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Optimising Design for Mammalian Cell Culture: confidential client case study

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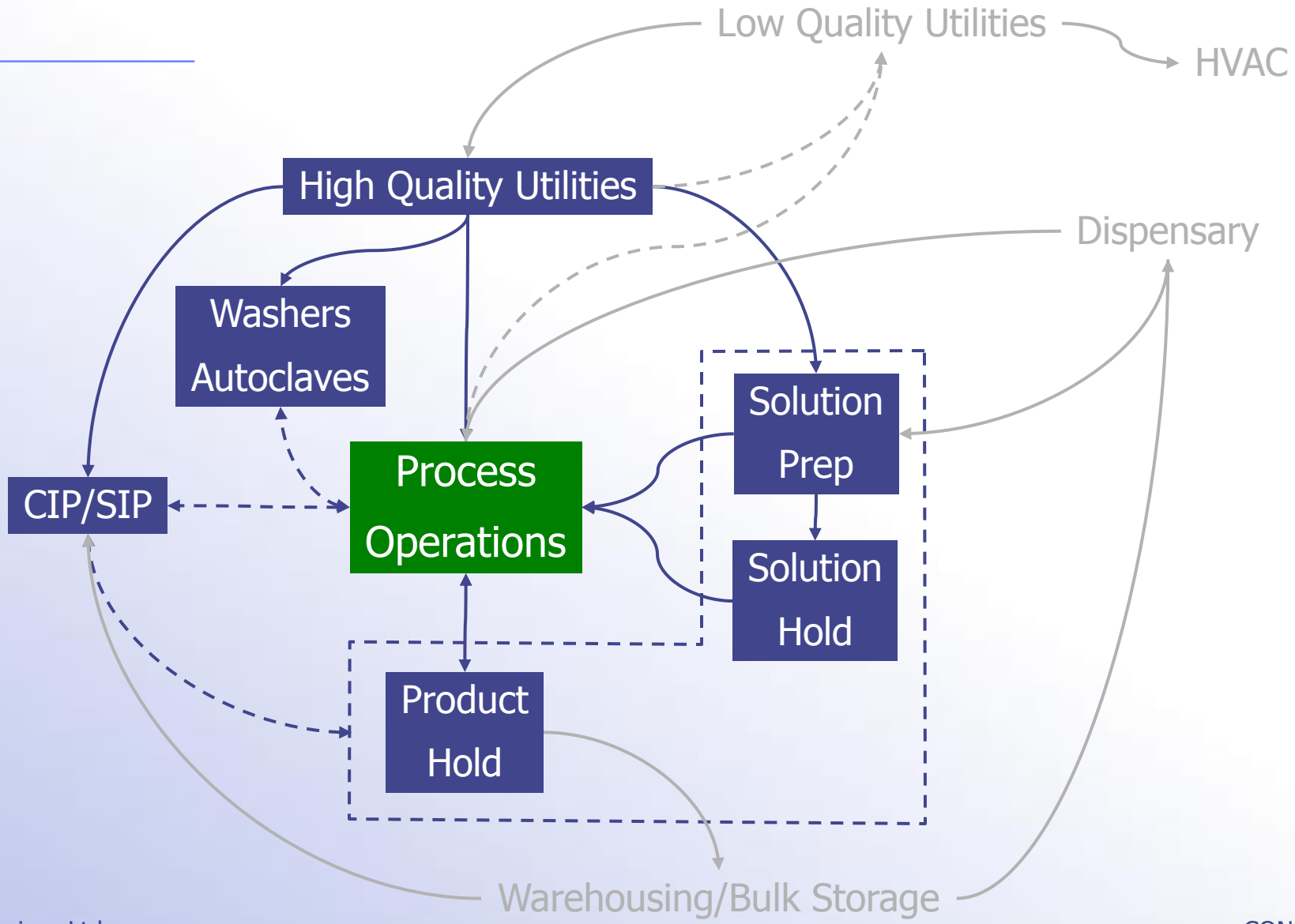
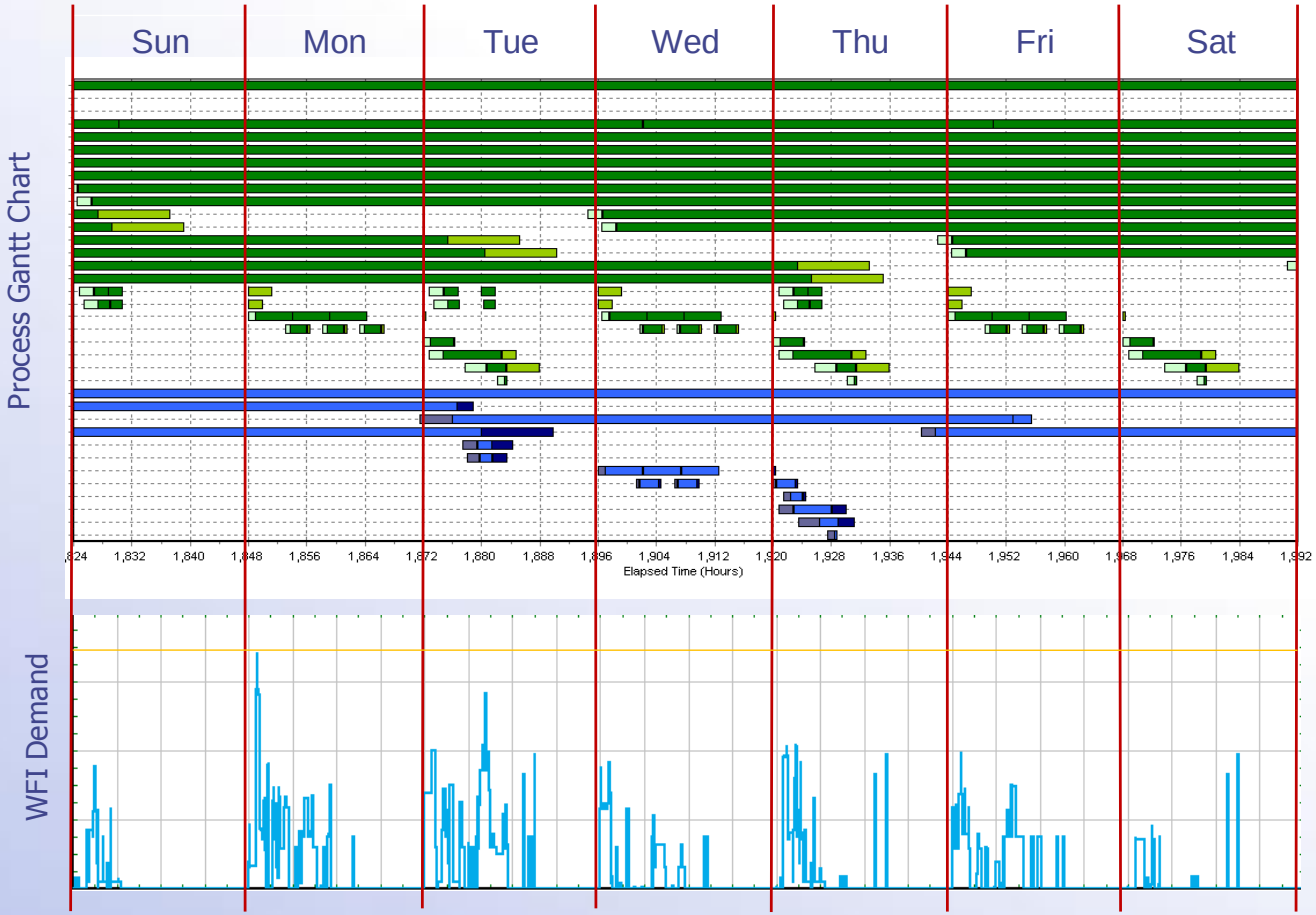
BPS Simulation



