Biolytic Lab Performance

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ABOUT: Biolytic Lab Performance

- Biotechnology company founded in 1993 by Tom Demmit
- Located in Fremont, California
- Produces DNA & RNA oligo synthesizers
  - Provides individual parts and consumables to run their instruments
  - Provides services and maintenance

QUICK BIOLOGY REVIEW

DNA?

- Storage of genetic information
- Provides codes for cells to function

RNA?

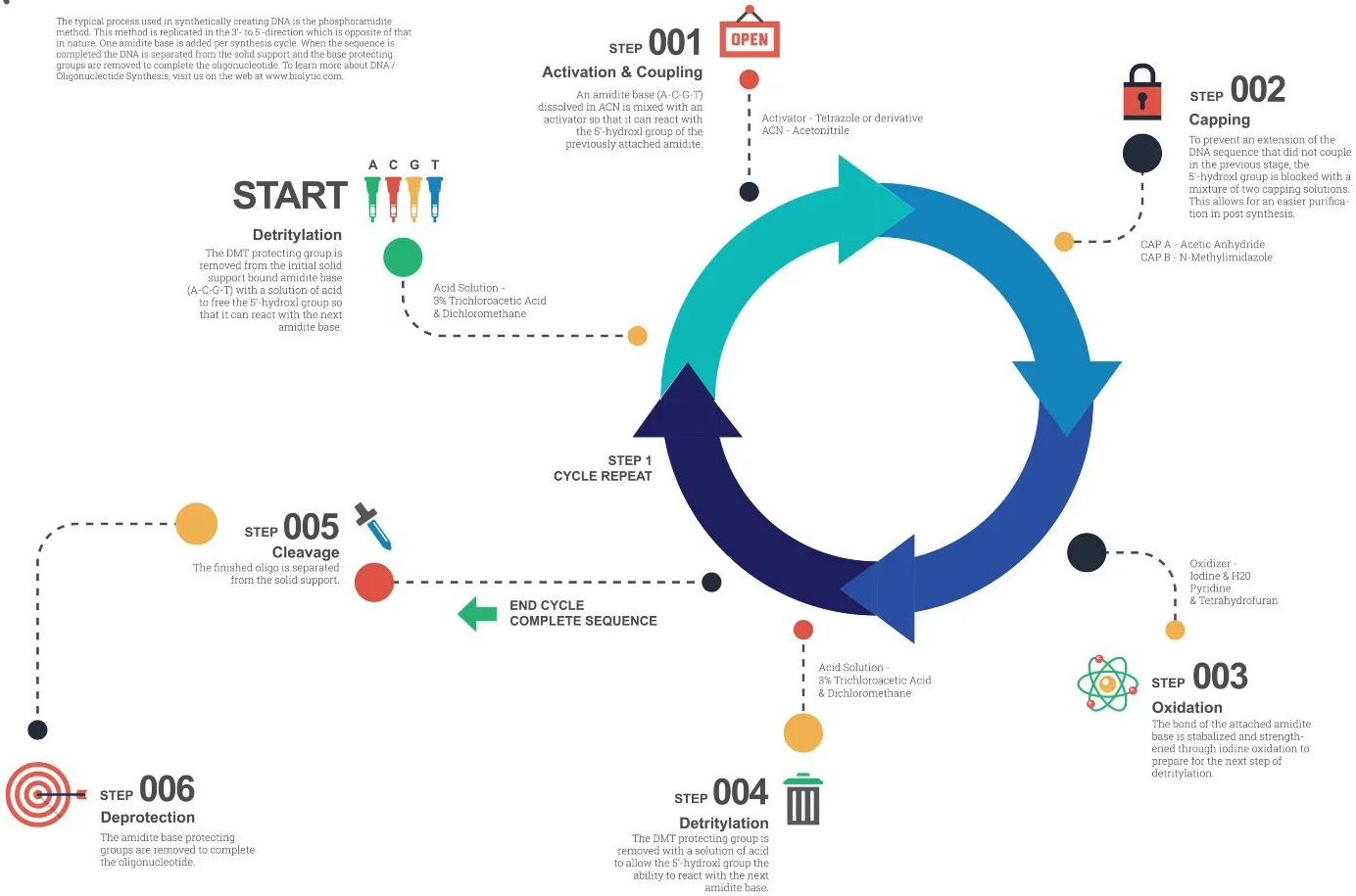
- Converts codes into proteins, allowing cells to function

Oligonucleotides?

