



CONSIDERATION IN BUILDING A COMPOUND MANAGEMENT LAB

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STRATEGY

The culture of the start up is to employ enough resources to efficiently meet all goals and expectations without exceeding resource allocations. In such an early stage you can be afforded very few cost over runs or failures.

Wants and needs are easily distinguished when the goals are clearly established and the capabilities are not over built.

Utilize a single pieces of automation for as many processes as you can, while keeping an eye on the timeline.

A dedicated team is essential at the ground floor building stages of a company.





FIRST YEAR CM GOALS

- Incorporate ~100,000 compounds in general screening library
- Build and incorporate homegrown inventory database and request ordering applications
- Perform 10 HTS' 2009
- Incorporate on going Med Chem synthesis samples
- Incorporate on going vendor purchased libraries ~20,000 compounds per year
- Support 4-5 Lead ID and Lead Op programs
- Meet all goals fast and efficiently



ESSENTIAL PROCESSES

- New compound inclusion
 - General screening production
 - Liquid handling for HTS plating
 - QA (LCMS-Absorbance reader)
 - Med Chem inclusion
 - Dose response
 - Single point
 - Large volume liquid dispense
 - Powder weighing
 - HTS / Assay robotics
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- ❖ Compound request workflow
 - ❖ Inventory management
 - ❖ Data management



ESSENTIAL AUTOMATION



- HAMILTON star
- V11 Bravo-Benchcell-PlateLoc-printer applicator integration
- 2D tube rack scanner
- LABCYTE ECHO 550
- Stand alone Plate Loc sealer
- Centrifuge
- XL20 tube sorter
- Stand alone 1D barcode printer (vials-plates)



