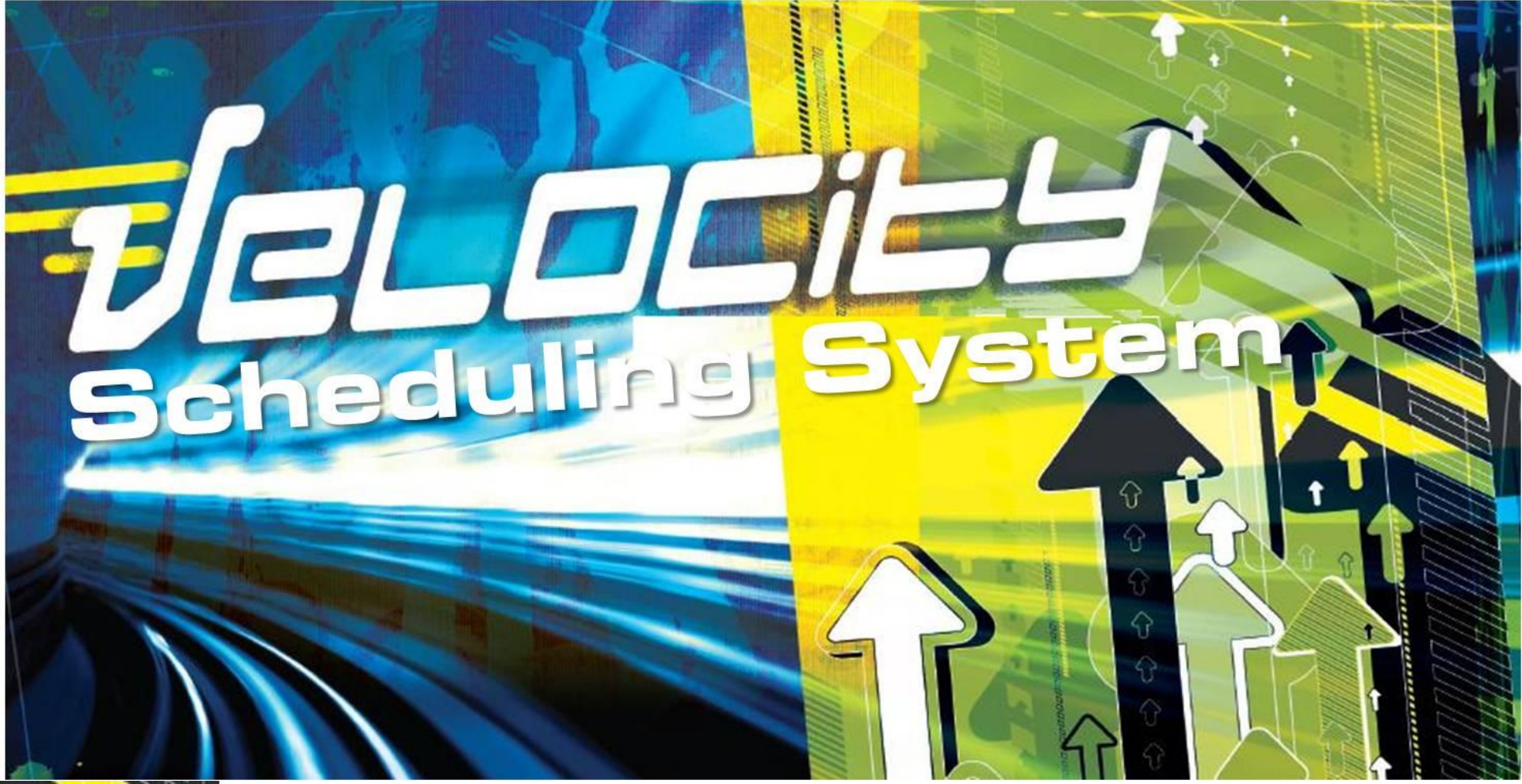

Session 3

Agenda …

- To Be Released & Velocity Boards Details
  - VB Examples & Time Traveler Examples
  - Multi-Bucket jobs and assemblies
  - Repairs & Emergencies
- To Be Released & Velocity Boards Customization
  - When you may need more than one board
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Implementing VSS