- Short single strands of DNA or RNA
- Used in the polymerase chain reaction
  - Creates copies of fragments or strands of DNA

DNA / OLIGONUCLEOTIDE SYNTHESIS CYCLE

The typical process used in synthetically creating DNA is the phosphoramidite method. This method is replicated in the 3'- to 5'-direction which is opposite of that in nature. One amidite base is added per synthesis cycle. When the sequence is completed the DNA is separated from the solid support and the base protecting groups are removed to complete the oligonucleotide. To learn more about DNA / Oligonucleotide Synthesis, visit us on the web at www.biolytic.com.



BIOLYTIC LAB PERFORMANCE

01

Dr. Oligo Synthesizer

Bottles

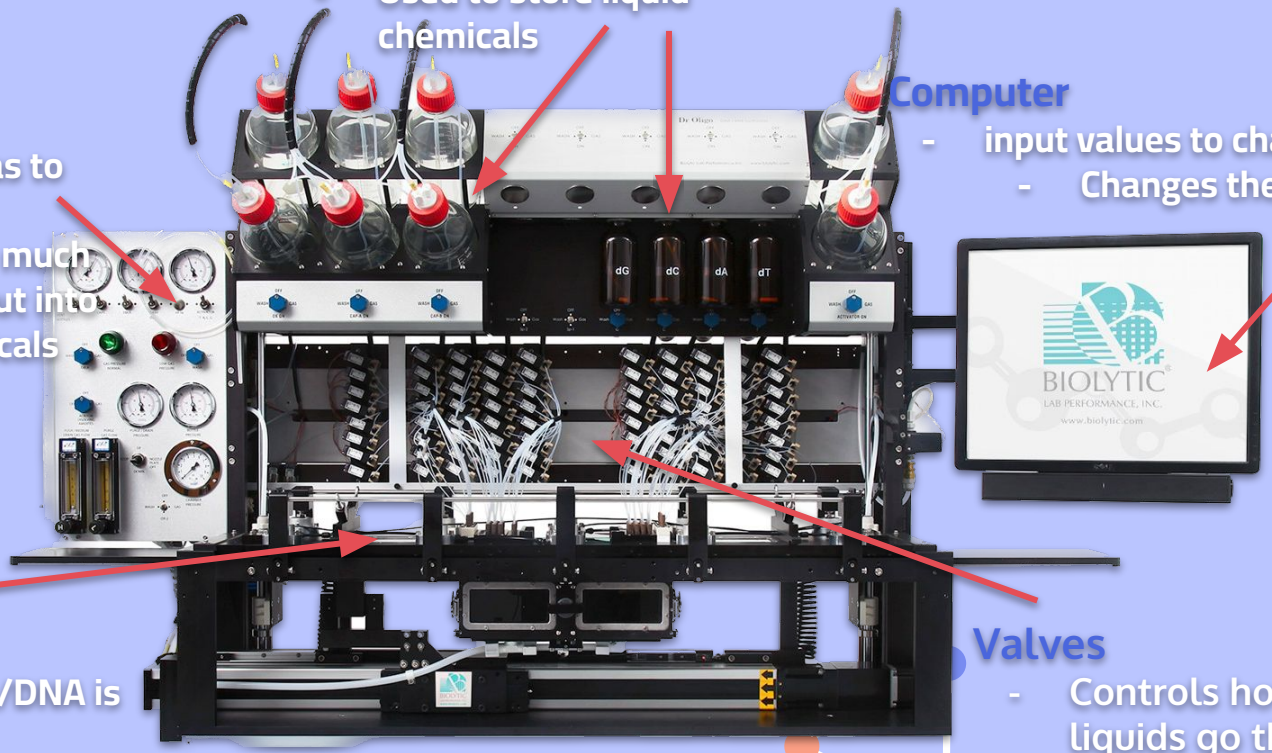
- Used to store liquid chemicals

Pressure gauges

- Uses nitrogen gas to push liquids out
- Shows psi (how much is going in and out into individual chemicals