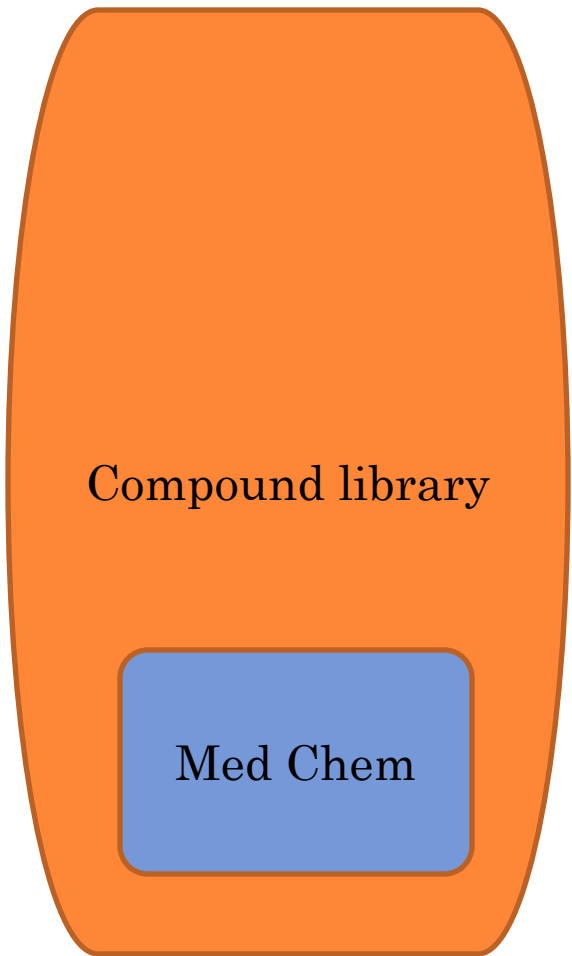
Late October 2008



New vendor
compound

Chemistry

Build-reformat



HTS

DR

SP

liquid

Powder

LCMS

Experiments



NEW COMPOUND INCLUSION GENERAL SCREENING LIBRARY CREATION

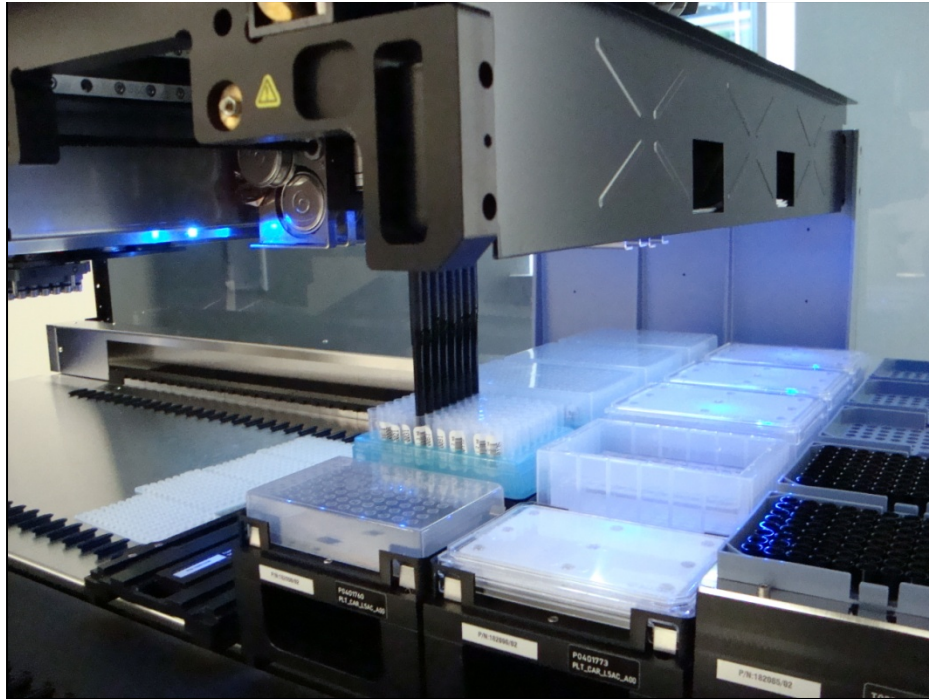


- Receipt of small molecules as powders in automation unfriendly tubes
- Control over DMSO quality
- Control over DMSO quantity
- HAMILTON star for Dissolution
- Bench cell integration:
 - Replication into automation friendly 2D matrix tubes
 - Reformatting into LDV 384 well GS plates