1. Cut work in process (WIP) in half. Release one for one to start.
2. Once it is half of your starting point, put up your Velocity Board (s) and To Be Release Board (s).
   - Details and Customizations
3. Determine release mechanism.
   - Create SOPs
4. Start measuring your Velocity and having 5 minute meetings.
   - Measurements!
5. Improve your full kit ability on the TBR board.
6. Start/Improve your detailed planning for the TBR board so that you minimize CCRs or uneven loads.
7. Track the “Whys” when you go into the red zone.
8. When you no longer go into the red zone, shorten your board and continue.

Board Examples

View these on the member site.

Time Traveler Examples

View these on the member site.

More Details

Multi-Bucket jobs and assemblies

Repairs & Emergencies

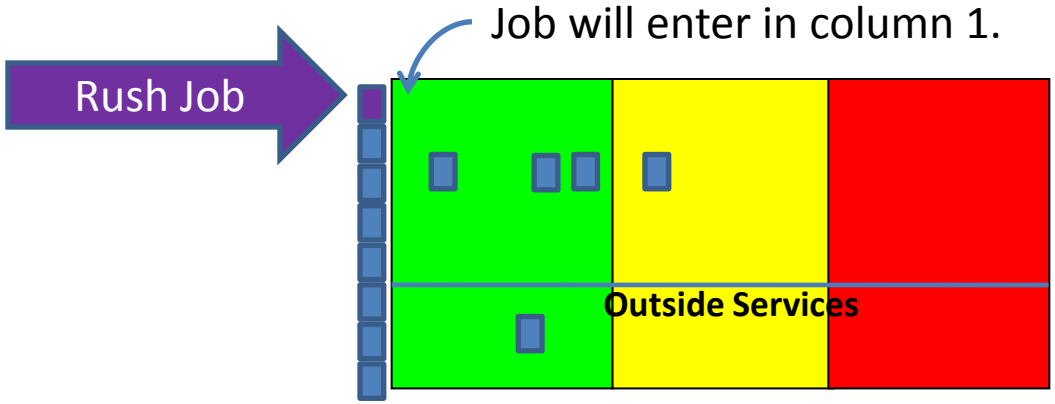
Multi-Bucket Jobs & Assemblies

If you do some assembly work and/or if you have jobs that span multiple buckets here are some tips:

- Be sure that you indicate on the Time Traveler that there are multiple buckets for a job so that an incomplete job doesn't get shipped.
- Be sure to indicate if the bucket is part of an assembly.
- Create a process for multi-bucket assemblies and multi-bucket jobs to wait for sister buckets.
  - Typically designating an area to aggregate these buckets is helpful.

Repairs & Emergencies

- Situation 1: You get a rush order from a customer (they should be paying a premium) due in 3 weeks.
- ➢ If your board duration is fast enough then you can just jump it to the top of the TBR list, do that.
  - If you have a 5/5/5 board and they need it in 3 weeks, then just put it at the top of the TBR list and remember to look at your Detailed Planning to make sure that you understand the effect.
- ➢ DON'T put rush job immediately on the VB.