Design Optimisation

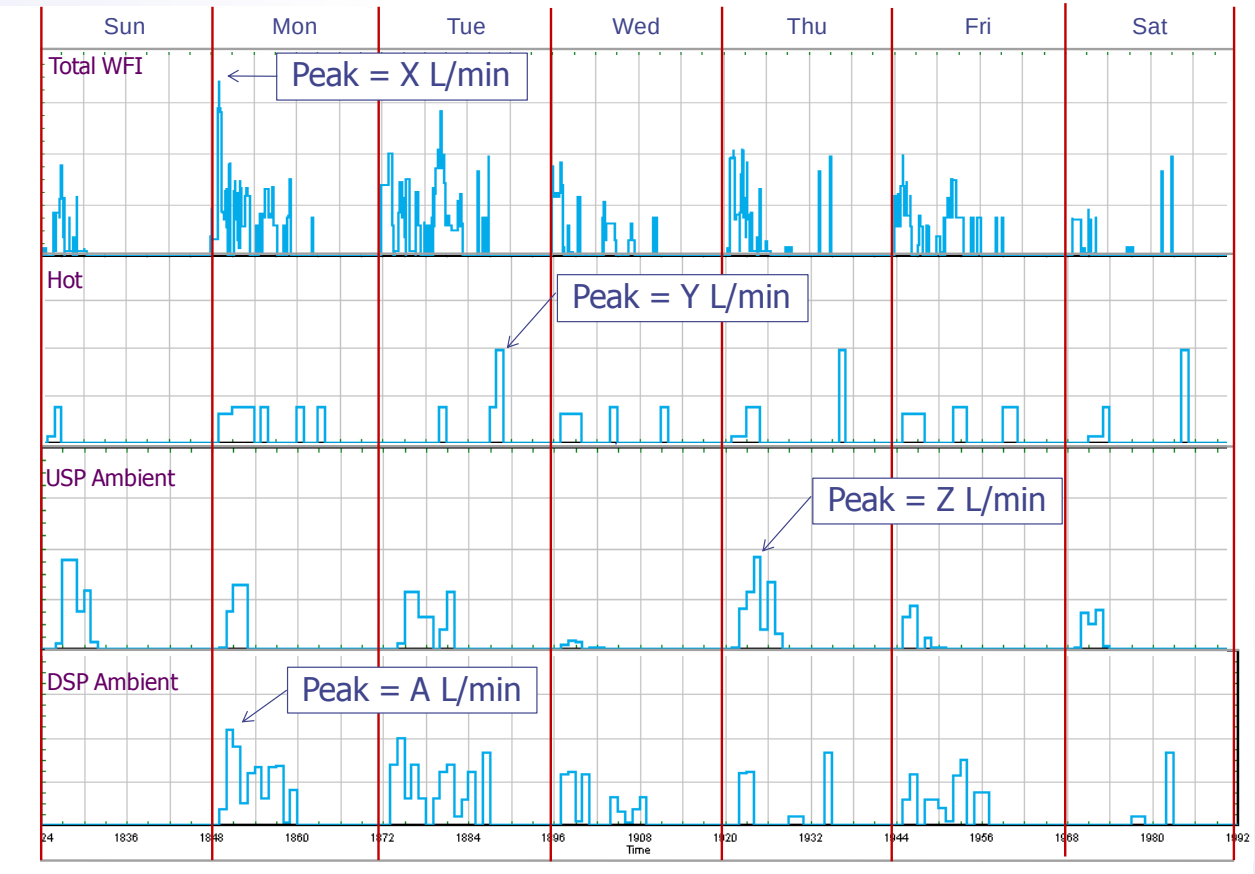
- WFI draw rates
- Personnel usage profiles
- Bags in use