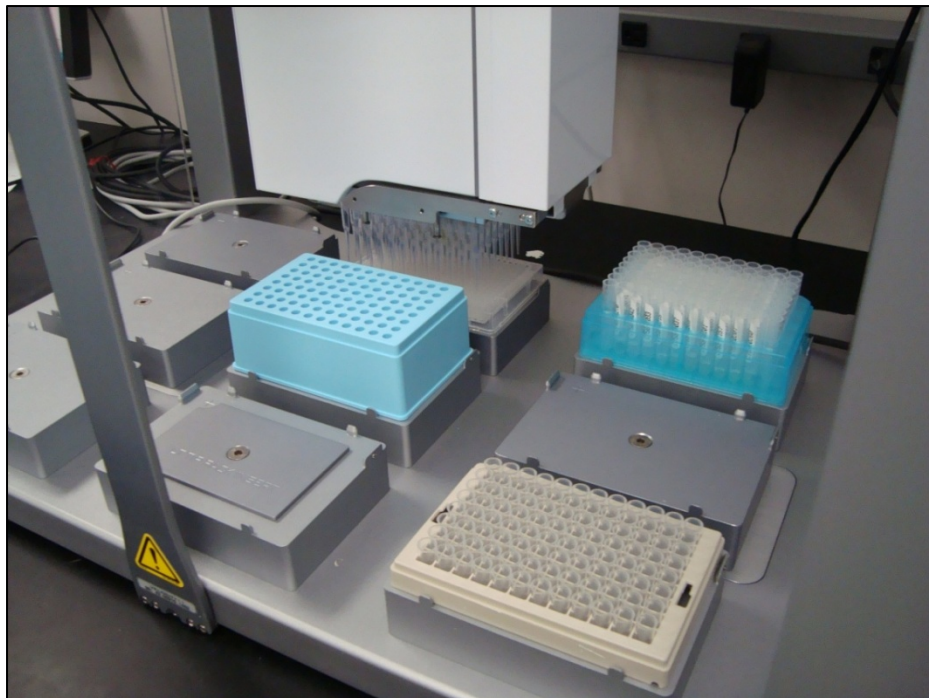




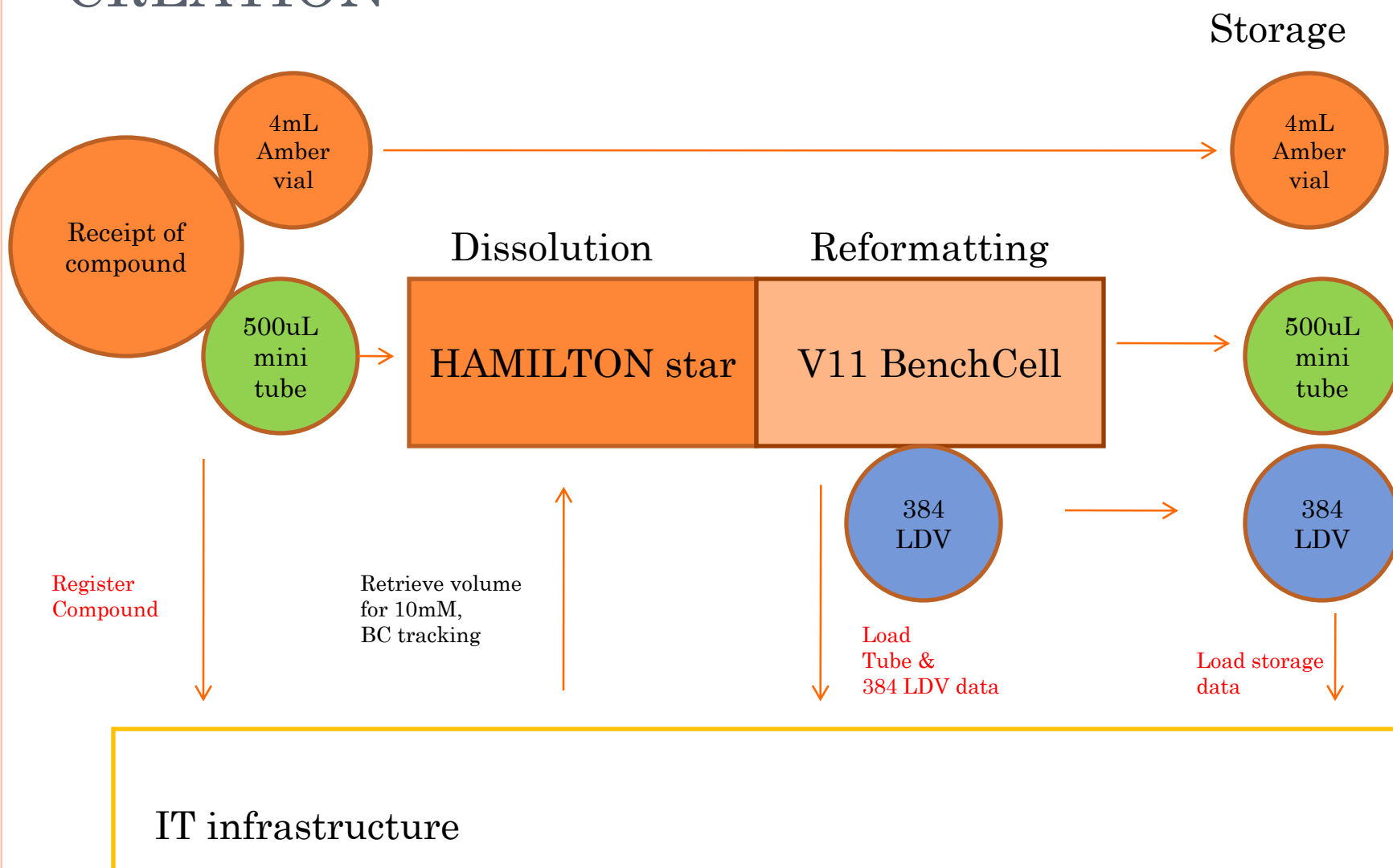
HAMILTON Star- Variable volume liquid handling for dissolving compound library