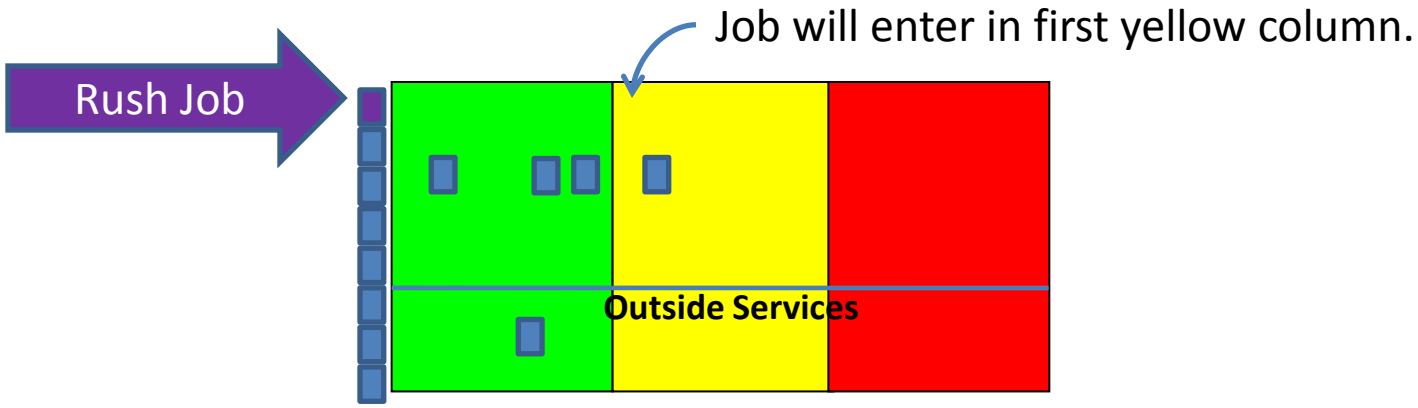
Repairs & Emergencies

- Situation 2: You get a rush order from your customer (they should be paying a premium) due in 2 weeks.

➢ If your board duration is NOT fast enough then put it at the top of the TBR Board and when it releases put it in the column that would make the end of the red zone the ship date.

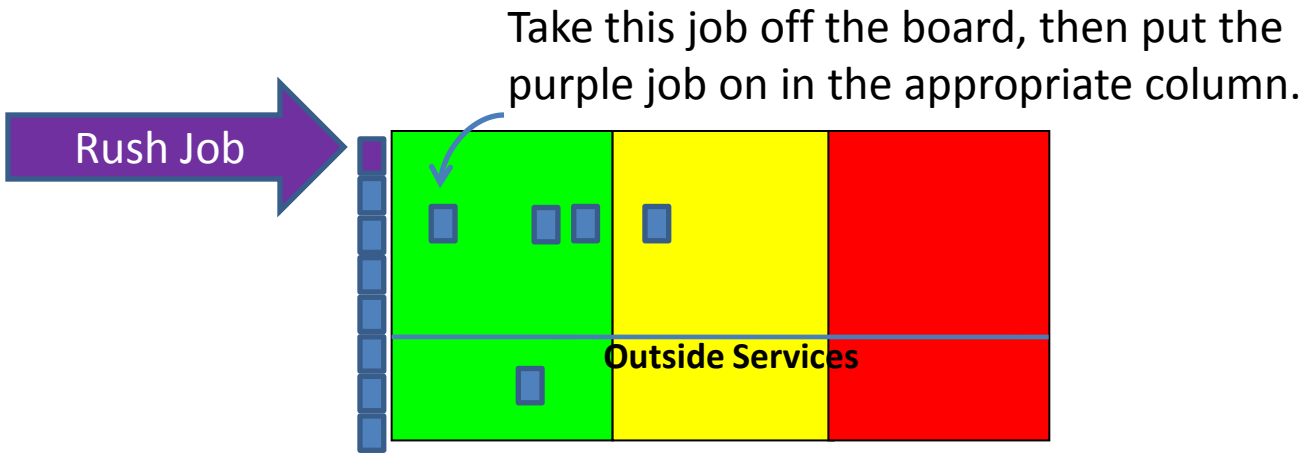
  - If you have a 5/5/5 board and you get a job that is due in 2 weeks, release it in first yellow column.

➢ DON'T put rush job immediately on the VB.



Repairs & Emergencies

- Situation 3: A job will NOT be coming off the board fast enough for you to wait and put the emergency job on.
- ➢ Take something that hasn't finished off BEFORE you put the emergency job on.
- ➢ Or if this is a frequent occurrence, you can create a "Frozen" row.



Repairs & Emergencies

If you do a lot (or all) of complex repairs here are some tips:

- If you don't know what your getting into until you get into it, release one Time Traveler for Discovery.
- Discovery = what parts, what processes, time estimates (setup, run, outside processing).
- Put the parts needed on a Full Kit List. Put this on the TBR Board in the appropriate number of buckets and in the appropriate order based on Detailed Planning.

