

focus on **Laboratory Products**

Laboratory Equipment – Maintenance or Management?

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Pharmaceutical companies invest huge amounts in procuring their lab-assets which includes capital equipment such as High Performance Liquid Chromatography, Gas Chromatography, mass spectrometers, ultra performance liquid chromatography (UPLC) and hybrid systems (LC/MS, GC/MS, MS/MS) as well as other small end equipment such as balances, centrifuges etc. These capital equipment can cost from USD 50,000 to 500,000 each.

The life science segment including pharmaceutical industry, research organisations, universities and government agencies is continuously facing pressure due to economic downturn. The patent cliff is compounding to the financial constraints faced by pharmaceutical companies. Adding to this the market of capital lab equipment has witnessed in these budgetary constraining environments the pharmaceutical companies are looking for cost-efficient and qualitative management of their lab assets. Lab managers are looking for service providers who can:

- Decrease the total cost of ownership by increasing uptime
- Increase useful life cycle of the equipment by scheduling timely maintenance
- Help in asset procurement, use and relocation

The procurement department is looking for:

- Procuring best services for the labs
- Opportunities to earn some cost savings at the same point.

The general difference between these two approaches is that procurement driven initiatives tend to focus more on cost reduction, while laboratory driven initiatives tend to focus more on laboratory productivity.

To remain focus on the core business of labs i.e. research, asset management services are being outsourced. Best practices followed for laboratory equipment maintenance revolve around preventive maintenance schedules and outsourcing. Changing business environment demands a fresh look on the current practices. The need of the hour is having a holistic approach for laboratory equipment management with consolidation and cost-savings target.

Traditionally on-site service models are deployed primarily by outsourcing either to a third party service provider or respective OEMs (Original Equipment Manufacturers). As consolidation is becoming a popular trend across the value chain in pharmaceutical business, OEMs are now offering a holistic one point solution for lab maintenance and asset management under Multi-Vendor Service (MVS) model. Alike from service model based on OEMs and third parties, the MVS offer preventive and corrective maintenance along with process optimisation which includes asset tracking, useful life estimations, asset redeployment and asset disposition.

The integrated service model decrease the total cost of ownership by streamlining the services process, increases operational efficiency and reduces the expenses. MVS helps the lab manager and procurement team to devise a more informed and robust approach for capital planning and asset purchasing. MVS offer turnkey cost-effective solution for lab services and asset management by optimising the risk involved.

Asset Management Models

There are four basic models adopted across the industry for delivering asset management services which includes in-house teams, third party service provider, OEM service teams and multi-vendor service model.

In-House Teams

Many companies outsource the maintenance and services segment of their business due to cost effectiveness. Few companies which own in-house teams work in collaboration with OEMs or third party service providers.

OEMs Service Teams

OEMs offer services for their equipment at individual level. The services are provided by the factory trained and OEM supported engineers who guarantee a qualitative low risk of the model. This ensures soft cost savings in terms of uptime of the equipment and following uninterrupted research process. On the same hand it increases the total cost of ownership due to comparatively costly spare parts and labour, and high administration cost.

A descriptive cost-value based analysis must be done before getting into OEM service model. The model is mostly preferable for the small labs. Considering the low risk involved and resulting soft cost savings, large labs also frequently engage with OEMs for maintenance services.

Multi-Vendor Service Model

Multi-vendor service model is a new initiative from the OEMs of lab equipment to consolidate the wide spread business segment of lab equipment maintenance. The OEMs primarily by themselves or few times by collaborating among themselves offer one spot solution for instrument qualifications, preventive and corrective maintenance, validation, and regulatory compliance and metrology services. As a turnkey solution provider for asset management, multi-vendor service provider follows a holistic approach which includes asset tracking (uptime and downtime), maintenance (corrective and preventive), compliance adherence, inventory management, equipment relocation and disposal. This enables the lab manager and procurement team to devise a more informed and robust approach for capital planning and asset purchasing.

The primary multi-vendor platforms are OneSource by PerkinElmer, Unity Lab Services by Thermo Fisher Scientific, CrossLab Services by Agilent Technologies and Lab Asset Management Assessments (LAMA) and Life Cycle Asset Management (LCAM) by GE Healthcare Life Sciences.