Computer

- input values to change output
  - Changes the chemicals



Conveyer belt

- Where the RNA/DNA is synthesized

Valves

- Controls how much liquids go through

Control Board

- Controls electronics

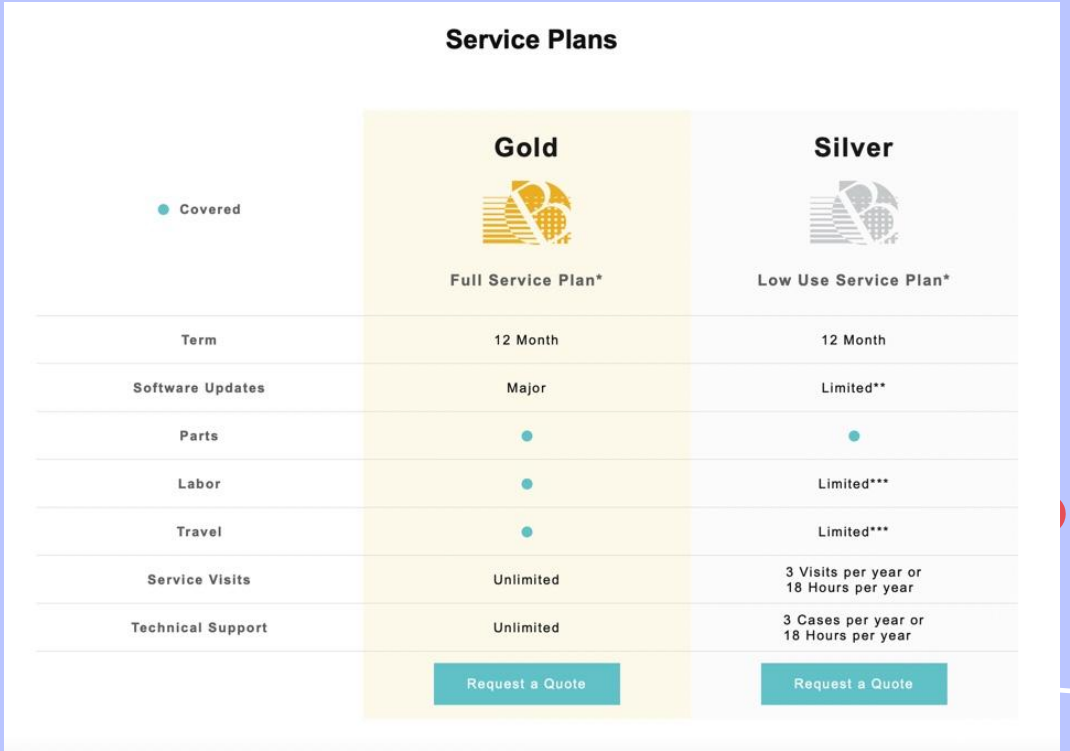
Instrument Services & Service Plans

Pay As You Go

- Paid laboratory instrument services whenever needed
  - Charged per service call by Parts, Labor, and Travel

Preventative Maintenance

- Laboratory instrument testing, cleaning, calibration, replacement parts



Service Plans

● Covered	Gold Full Service Plan*	Silver Low Use Service Plan*
Term	12 Month	12 Month
Software Updates	Major	Limited**
Parts	●	●
Labor	●	Limited***
Travel	●	Limited***
Service Visits	Unlimited	3 Visits per year or 18 Hours per year
Technical Support	Unlimited	3 Cases per year or 18 Hours per year
	Request a Quote	Request a Quote

END-TO-END OLIGO SYNTHESIS TRAINING

- Offers in-person and remote training
  - Educational and preparatory overview
- Provides free video of oligo synthesis process
- Synthesis consumables introduction

02

SUPPLY MANAGEMENT

MANAGING BUDGET COSTS

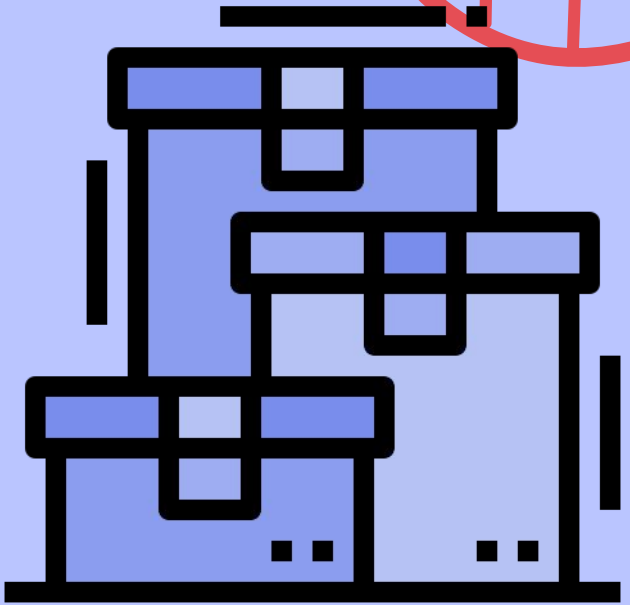
Inventory Budget

- Supplies for inventory
  - Based on current sold products and forecasted sales
  - Tracked quarterly and monthly

