

Using automation to drive a cost-effective operating model.

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Going beyond the client's needs.

LTS Health was appointed by a large private laboratories and health services organization to comprehensively structure an engineering engagement to realize the vision and strategy of creating a future-proof reference laboratory.

Results:

$4.5m
Reduction in capital outlay.

50%
Smaller automation footprint.

$1.5m/y
Operational cost saving.

6month
Acceleration on full-time equivalent (FTE).

Checklist	
Accommodate chemistry and immunoassay volumes from two regional laboratories.	✓
Transfer testing to new Roche cobas 8000 platforms.	✓
Implement Data Innovation Instrument Manager middleware.	✓
Upgrade Roche cobus IT middleware.	✓
Restructure staffing in regional laboratories for new technology and volumes.	✓
Review main logistics routes to improve arrival pattern.	✓
Construct new walk-in specimen fridge and convert existing ones for reagent use.	✓
Redesign and implement new specimen processing area.	✓
Create core lab master plan.	✓
Support and plan scientific and transfer validations on new platforms.	✓
Design performance KPI's to manage new operations.	✓
Waste management plan.	✓
Calculate and redesign supplies KANBAN.	✓
End to end component and integration testing.	✓

The implementation

Agile planning strategies were used in the management of all tasks and development required to prepare for the implementation of the new processes and systems and business cases for presentation to the client's board.

Planning

To ensure that all efforts are coordinated and prioritized to the critical delivery path, the composition and governance structure of the project team was assessed and amended regularly during the project. Workstreams and a planning "war room" were created where all main project meetings were held. Monthly steering committee meetings were conducted to inform project sponsors and the client's executives of progress, risks and where critical decision could be made or discussed - and ultimately presented to its board.

Implementation

As implementation due date approached, the cadence of workstream meetings increased. Daily 10 minute "standup" meetings (popular in the agile software development) were scheduled to give all stakeholders a daily update. This included an acute focus on progress, delayed tasks, open decisions and possible risks that needed escalation or mitigation. The client's vital focus on lab operations continuity was addressed through a detailed disaster recovery and business continuity plan. This provided guidance on emergency decision-making during the transition, go-live and stabilization phases of the project. Further risk mitigation was done by staggering the go-live of events. The transfer of current testing to the new system was conducted first, followed by, volume centralization from two regional labs, which completed in one week increments thereafter. All go-live days were managed by detailed up-to-the-minute agendas and included a 24 hour call desk where all issues were logged, allocated and resolved.

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Challenge

Create organization-wide cost savings and capacity through consolidation and automation.



The main vendor contract for chemistry and immunoassay for the five laboratories in the group came up for renewal. One of the medical laboratories wanted to use the opportunity to consolidate workload, where possible, in the main reference lab. An automation solution was being evaluated, but the business case was unconvincing. In addition, timelines for implementation created significant business risk due to a support sunset date on incumbent test platforms. To complicate matters further, a new company-wide laboratory middleware system was to be implemented to harmonize scientific reporting and test rules.

Approach

To effectively design, coordinate and integrate all workstreams for seamless implementation.



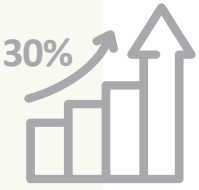
LTS Health became involved with the project at a stage where the goal of the project was set, but the roadmap and structure in order to achieve the goal required definition.

First priority included the restructuring of project workstreams and governance, in order to remove timeline interdependency between related projects. This provided the client with the ability to realistically achieve its goals. Thereafter, a realignment of project priorities based on main business case benefit drivers was performed. The main workstreams included automation, consolidation, workforce, logistics, process, IT, facilities and scientific.

Results

30% increased testing capacity at a significantly reduced operational cost.

- Ultimately, through careful planning and by working closely together with the client, we were able to select an automation solution at significantly lower capital and operational costs than the originally selected solution.
- A reduced implementation timeline accelerated FTE savings by more than six months and reduced business continuity risk due to sunset date on testing platforms.
- The simplicity of the solution resulted in a reduction in automation footprint by more than 50%, with a total number of new communications interfaces and systems reduced. This was achieved by applying upgrades of incumbent systems, requiring little redesign.



Increased capacity at lower cost

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Structured, evidence-based solution design.

LTS Health assisted the medical laboratory in the entire process of technical solution design, stakeholder engagement, vendor facilitation, business case refinement and overall program management. LTS Health was involved in all aspects of the workstreams, from planning to delivery. Specific responsibilities included:

Stakeholder Management

A key driver of efficiency and execution success was the coordination and alignment of the priorities in this multidisciplinary project. LTS Health acted as interface for multiple organizational departments, including scientific, quality assurance, finance, IT, logistics, operations, facilities and HR.

Process Modeling

LTS Health approached the project with a solid informational foundation. This initiated the development of accurate process documents of the current reference lab and highlighted potential automation opportunities. Detailed process documents for alternative business case scenarios were prepared and compared. Using advanced PinpointBPS® modeling tools, the standardization of staff rotation schedules and accurate calculation of FTE numbers, and utilization in future scenarios were made possible.

Facility Design

A surveyor was appointed to establish baseline facilities layout drawings, while LTS Health created concept diagrams for alternative solutions in the available space. The lab design was optimized to support the future growth of the facility with a streamlined process, while minimizing disruption to current operations. Another key to minimizing cost, downtime and rework was the ability to efficiently coordinate specifications between the lab, automation vendor and contractors.





Vendor Selection

As independent partner, LTS Health ensured that all possible automation options were tabled and evaluated objectively. Managing the interaction with automation vendors on behalf of the client made the service provided by LTS unique and allowed for viable solution selection in an environment where vendor offerings are biased to the strengths of their own solutions. LTS Health reviewed the original automation business case and developed three alternative business cases for presentation to the client's board.

