

LIMS - In house development Vs off the shelf enterprise class

Laboratories are rapidly adapting to latest technologies for a variety of reasons like

- High quality standards,
- Stringent regulatory norms set by industry governing bodies,
- Standard operating procedures,
- Need for better control over workflow and processes,
- High standards to maintain data security and data integrity,
- Need for higher productivity due to increasing cost and workload.

Research and testing labs from across different industries like pharmaceutical, medical, food & beverage, chemical, clinical research, clinical pathology, genetic, bio bank, petroleum , petrochemical, agrochemical and environmental etc. are in the process of modernizing their facilities. Companies are under constant pressure to outperform their competition by launching new and better products. This drives the need for highly accurate data that is secure, well organized, easily accessible and user friendly. Software systems designed specifically for laboratories meet most of these requirements and are popularly known as LIMS - Laboratory Information Management Systems. Some call these LIS – Laboratory Information Systems or LMS – Laboratory Management Systems.

While some organizations are well informed about such systems, others face the dilemma whether to build a customized system in-house or to opt for a ready to deploy system.

- **Quality of design:** An Enterprise edition is designed by a team of functional and technical experts with inputs from different laboratories. Issues from real time scenarios are discussed thoroughbred and addressed. This makes the system robust and fool proof. On the other hand, an in-house developed system is limited by the functional knowledge and technical expertise of the individual(s) who design and develop the system.
- **Compliance with regulatory norms:** An in depth knowledge of norms defined by regulatory governing bodies like USFDA and MHRA, like for example, compliance with ‘21 CFR Part 11’ is vital, especially when the system is designed for use in a regulated environment.
- **Definite timeline:** Implementing a market tested and matured enterprise edition by a team of professionals saves a lot of time. The duration of the project can be estimated in definite terms and the final Go Live dates can be precisely planned.

- **Cost effectiveness:** Developing a system from scratch incurs high cost due to the longer duration of achieving the desired outcome and the number of iterations that a system goes through before it evolves in to a matured product. Besides, the valuable time of the in-house functional experts is diverted in to a non-core activity like system design. An enterprise edition of the system may initially seem to be expensive the overall cost of having a robust system that is professionally maintained will prove to be very cost effective in the long run.
- **Success of outcome:** Most companies that have attempted in house development had to scrap the project after spending a lot of time and effort due to the project becoming unviable in terms of cost and not achieving the desired outcome. Where as a professional system development company would have gone through a few learning cycles and know what exactly should be done. The developed system is rigorously tested with all possible scenarios to ensure that the system is bug free.
- **Organized and systematic implementation:** Professional and globally practices like Implementation Qualification (IQ), Operational Qualification (OQ) and Production Qualification (PQ) are done by implementation experts in a systematic and organized manner.
- **Maintenance and Support:** A LIMS vendor's team of experts ensures that the system is professionally maintained and supported. The system is upgraded from time to time through a continual Improvement process. A shared resource model is cost effective and dependable. When in house experts leave the organization finding the right replacement and getting the new staff to understand the intricacies of the system and come up to speed to maintain it is a daunting task for the organization. Any failure in this area here can lead to show stopping down time or a major mess of the system.
- **Training and documentation:** An enterprise edition of LIMS comes with training, admin and user manuals as a standard.

These ready to use LIMS are designed for versatility, security, accessibility ensuring any time connectivity over a secure web network interface, cross platform and cross database compatibility with customization possibilities. Well established research organizations and laboratories choose to implement enterprise edition of LIMS after a lot of deliberation and for a bunch of good reasons.