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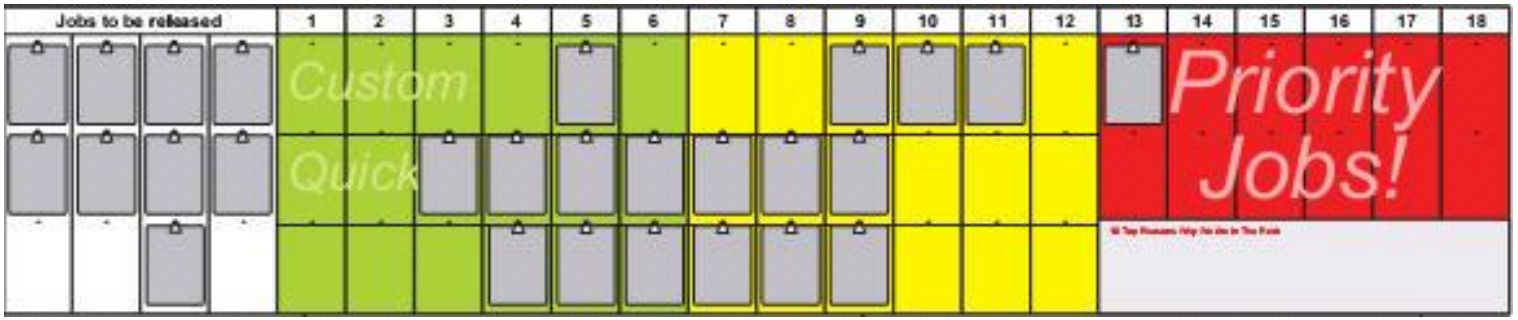
WARNING: Don’t customize if you don’t have to!

- Simple is best
- Don’t make the cure worse than the disease!

Very Short Jobs and Regular Jobs

- If you have very short jobs (e.g. 1-2 days) and at the same time your more regular work would fit a 6/6/6 board.
- You could create a board with 2 index rates.
- But before you do this, get your bucket size as small as possible.
- And, only add this complexity if you have enough of these really short jobs to warrant it. Otherwise just let those jobs come off your one board early.
- In the example below Quick jobs index more frequently than the Custom jobs. So one board accommodates both.