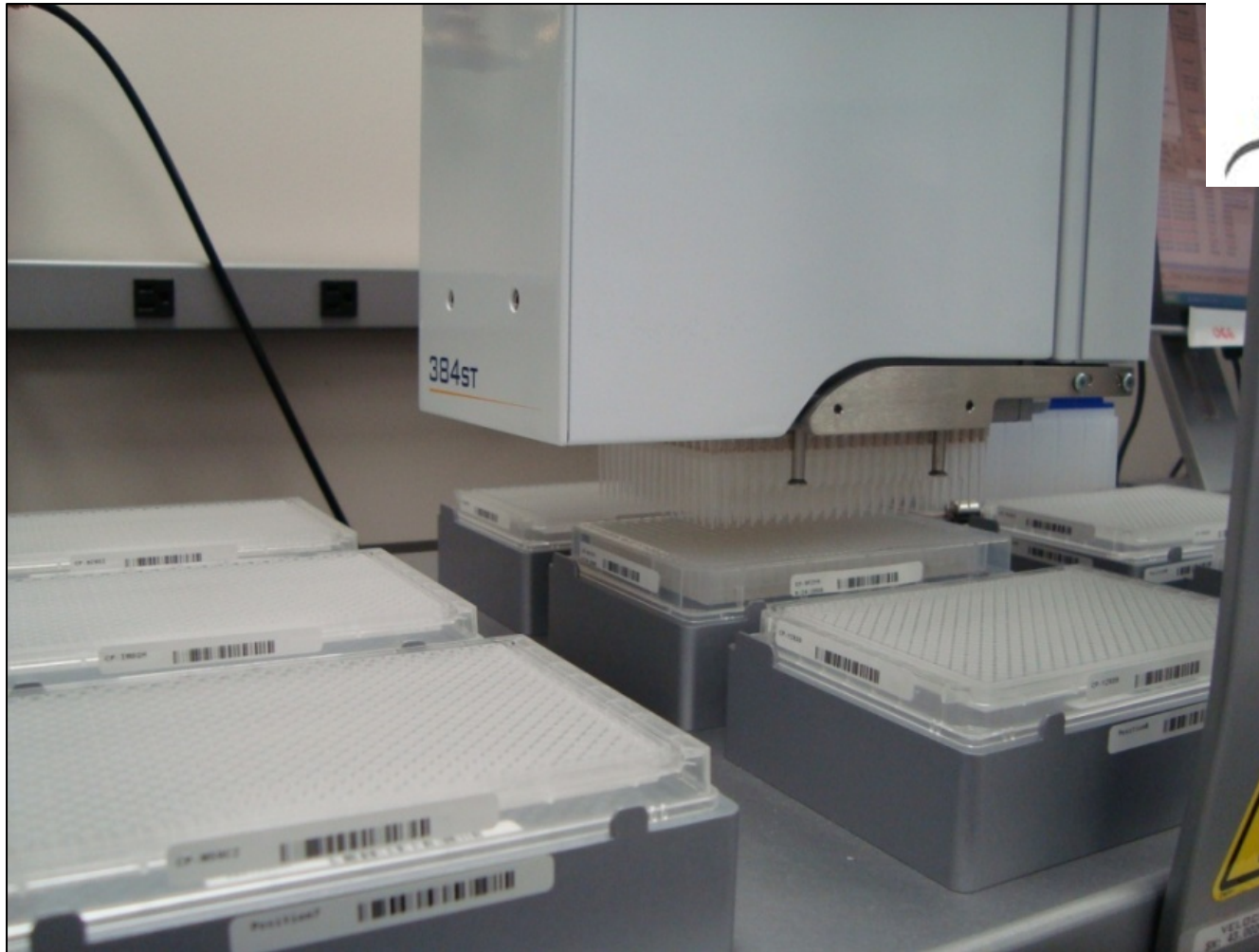


96 Bravo/Bench/Cel – Liquid handling for re-formatting 96 and 384 well plates



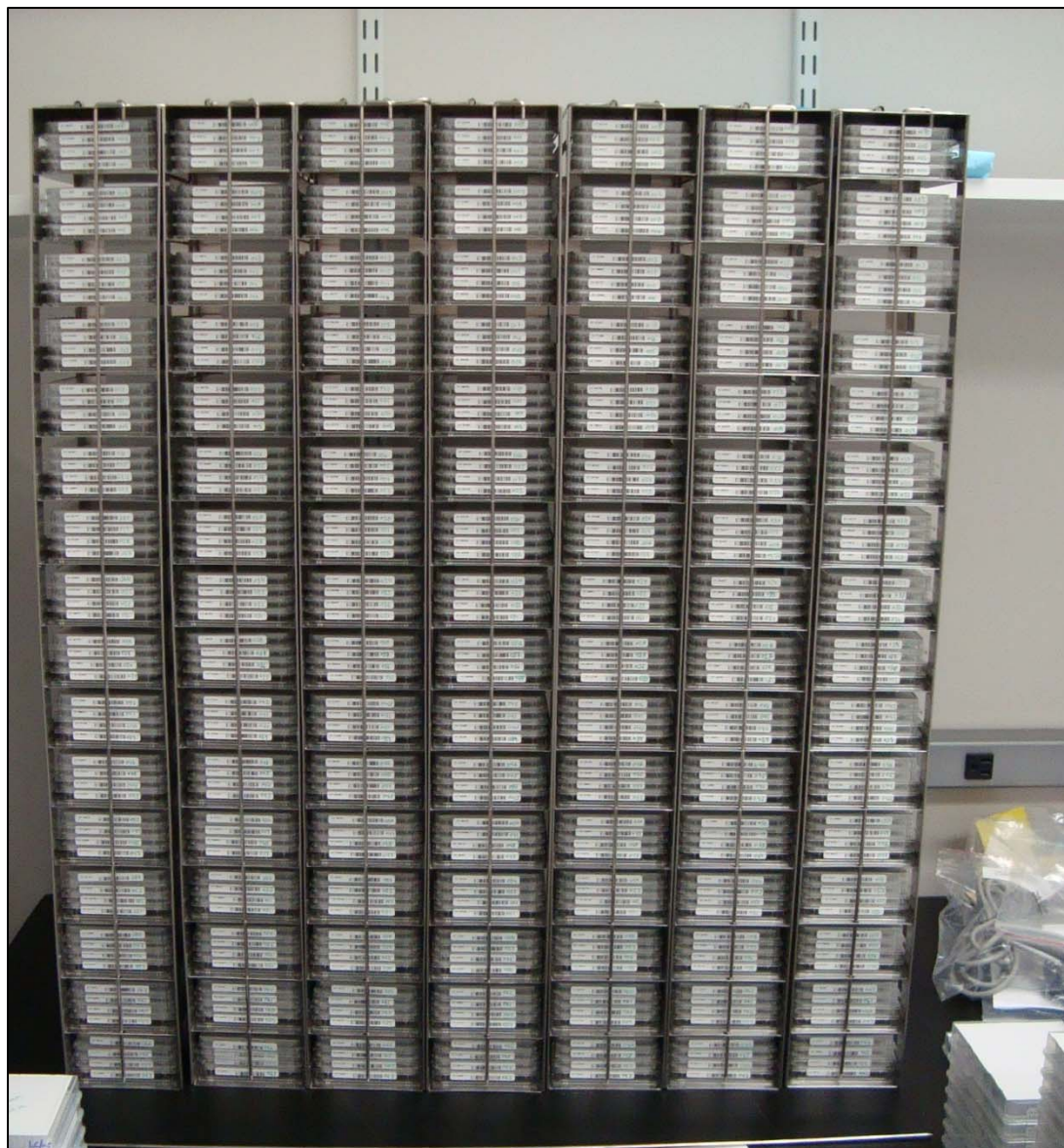
NEW COMPOUND INCLUSION GENERAL SCREENING LIBRARY CREATION





384 Bravo/Bench/Cel – For stamping out 7 copies of the Library in 384 well Echo plates.





64 x 384 well
Echo Plates
(~20% of Library)

