



Empowering ERP Asset Management Solutions

Benefits of an Oracle eAM Health Check

*10-step assessment culminates
with actionable system and
process recommendations*

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Enterprise asset management (EAM/CMMS) solutions like Oracle eAM are valuable business tools that represent a significant investment and offer a sizeable payback when fully and effectively utilized. Even the best implemented systems require audits to ensure that the maximum return is being realized.

EAM best practices and standards change and EAM vendors routinely add powerful new features and functions to their software that companies need to implement correctly to align with their work flow.

Higher forces are also at play. The needs and priorities of companies and markets evolve, as do leadership, regulatory requirements, and information technology options. Changes in personnel, products, equipment, inventory, and throughput are just some of the dynamics needing to be managed.

An Oracle eAM Health Check can help to bring the system to top form by resolving common challenges, and optimizing it to meet maintenance goals and drive business improvement.

Structured Health Check process

Whether you are currently using Oracle eAM, have purchased but not yet implemented Oracle eAM, or are considering eAM, the goals of the Health Check are the same:

1. Determine where your maintenance practices are today in relation to best practices
2. Identify current challenges and opportunities in your software and processes
3. Provide a roadmap going forward

Each Health Check assessment delves into the 10 building blocks of an optimal asset management program, from the core foundational structure to the best practice strategies that elevate a program's success. A standard assessment questionnaire is used to ensure that no stone is left unturned, and an efficient agenda is followed to find answers, identify opportunities, and solve existing problems.

The Health Check addresses everything from the effectiveness of the software setup to the effectiveness and efficiency of the maintenance processes. It evaluates the potential business benefits of updating or upgrading the current solution, and establishes project estimates for recommended actions including custom training on new processes.

The deliverables of a completed Health Check reflect the current state of eAM implementation:

Using Oracle eAM

- Complete assessment of current eAM setup and use
- Practical solutions for more effective configuration and use
- Better integration with the EBS platform
- Custom training on revised processes

Purchased but not yet implemented Oracle

- Complete assessment of current maintenance solution
- Useful report on the benefits of implementation
- Detailed project plan and staffing estimates
- Management presentation of cost/benefits to fund the eAM implementation

Using Oracle EBS with a best-of-breed EAM but considering Oracle eAM

- Complete assessment of current maintenance solution
- Report on the effectiveness of current integrations
- Detailed project plan and staffing estimates
- Management presentation of cost/benefits to fund an eAM implementation

Following summarizes the 10 building blocks of maintenance best practice as assessed in an Oracle eAM Health Check:



Source: SAMI & VIZIYA

1. EAM setup and configuration

The first task of a Health Check is to determine how the existing EAM/CMMS solution is set up and configured. If the initial implementation was rushed or the configuration was not regularly reviewed and updated, this process will bring specific issues to light. Following are the types of the elements reviewed in this step:

- Organization setup
- Parameters
- Categories
- Costing
- Etc.

Example questions:

- Are your eAM resources assigned to a department?
- Do you utilize attachments to store work instructions?

In this phase, the analysis ranges from whether a separate eAM inventory organization is or should be set up, to whether lookups are short lists normalized across all organizations. Other points include whether to use the average cost method and whether the accounting setup is flexible enough to handle virtually all scenarios.

Lastly, it will address usability considerations such as how eAM can be made more user friendly with greater personalization.

2. Asset strategy

Once the software setup is understood, it is time to focus on the overall asset strategy and structure. For this step, the following aspects are evaluated:

- Asset criticality
- Asset groups
- Hierarchy
- Asset specifications
- Asset bill of materials
- Failure analysis
- History

Example questions:

- What is your asset group definition approach?
- How complete is the data in the asset attribute file?

The most important determination is whether asset criticality is driving the asset strategy. Too often, companies fail to define which assets are the most critical and therefore spend too much time and effort on less important assets, and too little where it counts. Understanding which assets have the greatest influence on an organization's maintenance costs or throughput is not only important from a work scheduling point of view, but it also indicates where failure analysis efforts should be focused.

Another common opportunity is in the makeup of asset groups. They are often set at too high a level, such as pumps and motors rather than manufacturer, make, and model. This causes bill of material issues and complicates reliability centered maintenance (RCM). The asset category is the appropriate field for categorizing similar

equipment, not the asset group. Having specific asset groups for unique equipment should be the norm. The Health Check analyst can provide practical recommendations for improving asset groups, and how the right reporting strategies will minimize the impact on the asset history.

