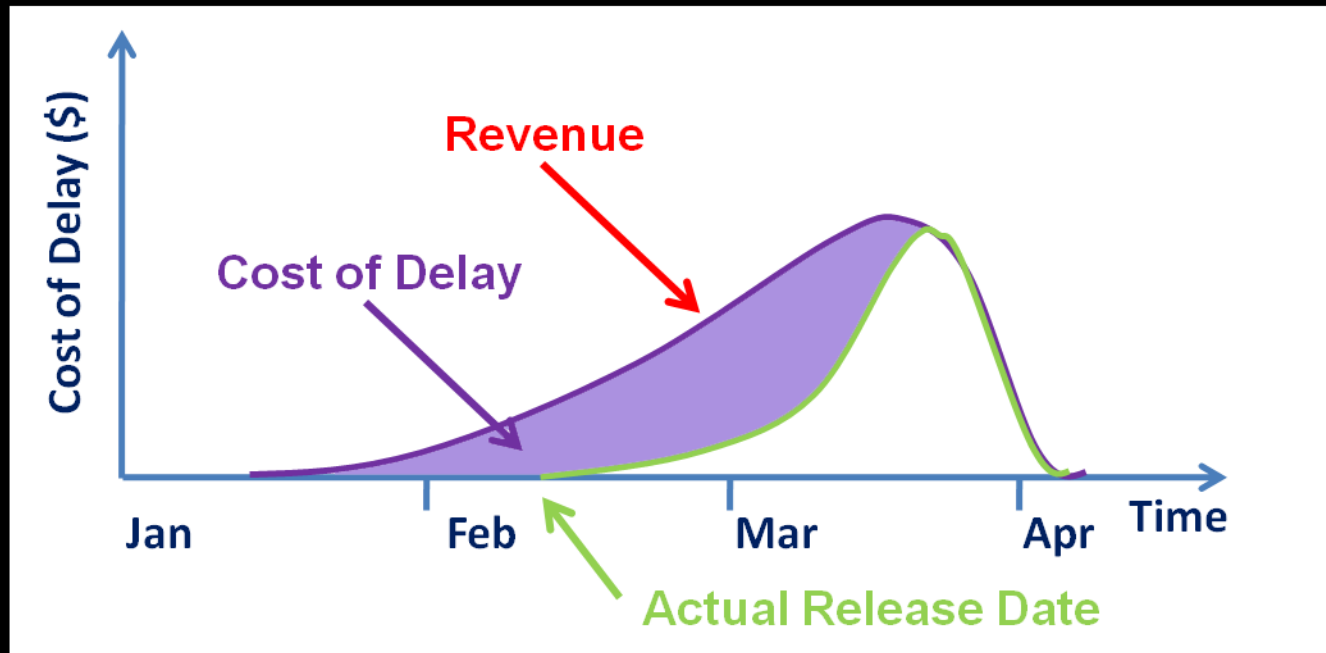
Cost of delay function for an online Easter holiday marketing promotion is difference in integral under two curves
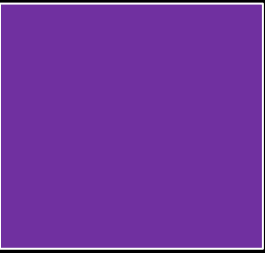
Example classes of service

- Expedite
- Fixed Delivery Date
  - Unit step cost of delay function (or near approximation)
- Standard Class
  - Linear tangible cost of delay function
- Intangible Class
  - Intangible cost of delay
    - Examples brand identity change, usability fix

Policies for Expedite Class of Service

Expedite "Silver Bullet"
corbismotion

- Expedite requests will be shown with white colored cards.
- Only one expedite request will be permitted at any given time. In other words, a kanban limit of 1 is assigned to the Expedite class of service.
- Expedite requests will be pulled immediately by a qualified resource. Other work will be put on-hold to process the expedite request.
- The kanban limit at any point in the workflow may be exceeded in order to accommodate the expedite request.
- If necessary a special (off-cycle) release will be planned to put the expedite request in production as early as possible.