Solution Design

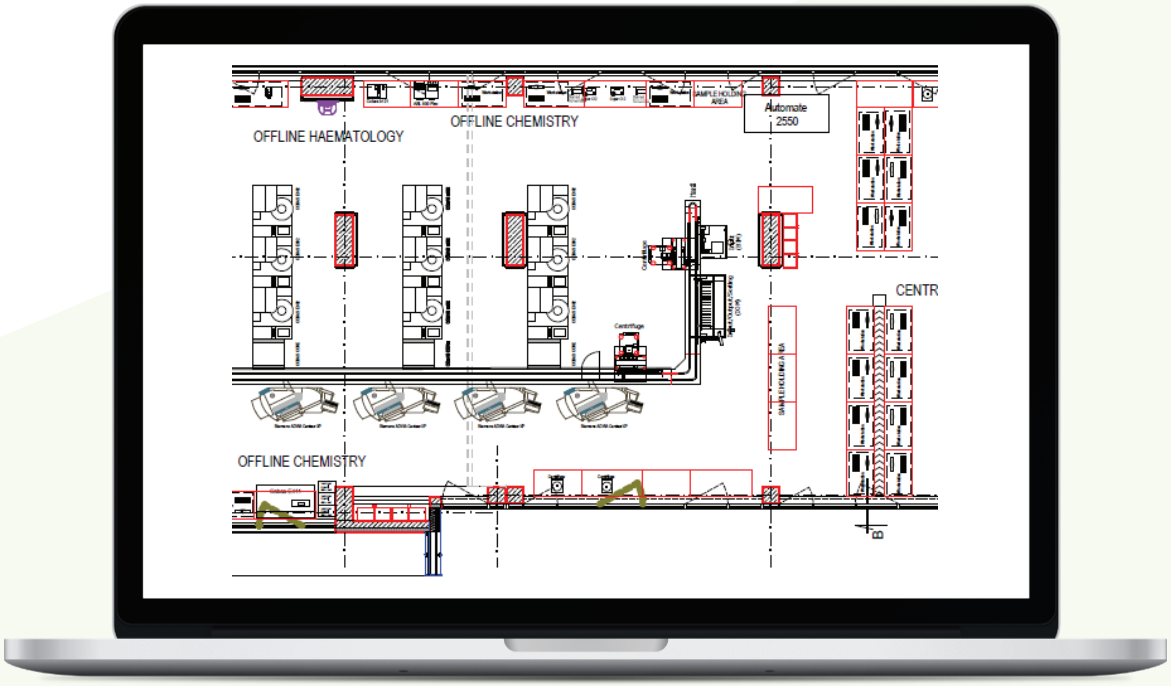
Upon selection of the appropriate solution for the automation of chemistry, immunoassay and infectious disease testing in the reference lab, the LTS team led a detailed configuration, layout and performance evaluation of the automation solution. The vendor automation team engaged with LTS extensively to agree on a final solution design to satisfy all client requirements, including redundancy, sample transport efficiency, turnaround time and capacity. These requirements were tested with detailed simulation models and systemprocess walkthroughs.

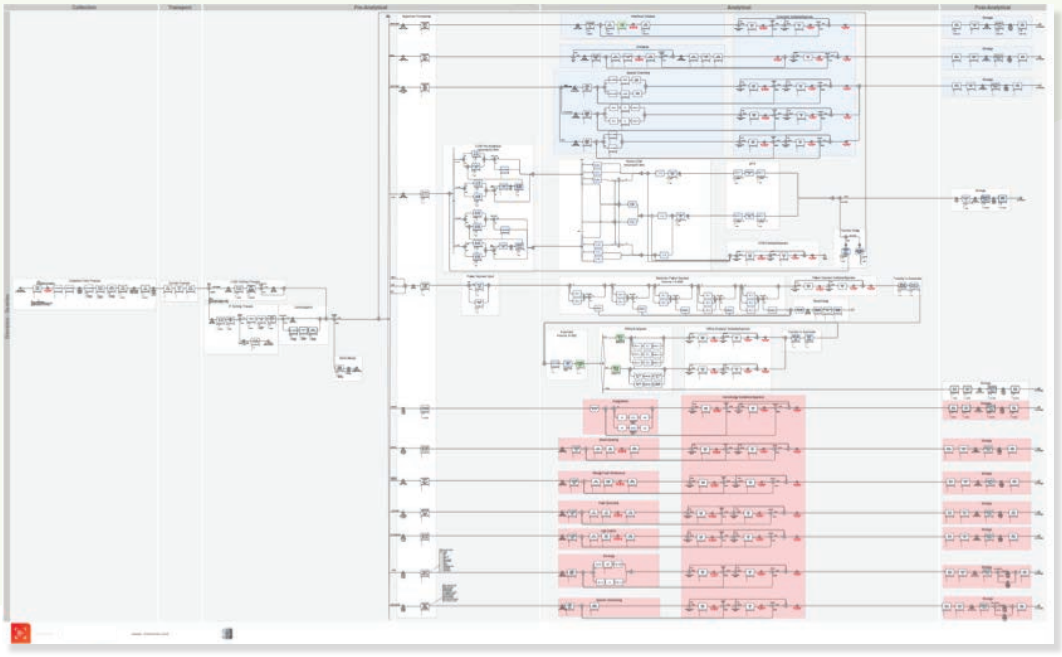
Knowledge Transfer

Effectively managing change in an organization is critical to the success of any strategic project implementation. The LTS team focused on embedding The 8 Principles of lab performance throughout the project. Twenty of the client's lab stakeholders also completed the Power of Process Champion course which facilitated common language and staff engagement.

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Process-driven design – Core Reference Laboratory.





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