- Find it better to order ‘just in time’
  - Excess money is used to invest in other areas

REPLENISHMENT DECISIONS

- Purchased in batches
- Check on current inventory to determine how many instruments could be built
- Based on current orders that need to be completed
- Each component has a reordering point
    - Changes based on the specific instrument
- Excess parts for their own customers

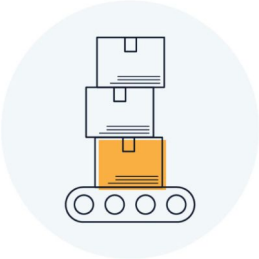


03

MANUFACTURING PROCESS

8 wastes of lean manufacturing

Unnecessary transportation



Overproduction

Unnecessary motion

Excess inventory

Waiting (idle time)

Overprocessing

Defects

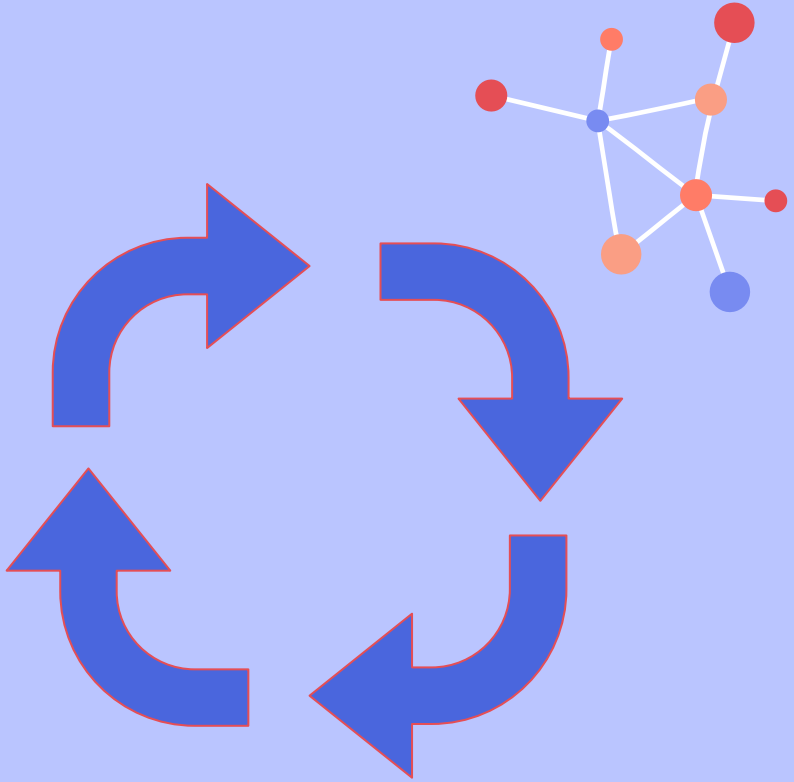
Unutilized talent

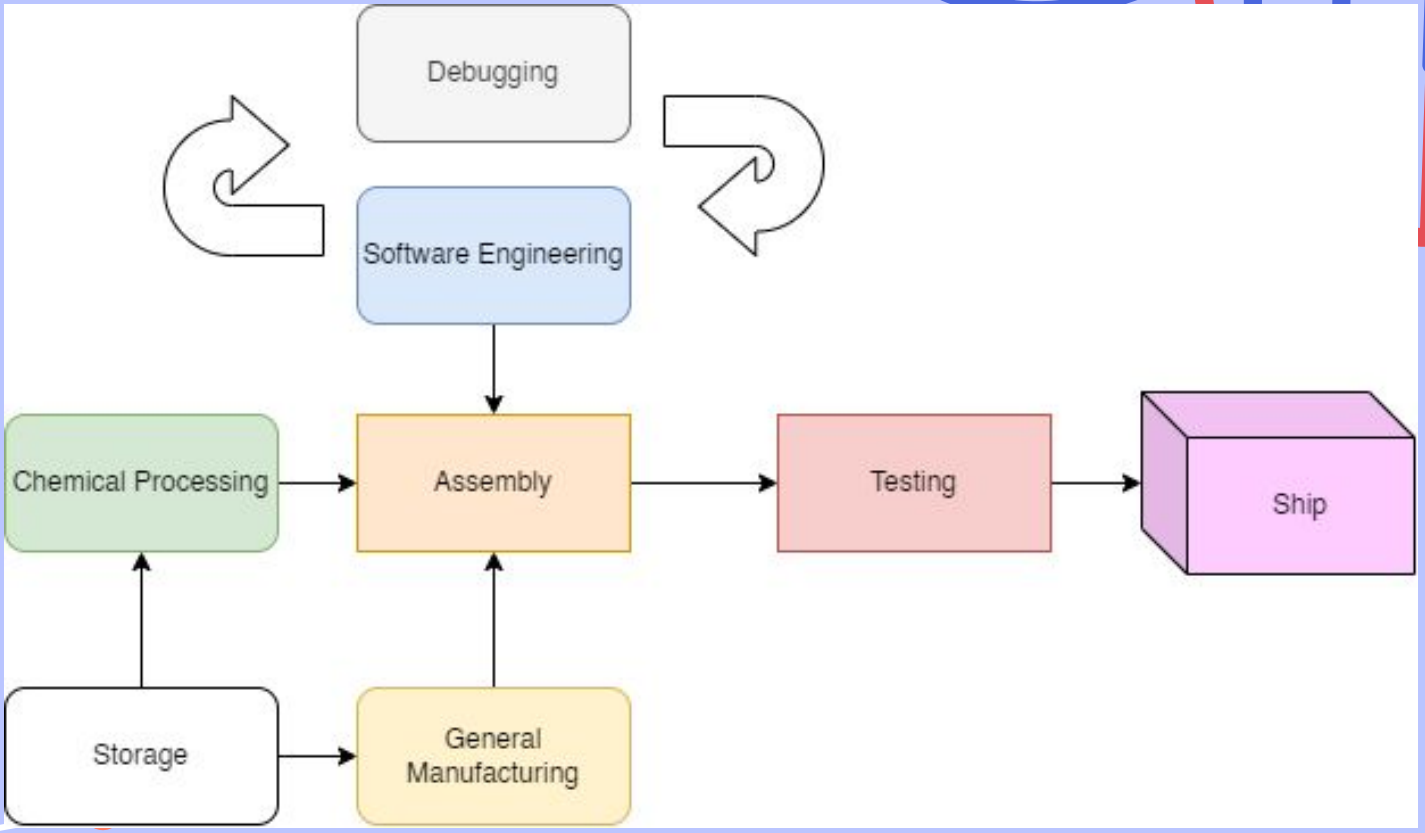
Limble

Assembly and Facility Layout

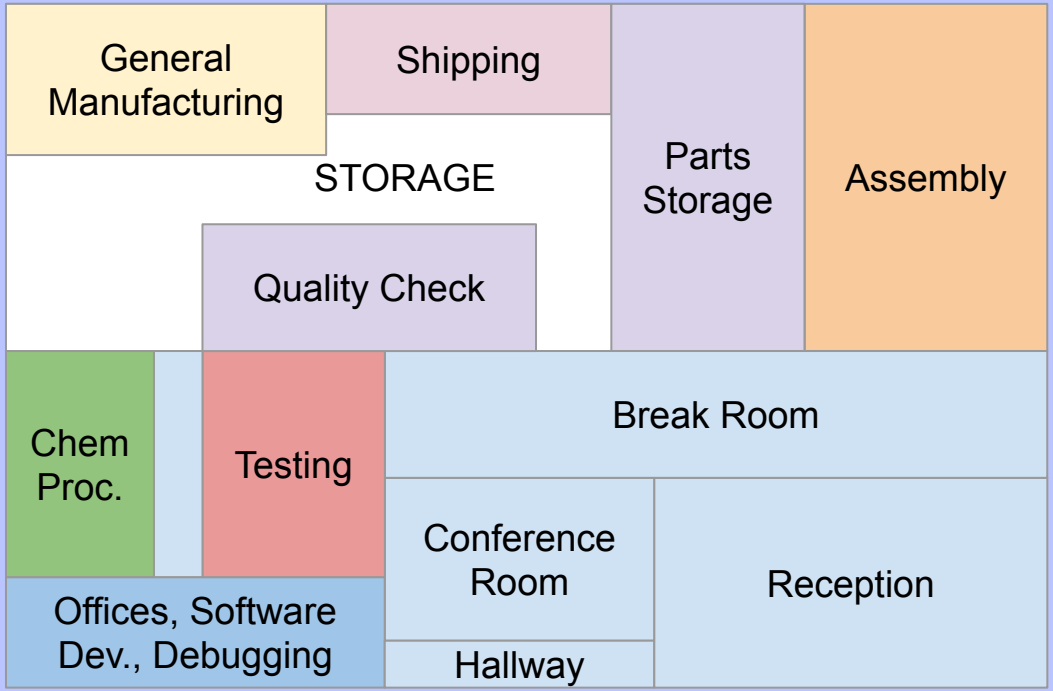
Non conventional assembly process:

- 13 members all assembling by hand
- Each member knows how to build other parts

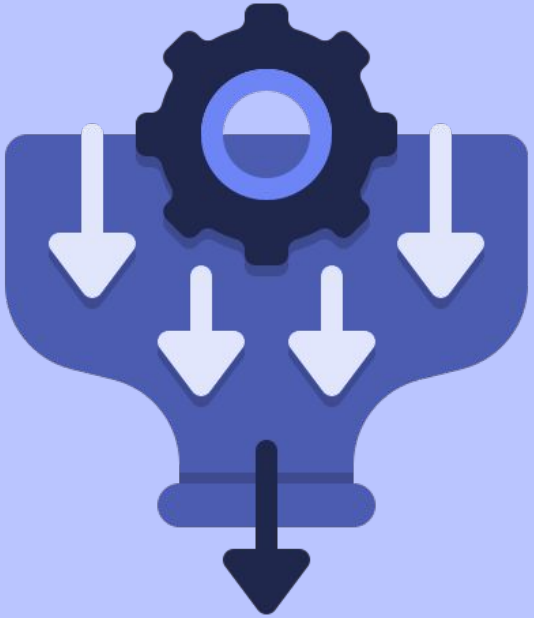



Debugging
Software Engineering
Chemical Processing
Assembly
Testing
Ship
Storage
General Manufacturing

Assembly and Facility Layout



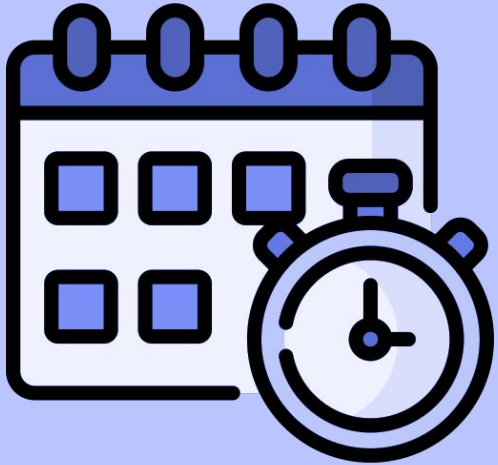
STATION BOTTLENECK PREVENTION



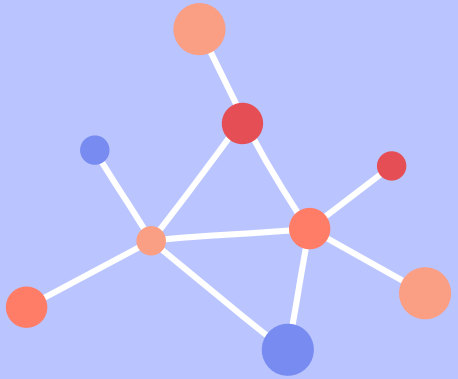
- Technicians each have their own workbench and tools
- Technicians are cross-trained
  - Allows them to continuously work on different parts
  - Helps challenge people and allow them to develop more skills
  - Efficiency is improved
- Technicians have biochem training
  - Allows them to fully understand each component
  - Makes room for questions and feedback
- Workshops are made available
  - Allows technicians to easily practice on parts they are not familiar with