Policies for Fixed Date Class of Service

- Fixed delivery date items will use purple colored cards.
- The required delivery date will be displayed on the bottom right hand corner of the card.
- Fixed delivery dates will receive some analysis and an estimate of size and effort may be made to assess the flow time. If the item is large it may be broken up into smaller items. Each smaller item will be assessed independently to see whether it qualifies as a fixed delivery date item.
- Fixed delivery date items will be held in the backlog until close to the point where they must enter the system in order to be delivered on-time given the flow time estimate.
- Fixed delivery date items will be given priority of selection for the input queue at the appropriate time.
- Fixed delivery date items will be pulled in preference to other less risky items. In this example, the will be pulled in preference to everything except expedite requests.
- Unlike expedite requests, fixed delivery date items will not involve putting other work aside or exceeding the kanban limit.
- If a fixed delivery date items gets behind and release on the desired date becomes less likely it may be promoted in class of service to an expedite request.

Policies for Standard Class of Service
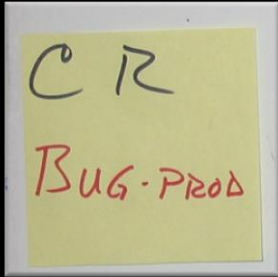
- Standard class items will use yellow colored cards
- Standard class items will be prioritized into the input queue based on an agreed mechanism such as democratic voting and will typically be selected based on their cost of delay or business value
- Standard class items will use First in, First out (FIFO) queuing approach to prioritize their pull through the system. Typically when given an option a team member will pull the oldest standard class item from an available set of standard class items ready for the next step in the process
- Standard class items will queue for release when they are complete and ready for release. They will be released in the next scheduled release
- No estimation will be performed to determine a level of effort or flow time.
- Standard class items may be analyzed for size. Large items may be broken down into smaller items. Each item may be queued and flowed separately

Policies for Intangible Class of Service

- Intangible class items will use green colored cards.
- Intangible class items will be prioritized into the input queue based on an agreed mechanism such as democratic voting and will typically be selected based on their intangible business value.
- Intangible class items will be pulled through the system in an ad hoc fashion. Team members may choose to pull an intangible class item regardless of its entry date so long as a higher class item is not available as a preference.
- Intangible class items will queue for release when they are complete and ready for release. They will be released in the next scheduled release.
- No estimation will be performed to determine a level of effort or flow time.
- Intangible class items may be analyzed for size. Large items may be broken down into smaller items. Each item may be queued and flowed separately.
- Typically, the preference would be to put aside an intangible class item in order to process an expedite request.
- It is therefore sensible and shows a good spread of risk when intangible class items are flowing through the system.