Optimising WFI Operations



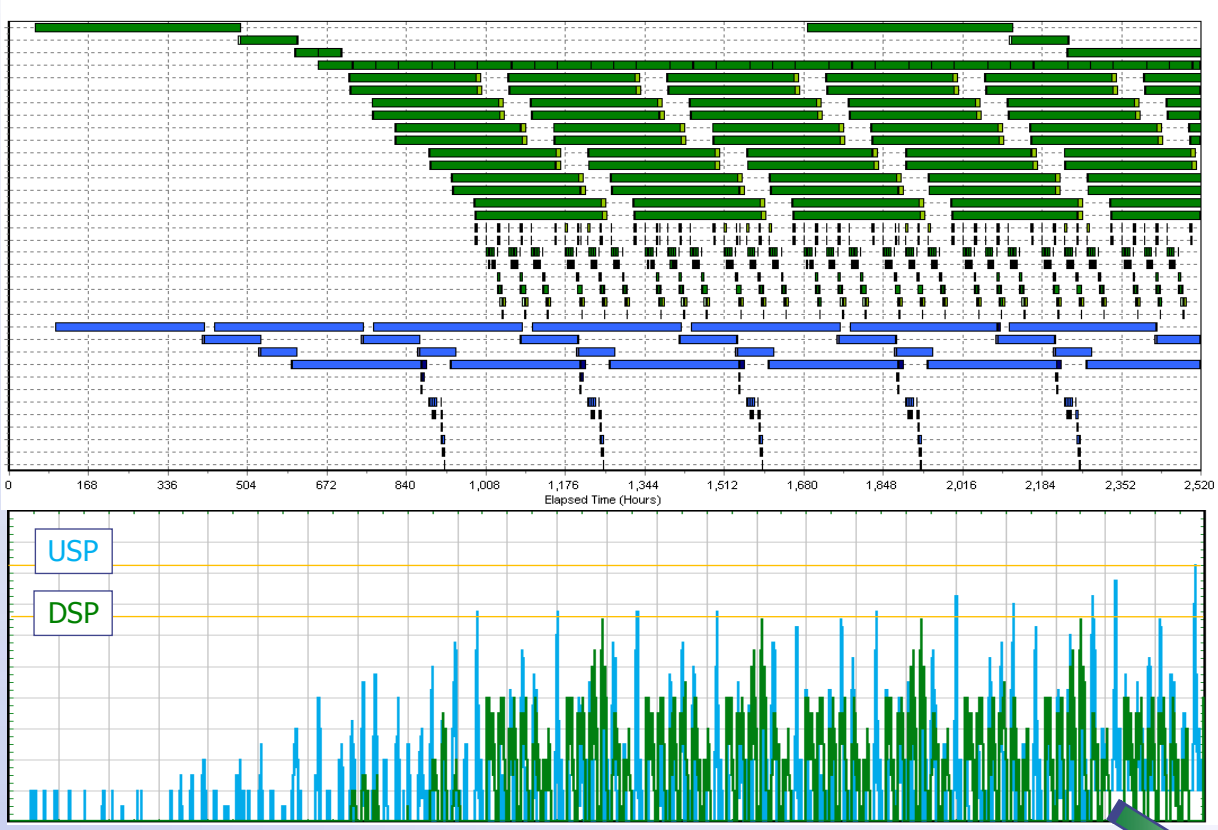
- Build up the total picture
  - Normal operations
  - Upstream
  - Downstream
  - Buffer media Prep
- Set Shift Patterns
- Assess total impact
  - WFI

WFI Operations

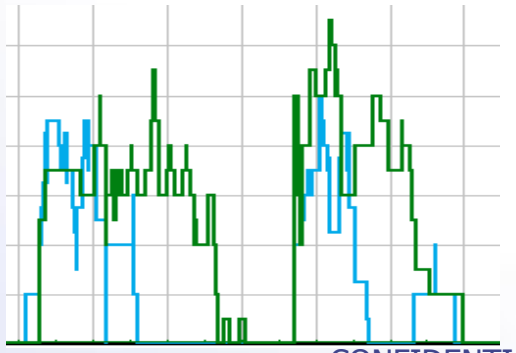


- Analyse loops
  - Hot
  - USP
  - DSP
- Use to Optimise
  - Cooling loads
  - Loop sizing
  - System capacity