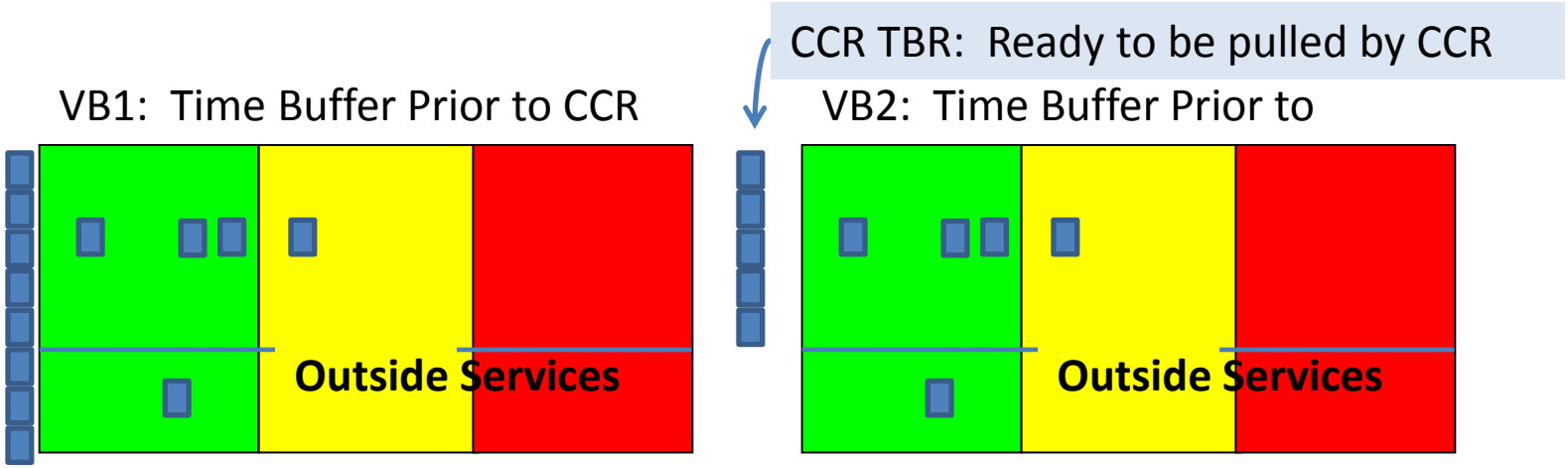


You might need more than one Velocity and/or TBR Board if …

- you have a permanent CCR
- you fabricate really big assemblies
- you have a completely stand alone operation
- Engineering/Design starves the TBR Board
- You have a “V Plant”

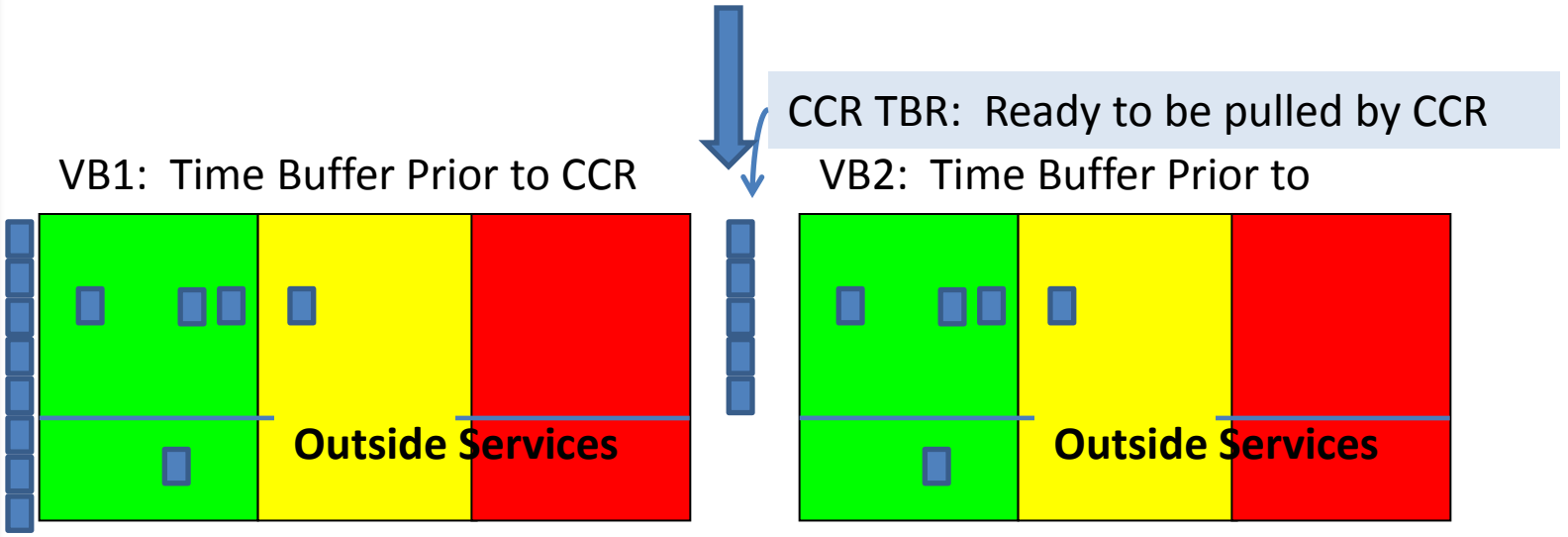
Permanent CCR

- This is less than 5% of the time.
- The permanent CCR can be a conversion step or assembly.
- Have a TBR and V Board that covers up to the CCR (VB1)
- Have a TBR and V Board that starts w/ release to the CCR (VB2)
- When the CCR is ready for one, it takes if room the CCR TBR.
- When the CCR takes one off the CCR TBR Board, another job is pull off the VB1 TBR and started on the VB1.
- When buckets finish on VB1 they move to the bottom of CCR TBR Board.