Kanban board with class of service allocations using color

Adapted from design courtesy Olav Maassen QNH
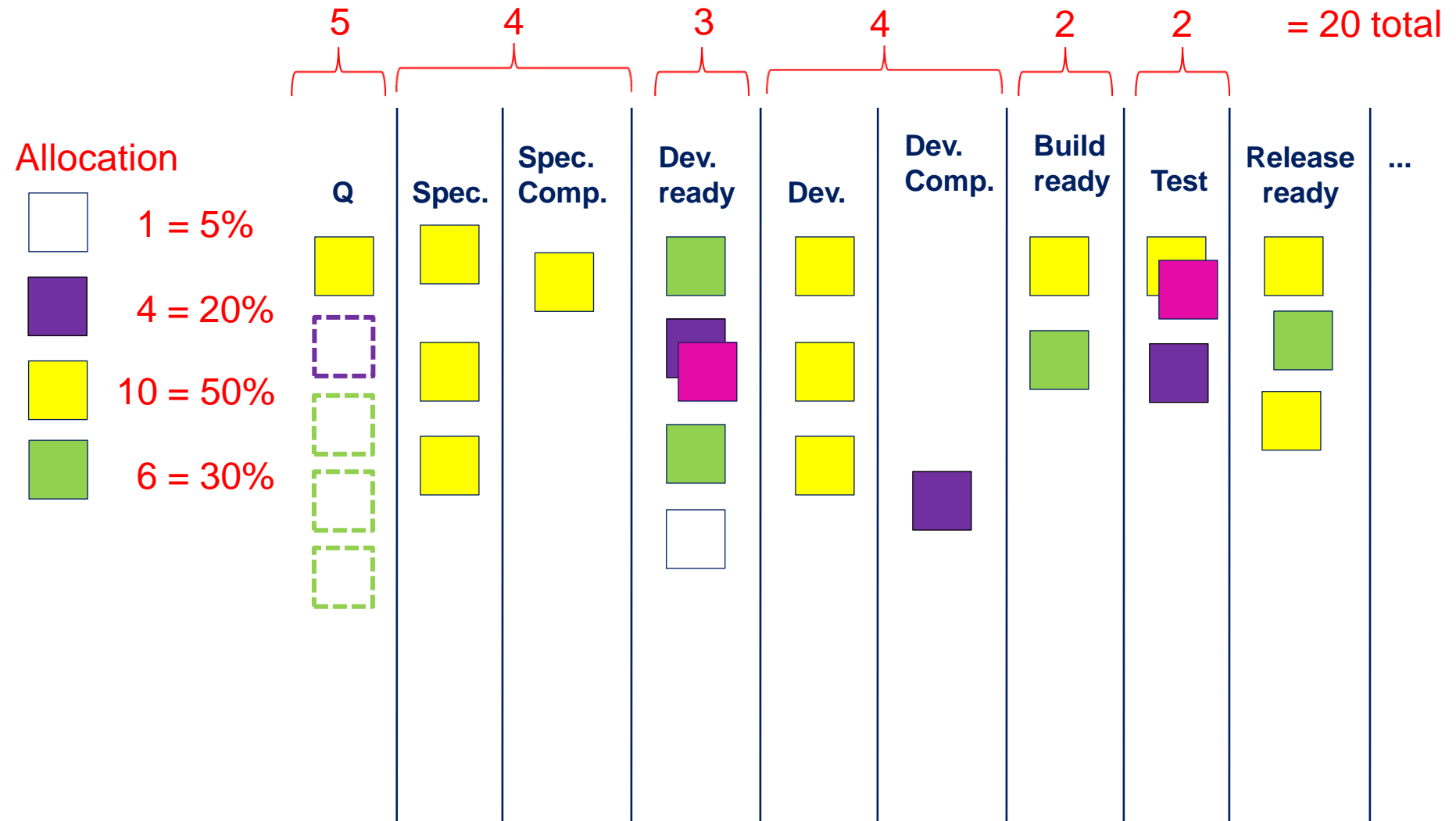
3. Managing Portfolio Risk