Replicated 7X

Compound Library Storage in LDV Echo Diamond Plates

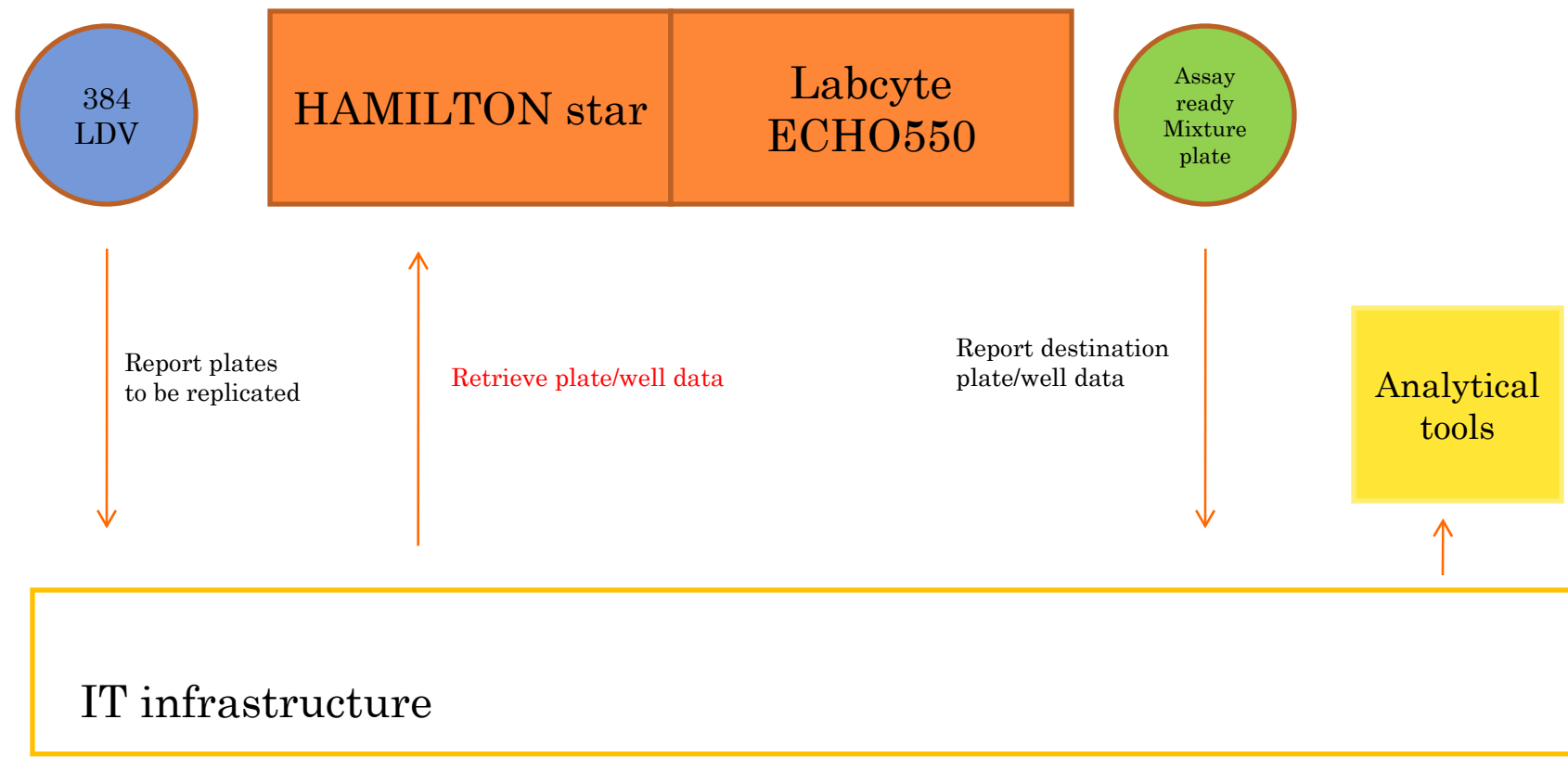


HTS PLATING

- We dispense assay ready mixture plates
- Utilize the ECHO 550 acoustic dispense
 - 2.5nL capabilities
 - No tips
 - No wash steps (methanol consumption)
 - Creation of assay ready mixture plates
 - Source plate cross contamination free
 - Accurate volume representation of each source compound
 - Survey data for DMSO% and Volume
- Walk away integration with HAMILTON star