Permanent CCR – Assembly (BIG Fabs)

- Assembly is the CCR.
- This is less than 10% of the time. And is primarily needed for fab shops that do really big fabs and/or need everything before assembly can begin.
- 2 options:
  - Option 1, same as previous, just add a full kit list to the CCR TBR that makes sure all the components and buyout parts have arrived that are needed for assembly.

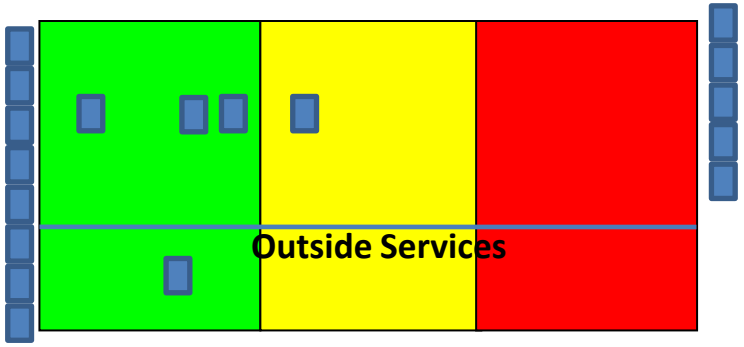


Permanent CCR – Assembly (BIG Fabs)

- Option 2, don't use VB2

CCR TBR: Ready to be pulled by CCR

VB1: Time Buffer Prior to CCR



Must have full kit to be released to assembly!

- Instead have an overall Velocity Board.

Stand Alone Process

- If you have a completely stand alone process that does not use any shared resources (except maybe quality and shipping), you can exclude it from your TBR/VB.
- You can have a separate TBR/VB or you may not need one.
  - If you have a screw machine that runs lights out and runs one part, you may not need a board for this. You just keep feeding it as needed.
- Don't take this too far. Generally we DON'T want to segment your resources. We only do it when there is enough work that it makes sense. This is why cells or mini factories are typically not a good idea.