QUEUE/WAITING TIME

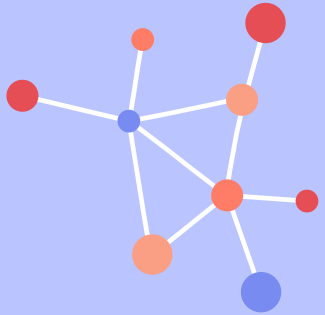
- Flexible deadlines
  - ~1 month processing time
- Customers can request their orders to be expedited



04



QUALITY CHECK



Quality Check Steps

Component Check

After section assembly, part is tested

Initial Parts Check

Each individual part is assessed before being assembled

Final Check

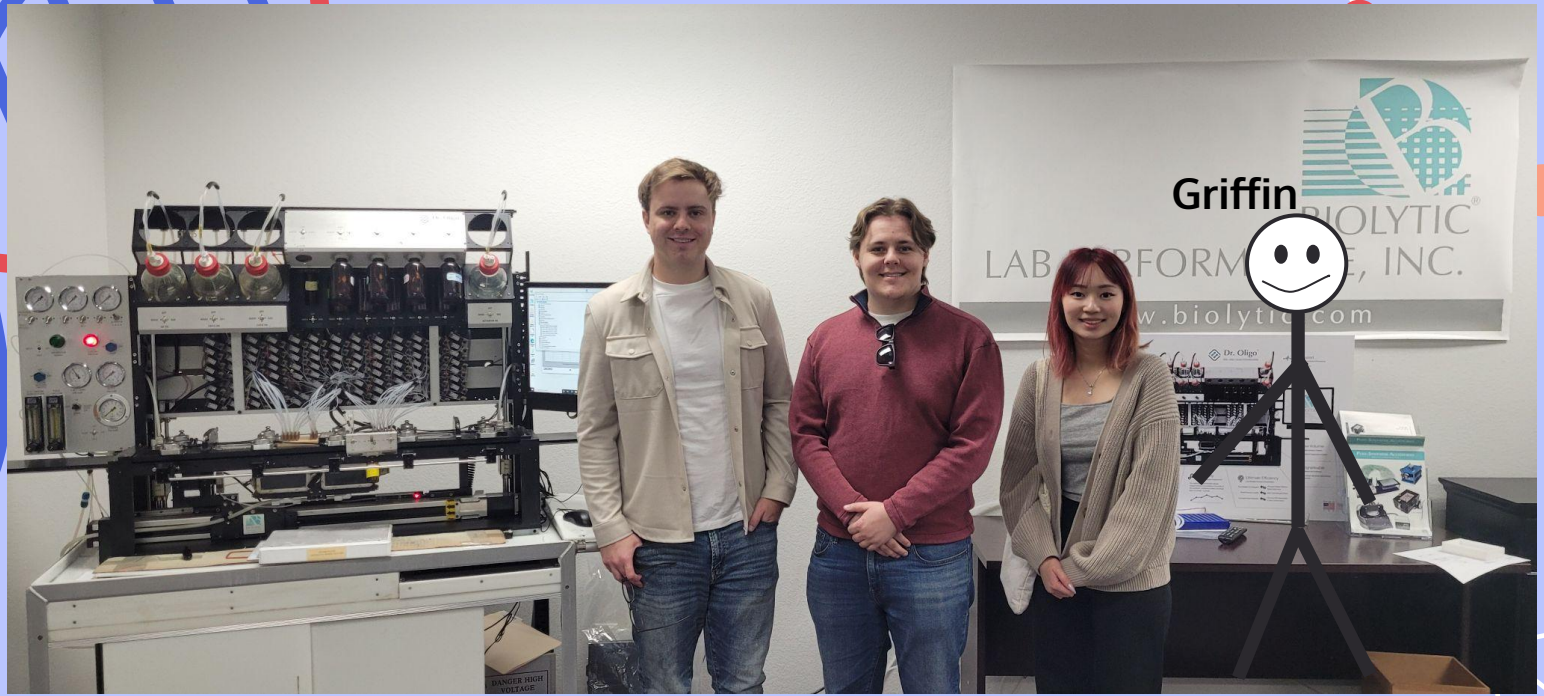
When finished, machine is tested as a unit

05

RECOMMENDATIONS FOR IMPROVEMENT

REDUCING LEAD TIME

- Strict lead time
- Strict reordering point on all inventory supplies
- Rely on forecasted sales instead of intuition


Griffin
DANGER HIGH VOLTAGE

THANKS!

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