Allocate portfolio according to risk

Cash Cow – safe but boring

Growth Market – requires serious investment but known returns

Innovative new product – requires investment but risky

Portfolio Risk varies by Product Lifecycle
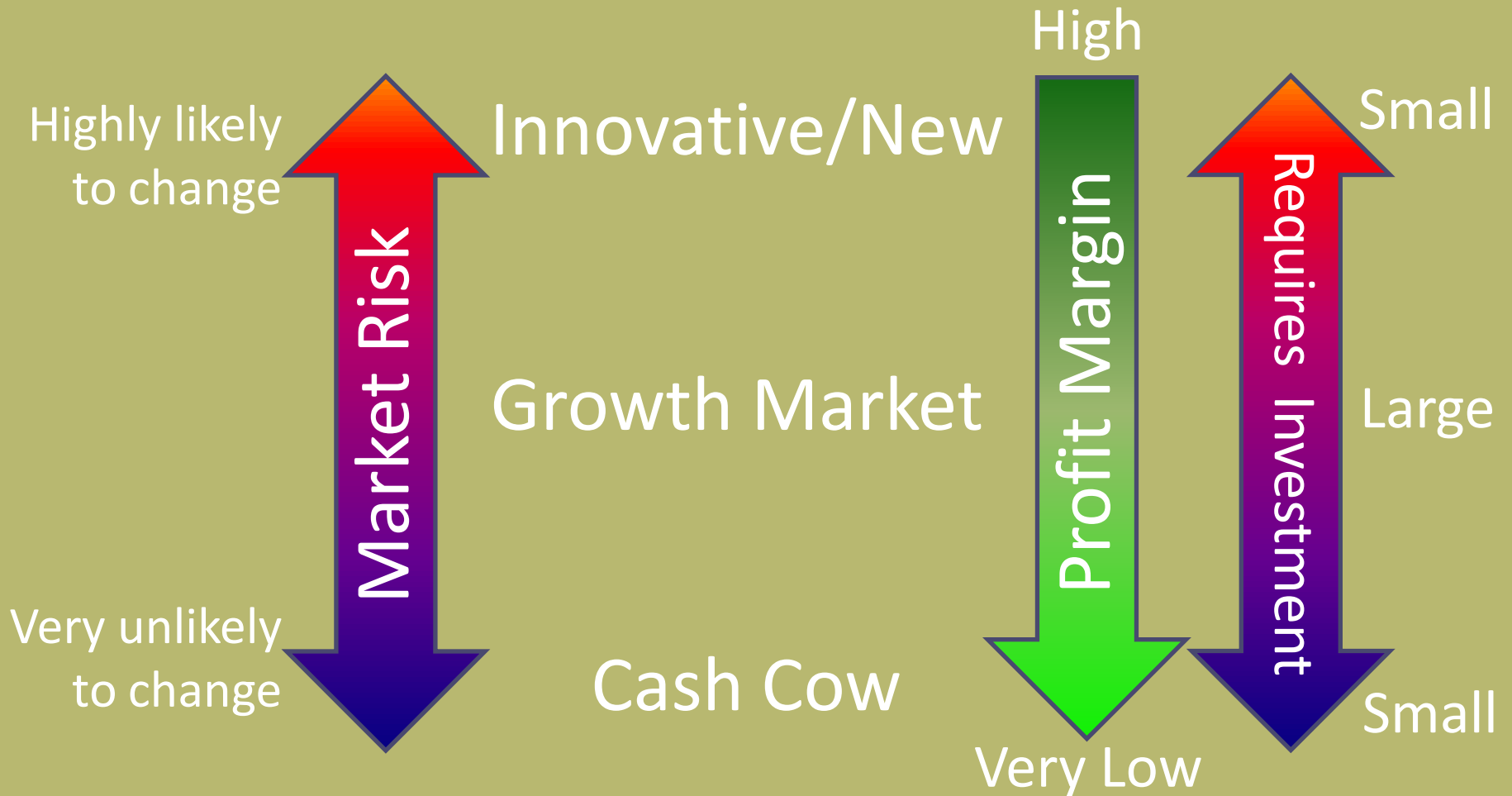
Similar to allocating a 401K…

Bonds – safe but boring

Large Caps – requires serious investment but known returns

Small Caps – requires investment but risky

Portfolio Resource Allocation by Kanban Initiative

Allocation Total = 100%	Kanban board/team for each initiative		
Cash Cows 10%	Initiative A 5%		Initiative B 5%
Growth Markets 60%	Initiative C 40%		Initiative D 20%
Innovative/New 30%	Initiative E 10%		Initiative K 5%
	Initiative F 5%	Initiative G 5%	Initiative H 5%

Allocate kanban limits within project/initiatives according to portfolio resource allocation

Adjust at portfolio level then adjust at project level

Kanban is proven in the field to allow very quick & easy resource level adjustments with highly predictable almost linear impact on throughput

Do not prioritize portfolio – allocate resources by risk

No projects!

Initiatives with Kanban workflow per line of business

Allocate headcount per initiative according to designation as cash cow, growth market or innovation

Thank you!

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About…

David Anderson is a thought leader in managing effective software teams. He leads a consulting firm dedicated to improving economic performance of knowledge worker businesses – improving agility, reducing cycle times, improving productivity and efficiency in technology development.

He has 25+ years experience in the software industry starting with computer games in the early 1980's. He has managed software teams delivering superior productivity and quality using innovative agile methods. He authored *MSF for CMMI Process Improvement* for Microsoft and is a co-author of the SEI Technical Note, *CMMI and Agile: Why not embrace both!*

David's book**, Agile Management for Software Engineering** – *Applying the Theory of Constraints for Business Results*, introduced many ideas from Lean and Theory of Constraints into software engineering.

David is a founder of the **Lean Software & Systems Consortium**, a not for profit dedicated to promoting better standards of professionalism in software development and introducing a professional accreditation program.
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