Engineering / Design

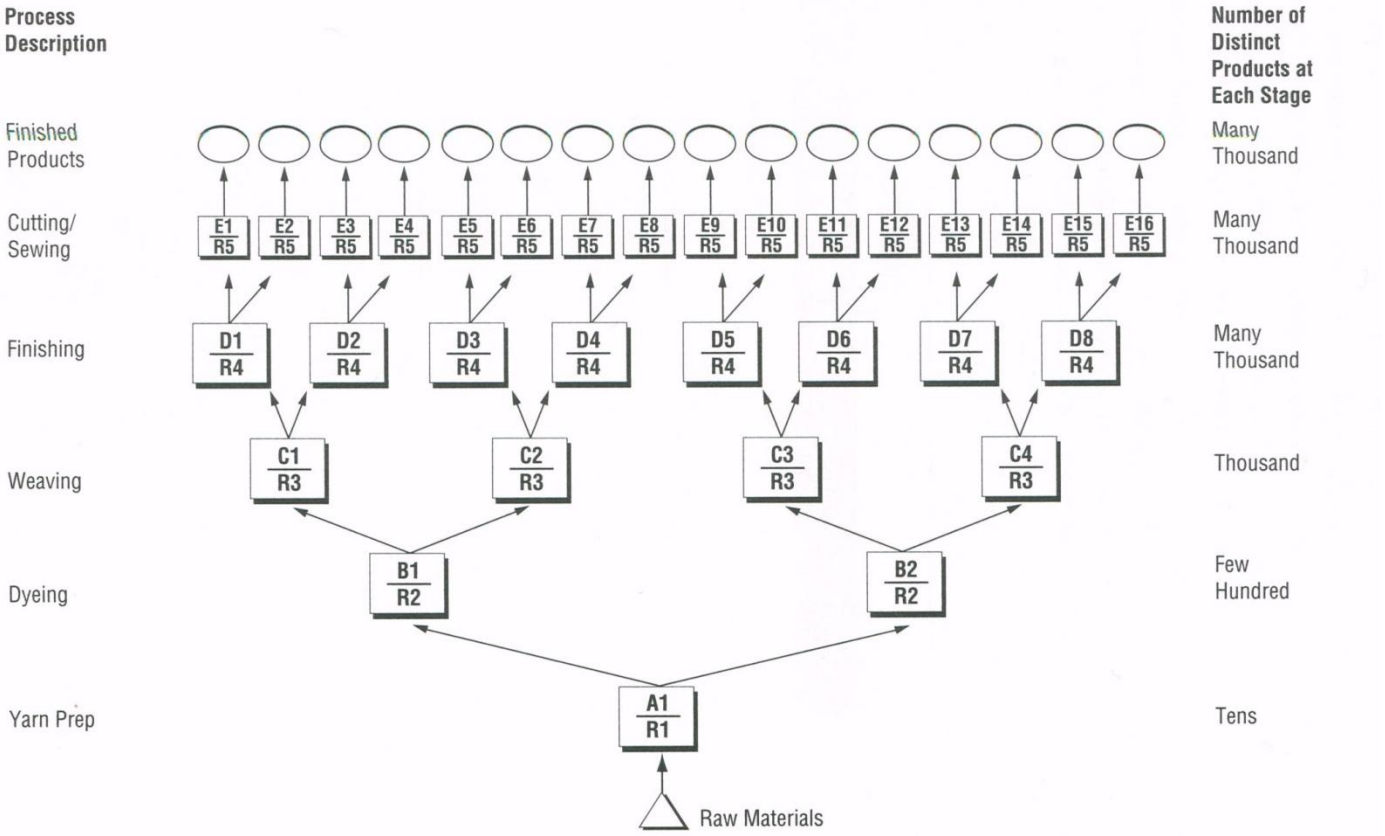
- If you find that Engineering / Design is starving your TBR Board and you ARE having them prioritize based on your mfg TBR Board release order then …
- Create a TBR and V Boards for them. Cutting WIP is essential as is prioritizing based on manufacturing's release order.
- Depending on how long it takes for engineering/design now, cut that in half and do equally quantities of green, yellow, red columns.
- If it's a long time duration, you can make each column represent a week or month or 3 days or whatever and then index at that frequency.
- You want to measure this department's ability to have full kit ready for mfg before mfg releases it.

“V Plant”

- V Plants really are NOT job shops but a few have found their way into this program.
- Let’s start with the description and if you think you are a V Plant
  - Please let me know by sending an email
  - And watch the special V Plant video in Session 3