Third Party Service Providers

There are many regional third party service providers who offer cost-effective services for labs, but quality and associated risk are the trade-off points of the model. Being regional players the third party service model is unable to offer the high level service standardisation across the labs located at different sites. The model is mostly preferable for the small local labs. The technical capabilities and associated risk must be analysed first before engaging with third party service providers.

Value Comparison

Depending on the lab type and size, number and condition of assets, staff size and other factors, a detailed value comparison must be done before adopting any service model.

Risk vs. Value

The potential risks associated with each of the four mentioned models were considered in detail while doing the following analysis. However, it should be noted that recent focus by regulators on data integrity during laboratory audits has the potential to drive service/compliance/consolidation/harmonization in order to reduce compliance risk even further. In this context, a data integrity aligned multivendor approach may represent the lowest compliance risk.

In-House Teams

Having an in-house team is likely to make operations totally dependent on the allocated resources for any maintenance. In continuously changing technological environment the efficiency and technical expertise of the team is always a concern. Any resource loss would add to the risk. In case of failure of in-house team the maintenance is done by the OEMs or third party service provider which further increases the down time of the equipment. The in-house teams are helpful in terms of swift attending the problem but risk associated with the related solution is high.

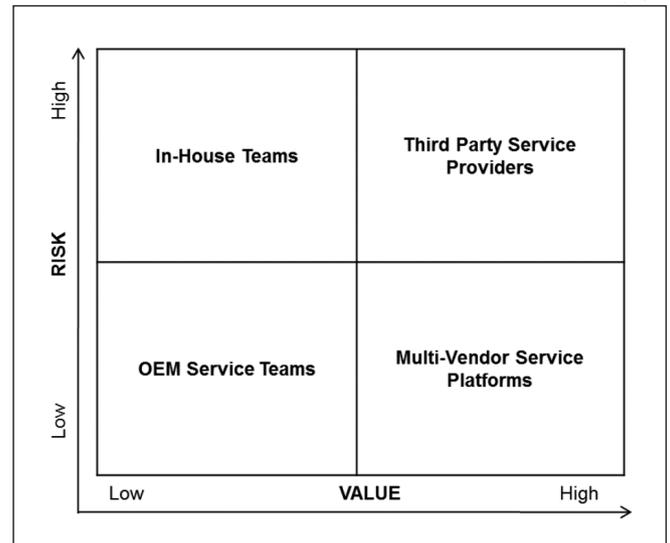


Figure 1. Asset Management Models – Risk vs. Value Comparison

OEM Service Teams

This model offers the least perceived risk associated service but the value is comparatively low as primarily the response

time of OEM team is slow. By the general process, OEM tries to understand and solve the problem through indirect means such as telephonic conversation and later response in-person.

This leads to the loss of productive time of the research team and also increases the downtime of the equipment. An on-site team or close vicinity to the OEM, likely favours adoption of this model

Multi-Vendor Service Model

In terms of quality and precision of the service, multi-vendor service provider is comparable to the OEM service team. The engineers are factory trained in a manner so that they can handle the equipment supplied by other vendors. Multi-vendor service provider also supports on-site services. By targeting lab process optimisation they support whole value chain of the lab maintenance and service segment.

