September 20th-22nd, 2022

MTech Users Conference

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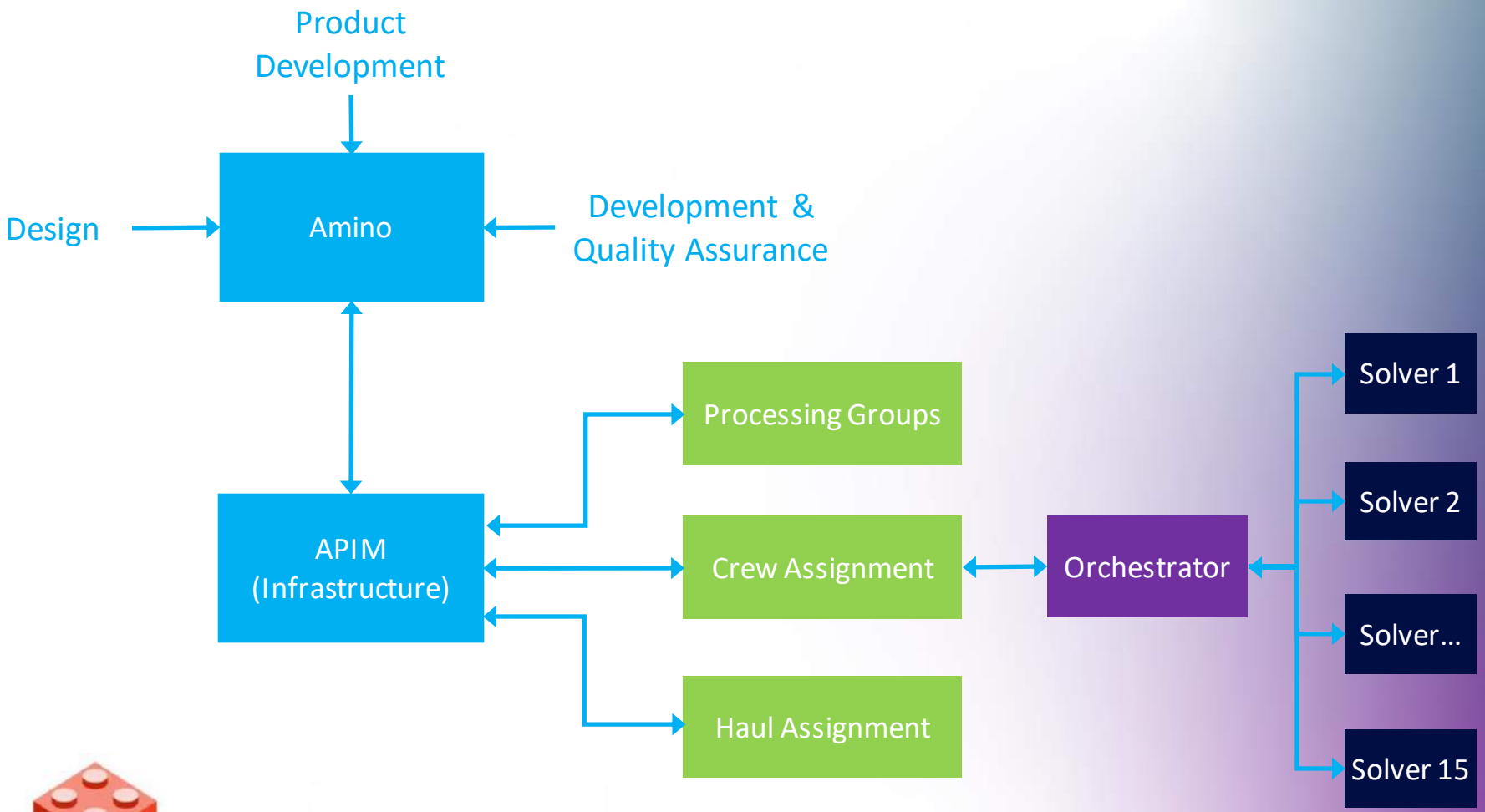
Marcel Cohen - President of MTech Systems