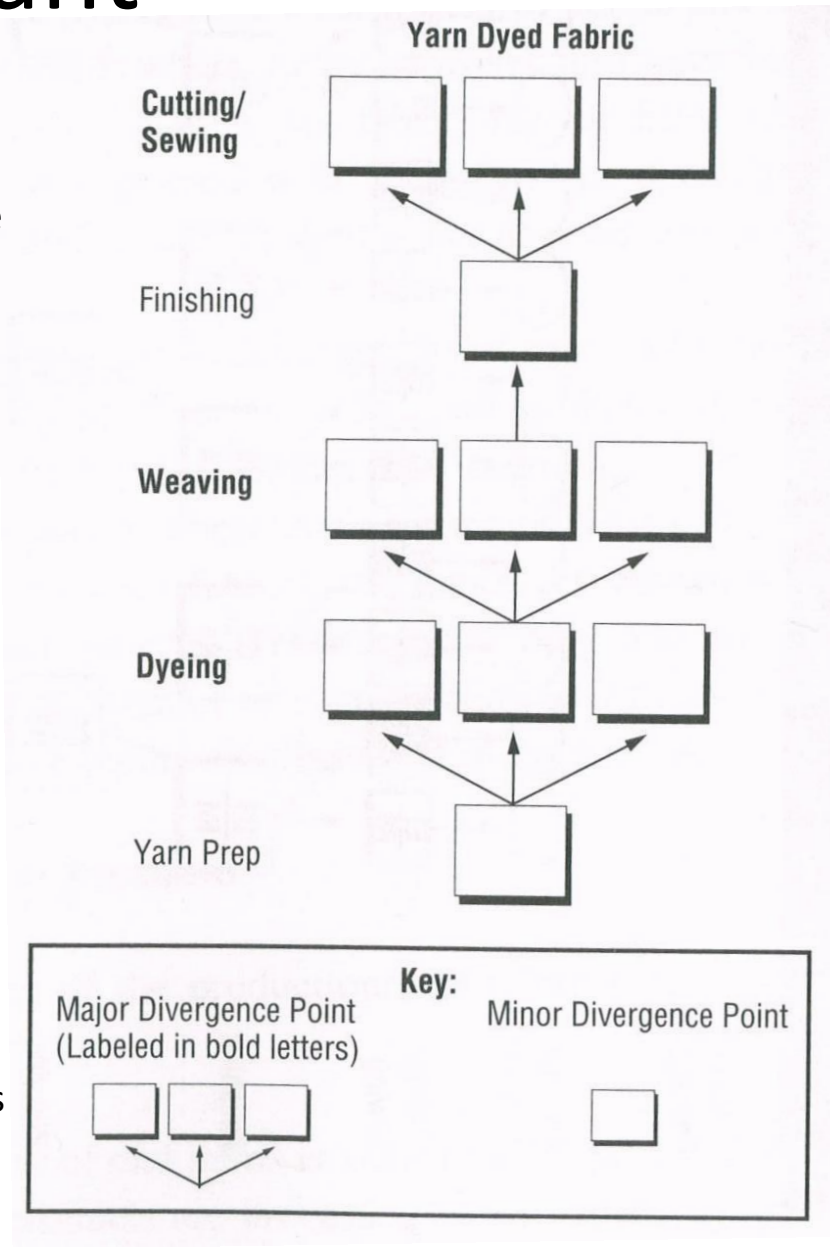
“V Plant”

- The number of end items is large compared to the number of raw materials.
  - Because divergence points may exist at any stage of production, by the time several stages have been completed, the number of different products being processed can be very large.
  - V Plants are “make-to-stock” &/or “make-to-order”.



“V Plant”

- All end items sold are produced in essentially the same way.
  - All products are processed through the same basic operations and in the same sequence. For example, in steel rolling mills, every piece of finished product goes through the same sequence of annealing, rolling, heat treat, and splitting.
- The equipment is generally capital intensive and highly specialized.
  - Evolution into capital intensive production is not difficult to understand. Since every product goes through the same sequence of operations, there are relatively few basic operations performed repeatedly. Because of the focus of improvement under traditional cost-based systems is to reduce the product’s direct-labor content, the “solution” chosen is specialized, high-volume, capital equipment. Direct labor content is effectively reduced. But the unfortunate side effect is a loss of production flexibility.



“V Plant” – Common Problems

- Each individual divergence point represents an opportunity for material misallocation (stealing).
- When there is a sequence of divergence points, the potential for misallocation increases arithmetically.
- Any resulting material misallocation results in excess inventory of some products and a shortage of others.
- In most cases, the excess inventory simply inflates finished-goods stocks, but sometimes it exists as high levels of work in process. Meanwhile, the material shortages creates stock-outs and a constant scramble throughout the system to expedite materials as necessary to fill customer orders.
- The types of problems depends on whether the system has a CCR.
  - If there is no CCR the mere existence of extra capacity, coupled with the numerous opportunities to misallocate materials is sufficient to cause significant over activation (to reduce costs) and excessively large inventories (of the wrong products).
  - If there is a CCR material misallocation and overproduction creates a large inventory in front of the CCR. Misallocation after the CCR create finish goods inventory of the wrong products and an even greater load on the CCR to make up for the misallocated material.

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Homework #3

- Post on the Member site:
  - "yes buts" and an update
  - draft of how your boards will look and how often you will index
  - draft of your full kit check list and Time Traveler
  - let me know if you think you're a V Plant

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Q&A/Coaching – get together with you Velocity Team, agree on your questions (agree on what you disagree on) and post your questions to the member site. Then attend the LIVE Coaching Session #3 to get the answers to your questions and to ask other questions.