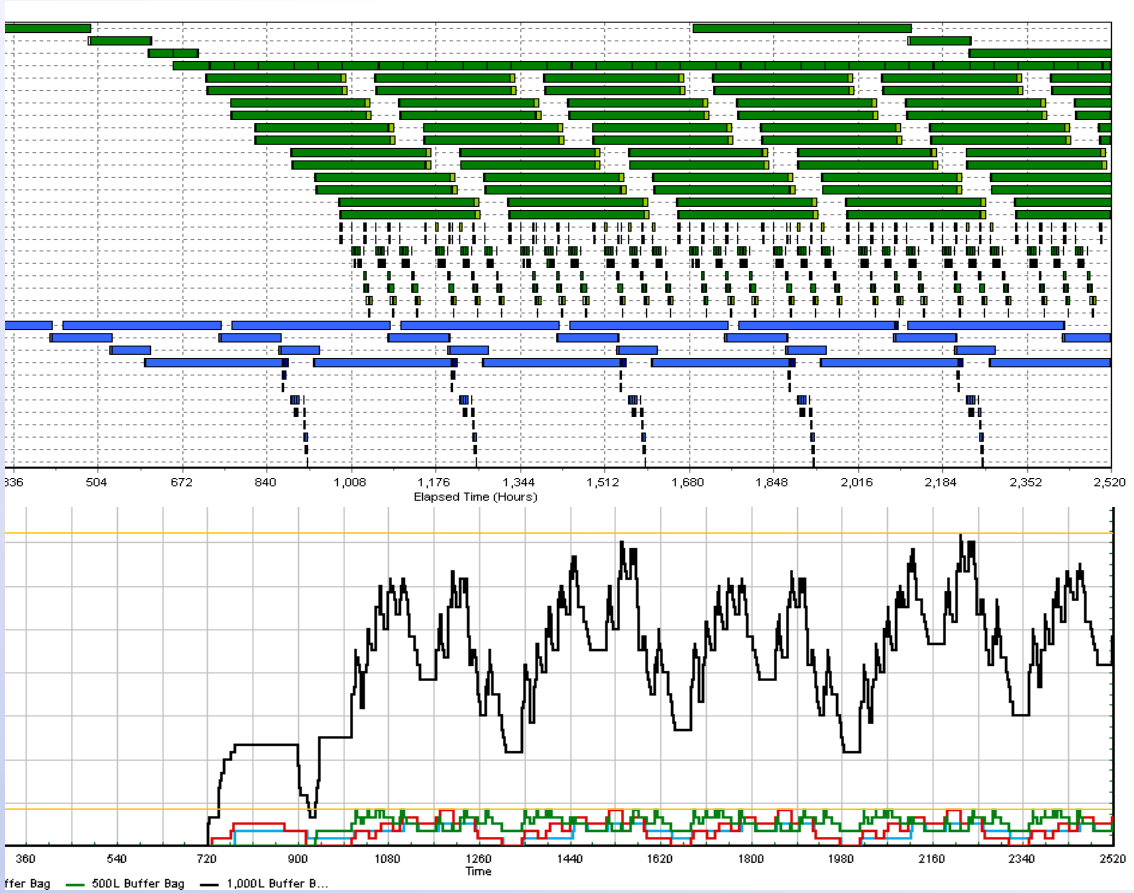
Understanding Personnel Profiles



- Build up the total picture
  - Start up
  - Normal Ops
  - By Group
- Drill into details
- Optimise
  - Labour pools
  - Shifts



Solution Holding WIP Disposables



- Build up the total picture
  - Start up
  - Normal Ops
  - Bag size
- Understand
  - Consumable usage
  - Floor area requirements
  - Cold room
- Optimise
  - Scheduling
  - Operating strategy

Summary

- Models provides Insight into the complexities of biotech plants, in terms of
  - Cost
  - Managing change
  - Optimising performance
  - Evaluating technologies and processes

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