Chris Blosfeld - VP of Operations

Amino: Live Haul Scheduling, Deconstructing The Black Box

Live Haul Logistics



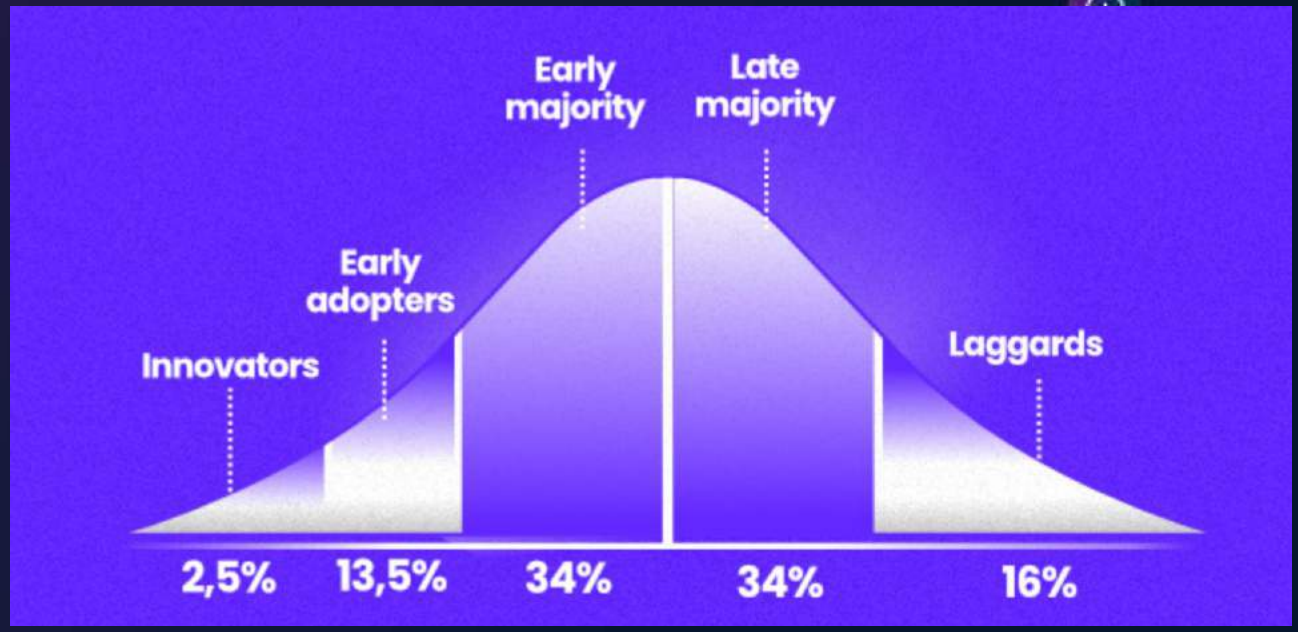
Creating Efficiencies in Logistics and Production

Live Haul Logistics

RL-powered schedules is the best answer,
but I don’t like it !

- He does not want the last load of the day
- We need to use more drivers
- This crew does not want to go to that farm
- We need to process this load between