HTS PLATING



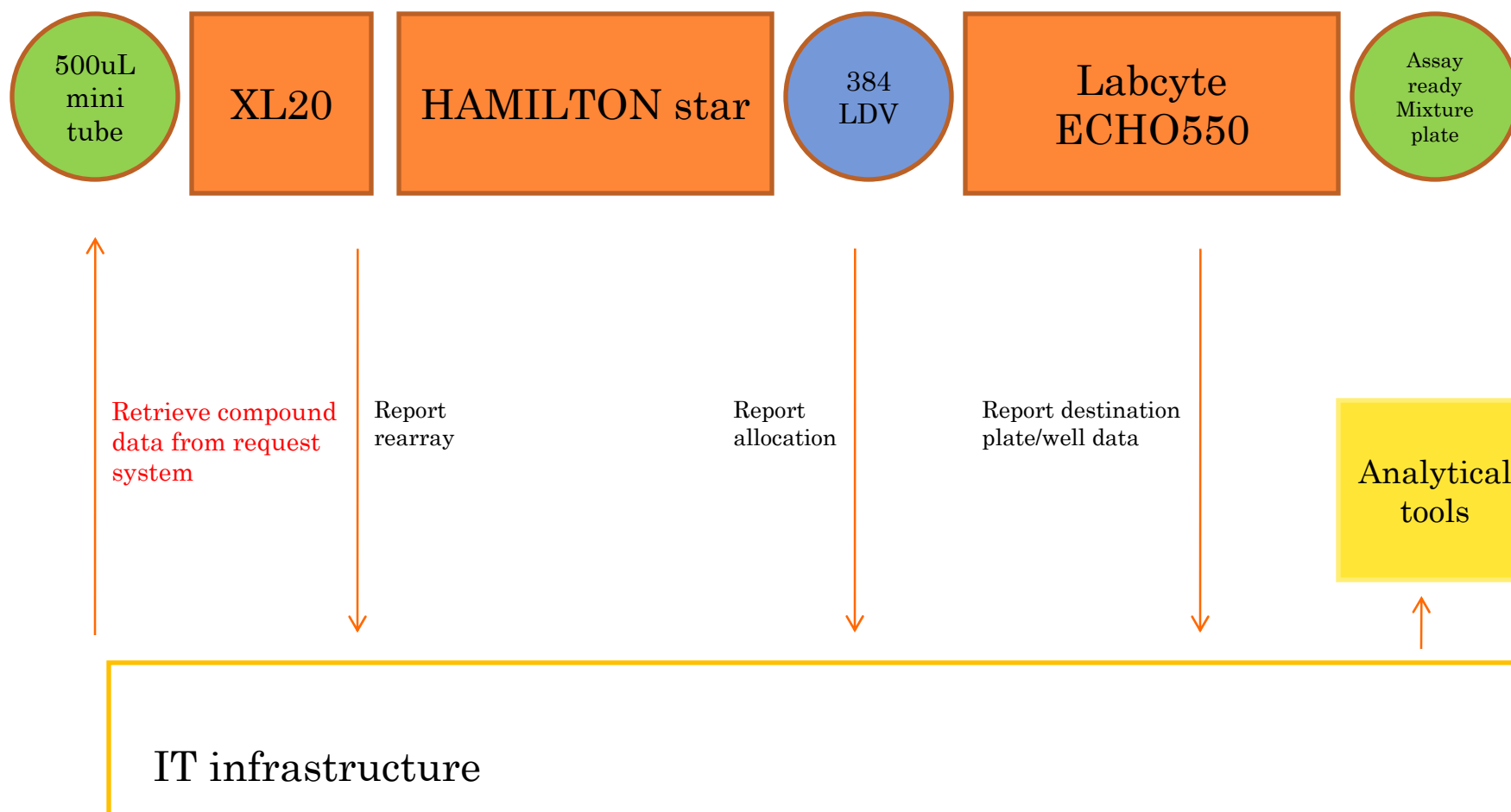


DOSE RESPONSE PLATING

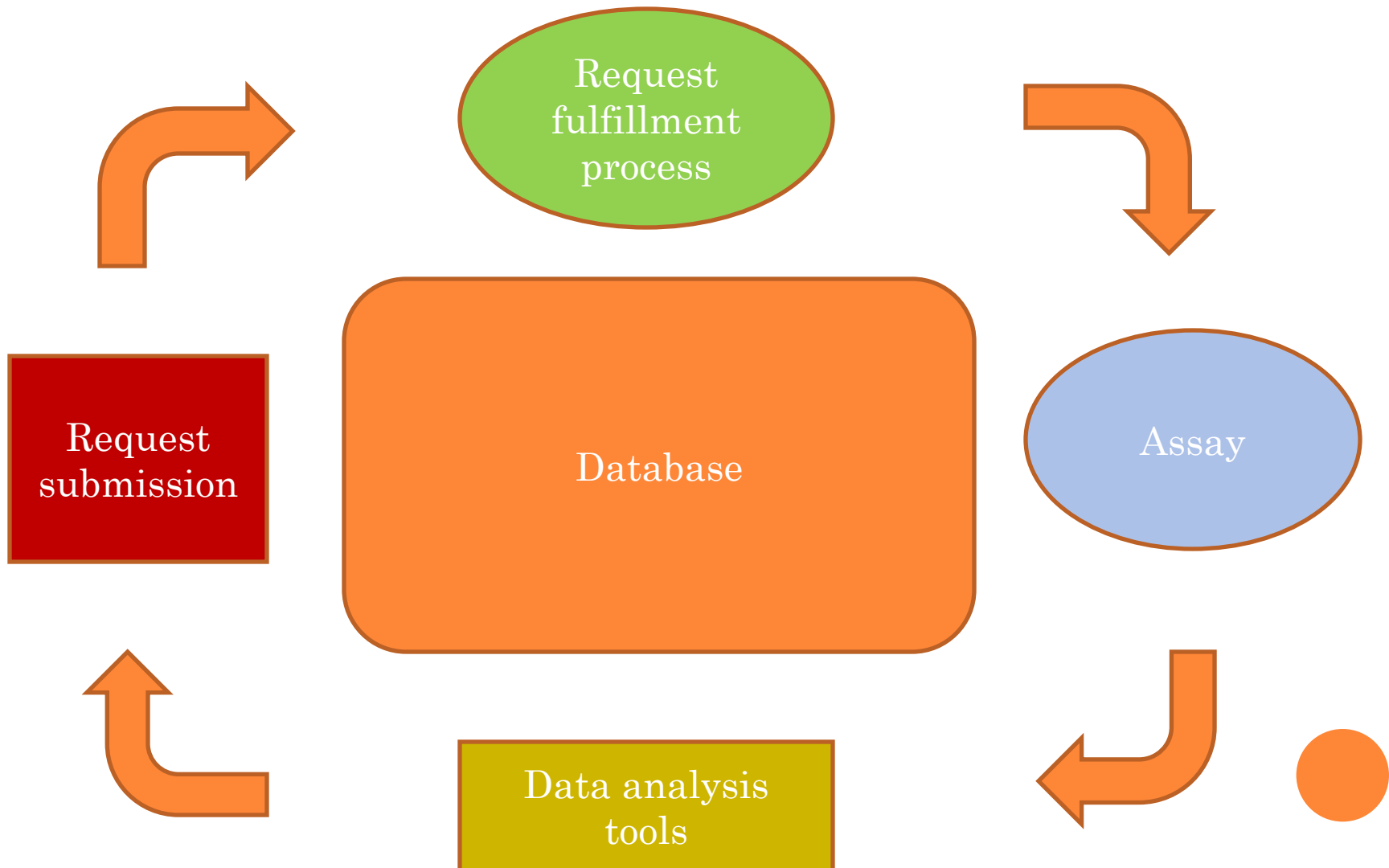
- Utilize the 2D matrix tube for cherry picking
- XL20 tube sorter for re-array of 2D tubes
- HAMILTON for reformat to LDV
- HAMILTON star-ECHO550 integration for the plating
- Creating same assay ready plate type from HTS



DOSE RESPONSE PLATING




DATA PROCESS



TEN MONTH ACCOMPLISHMENTS

- Highly automated Compound Management lab
- Five HTS' completed
- Four Lead op programs
- Top to bottom electronic data tracking
- One happy compound manager

EYES TOWARDS THE FUTURE

- Regularly scheduled library quality testing
 - Subset library inventory and screening
 - Speed up every process at bottleneck points
 - Liquid handling QC system i.e. Artel
 - Utilizing ECHO for cell based screening
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