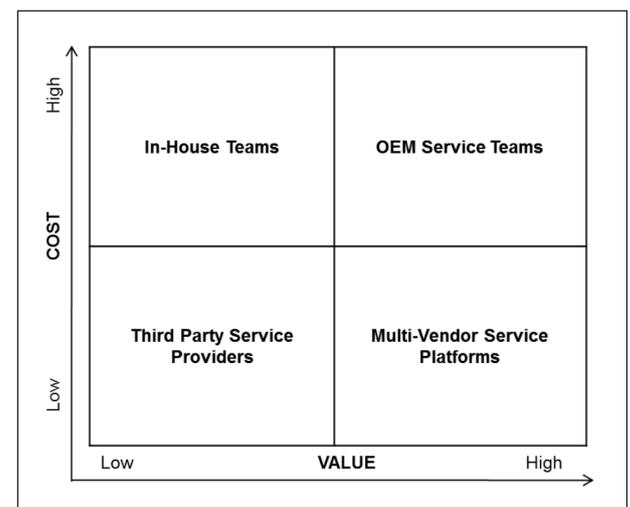


Figure 2. Asset Management Models – Cost vs. Value Comparison

Third Party Service Providers

Third party service providers offer services often through engineers and staff members who were trained and employed by various OEMs in past. As a result, these personnel are efficient in handling equipment of various brands which consequently bring cost saving to the end-user in terms of low administration and less labour. But in the world of frequent technology changes, where OEMs are thriving to occupy more market share by offering higher throughput and sensitive instruments, the technical capabilities of these engineers are questionable. This increases the risk and brings quality of the services under scrutiny.

Cost vs. Value

Procurement department should adopt total cost of ownership as a primary decision making function for managing laboratory services. The integrated approach implemented through multivendor service model would likely offer more benefits to the buyers.

In-House Teams

Maintaining an in-house maintenance and service team requires huge investment on staffing, training, infrastructure, and inventory management. This is a primary reason behind outsourcing of asset management by most of the companies.

OEM Service Teams

This model increases the administration cost due to management of multiple contracts by several OEMs according to the equipment present in the lab. Depending on the contract, many times the customer has to bear the travelling and other cost associated with the engineers serving on-site. OEMs response time to the requested service also depend on the preference and attractiveness of the whole account with the customer. Hence, there are more probabilities of getting slow responses from the supplier in case of very few equipment from them. This further increases the downtime of the equipment which in turn increases the loss in terms of productive time of the research team.

Multi-Vendor Service Model

As a one point solution provider the multi-vendor service provider offer a cost effective solution for asset management. The integrated service model decrease the total cost of ownership by streamlining the service processes, increases operational efficiency and reduces the expenses. This results in bringing both direct cost savings in terms of total cost incurred for services across the lab and indirect cost savings by decreasing average time spent by research team on equipment maintenance.

Third Party Service Providers

These regional companies do not have the large overheads as the global OEMs and hence, they able to provide services at better monetary points as compare to OEMs.

Asset Management-Optimum Solution

For large labs multi-vendor service model offers optimum solution for asset management. For very critical equipment, along with multi-vendor service provider a small in-house team can be deployed to ensure the uptime of equipment and very low hindrance in research processes.

IMPACT MATRIX

Process Optimisation	Process Optimisation		
Lab Optimisation	Facilitate lab sustainability by providing economic and efficient, and environmentally and socially sustainable laboratory solutions	Lab Optimisation	
Asset Optimisation	Brings more visibility to asset utilization and helps research community and lab managers in accessing right usage of assets for research operations	Upturn the asset utilization by maximising the uptime of equipment	Asset Optimisation
Service Optimisation	Increase coordination between all stake holders such as research teams, procurement and lab managers, and help them in taking strategic decisions	Reduce number of service contracts which decreases administration pressure and increase cost saving	Centralize scheduling of preventive and corrective maintenance brings more effective maintenance cycles and provide soft cost savings

For small labs with limited number and type of equipment OEM service teams are best option. Small labs like university labs can also collaborate among themselves and form a cartel to utilise benefits of multi-vendor service model.

Third party service teams can be useful in times of sudden break out as their response time is quick and are cost effective also.

Advantages of Multi-Vendor Service Models

Multi-vendor service provider targets to process optimisation rather than equipment optimisation. This leads to an overall improvement in laboratory business segment and helps the various stake holders associated with the lab at different value points such as procurement, lab manager and research department.

Multi-vendor service provider aimed towards:

Process Optimisation

Implicates strategic partnership between end user and multi-vendor service provider to facilitate end to end lab management

Lab Optimisation

Take account of asset utilisation and value versus cost analysis by leveraging various analytical and IT tools.

Asset Optimisation

Includes centralisation of warranty, contract and purchase information

Service Optimisation

Involves scheduling and tracking of maintenance across the lab through on-site and regional field service expertise

In summary, a holistic approach for laboratory equipment maintenance must be adopted for better quality maintenance and sustainable laboratories.

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