  10:00AM and 11:45 AM

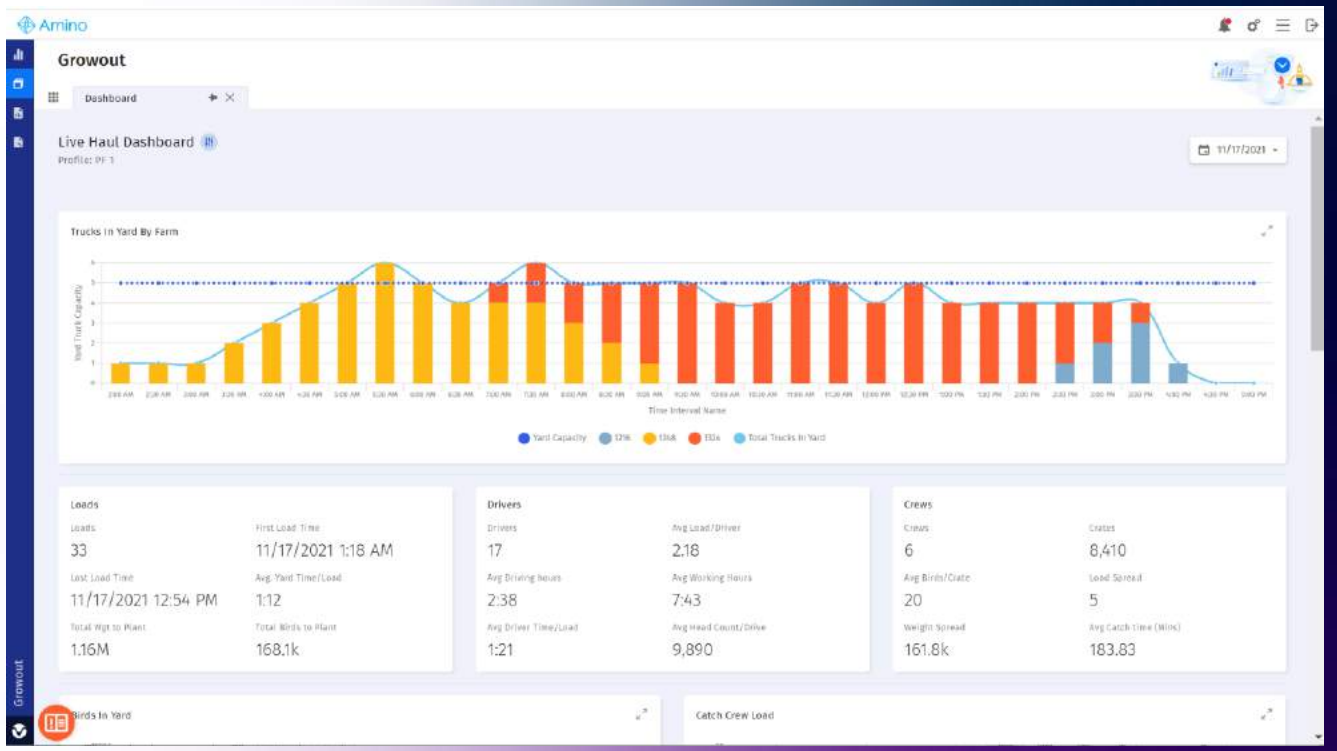


Creating Efficiencies in Logistics and Production

Live Haul logistic

What now?

- Split the problem in to three models
- Simplify the user experience by implementing a wizard
- Allow the user to adjust the answer in-between steps
- Simplify the final adjustments

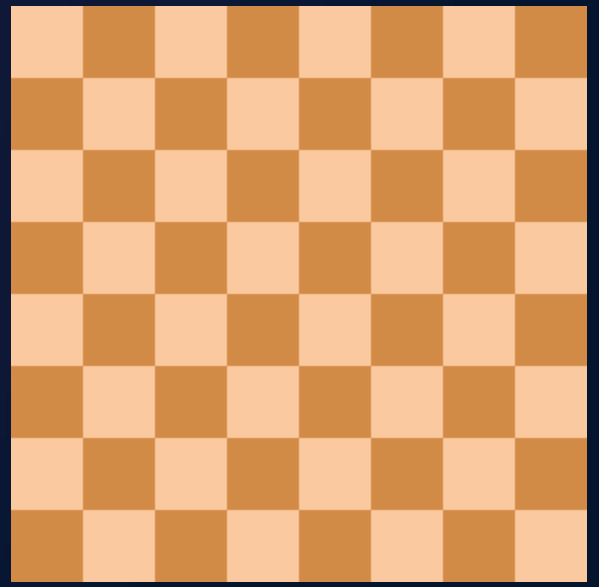


Creating Efficiencies in Logistics and Production

Solving the Crews with N-Queens

Nondeterministic polynomial time
NP-Complete Problems

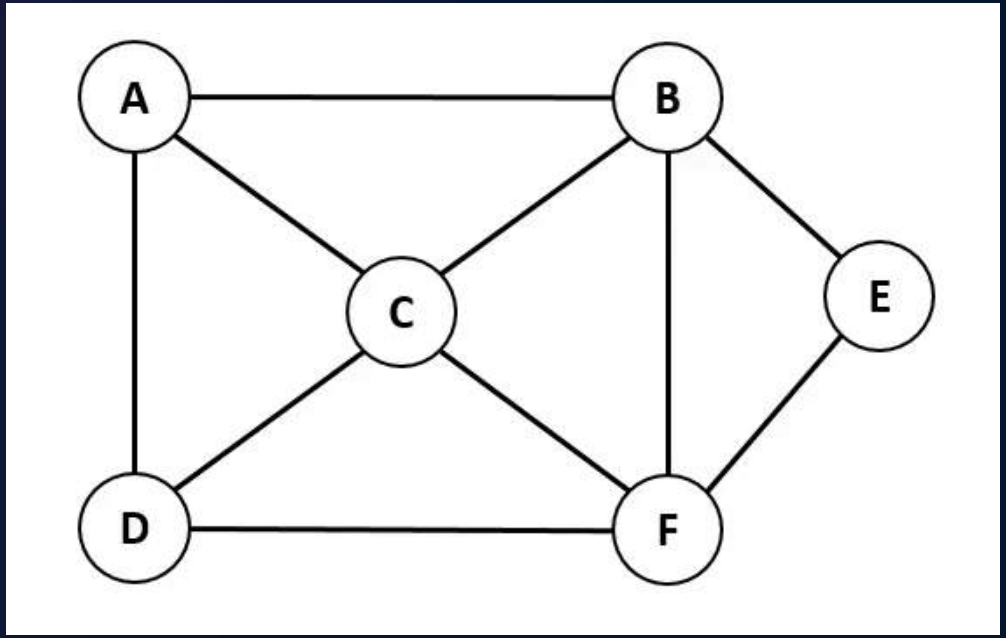
- This problem is about placing N-Queens on a chessboard that has N rows and N columns, without any of them attacking each other
- Known as branch and bounding, we assign crews to houses and see if it breaks rules
- We continue down these paths, moving back up if necessary



Creating Efficiencies in Logistics and Production

Solving the Drivers with Graph Coloring

- Every node in the graph is a load that needs to be picked up
- Nodes are connected if they are impossible for the same driver to complete
- Color the graph so that no connected nodes are the same color



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Thanks Gracias 謝謝 ارك ش Danke Спасибо ありがとう Obrigado

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