Other strategy considerations include whether the asset hierarchy includes virtual assets that mirror cost centers, departments or locations (allowing costs to be analyzed similarly to how they are in the general ledger), or whether the hierarchy allows cost roll-ups to better support maintenance cost analysis.

3. Stores and procurement

MRO inventory and procurement management practices play a significant role in asset management success as the necessary parts must be on hand when needed. The Health Check analyst will assess the complete supply chain function, such as:

- Spares strategy
- Rebuildable items
- Replenishment planning
- Non-stock items
- Contract services
- iProcurement

Example questions:

- Are actual materials consumed compared against planned usage?
- Are purchased direct items reviewed for assignment of inventory item?

One of the more common findings is problems in the setup of rebuildable items. There are several options in the cost setup to enable rebuild cost tracking while also taking advantage of the serial history, including how often a particular rebuild item was repaired. Serialization is encouraged for high dollar items or where repair history is important.

There also tends to be some confusion between one-step and two-step material processes. For instance, if the Oracle Parameters screen is flagged to automatically create issues, issuing the part using a one-step issue doesn't relieve the allocation, which throws off min-max planning.

Many companies have not identified which parts are most critical and require special care to ensure an adequate supply. Often overlooked is the capability to set up asset bills of material identifying critical spares for those items.

Also Oracle iProcurement is often underutilized and can be easily set up to enable direct material items to work orders. It can also be extended to internal catalogs and supplier punch-outs, saving significant time and money.

Other hot button topics include whether item searches are hindered by non-standard descriptions and missing manufacturing part number cross-references; whether cycle counting is used; and whether barcoding and mobility are employed.

4. Work definition and execution

Work definition and execution is one of the most consequential tasks in the Health Check as it spans the complete work life cycle. Numerous data points and processes are reviewed with the goal of increasing wrench time and minimizing administrative and wait times. Some of the major processes include:

- Work identification
- Work priority
- Labor estimates
- Material planning
- Shutdown planning
- Work permits
- Work scheduling
- Contractor labor
- Material issues
- Failure data
- Quality plans

Example questions:

- When are notifications or work requests raised in the system?
- How are work order priorities defined and assigned to work?

Oracle's Quality Collection Plan functionality is an often overlooked but valuable feature. It offers great potential for maintenance by facilitating the migration from preventive to predictive and condition-based maintenance (PdM and CBM), enabling significant ROI and reliability gains. Using quality plans, companies can capture job notes, as is/as left information, and measurements. With data, maintenance can define event triggers to generate condition based work orders and trend variables.

Work execution challenges may involve how to enter time into the system or relieve parts reservations. Guidance is often needed around how to estimate work duration and track hours against the work order. Also how does the data interface with payroll and the general ledger (GL). Options include setting up the system to cost the labor hours and run separate from the GL, or fully integrated with the GL as direct costs.

Contractor cost issues are also common. Best practice operations break out not only internal labor and materials but contract costs as well. There are multiple ways to approach contractor costs, whether it's through non-stock items, contingent workers, or capturing the purchase cost of the contract service against the work order.

Other assessed conditions include asset activities used only for preventive maintenance (PM) work, whether work requests are being used to initiate work orders, and whether work instructions are being used in multiple job steps or as an attachment. Further points on work orders include time captured, job notes, parts used, and whether to assign at the individual or team level.

5. Planned and predictive maintenance

This phase of the Health Check delves deeper into the structure and timing of PM and PdM work. It covers topics such as the use of base dates for regulatory requirements, meter-based versus day-based PMs, quality plans for PdM and CBM, and nested versus manual PM creation. Checkpoints include:

- List date
- Day based
- Meter based
- Condition based
- Predictive
- Nesting
- Base date
- Start to start
- Complete to start
- Compliance reporting

Example questions:

- Are labor estimates included on all planned work?
- Is planned work reviewed for planning accuracy?

Properly configured, Oracle's PM generator is fully capable of supporting all the scenarios handled in other industry best-of-breed systems. For example, eAM fully supports meter based planning that presents an extrapolated date of when the next PM will occur. It uses the meter to calculate a run rate, and the run rate to determine the next PM date.

PM practices are also reviewed. For instance, if PMs are not generating follow-up work, then they are probably being conducted too frequently. In order to monitor this properly, rather than performing the repair as part of the PM when an issue is found during an inspection, a follow-up work order should be created. This also improves failure analysis.

6. Reliability centered maintenance

This step addresses whether and how well RCM capabilities are employed. This tends to be an underutilized capability yet presents a tremendous opportunity for improvement. RCM enablers studied in this step include:

- Failure sets
- Failure analysis
- Failure mode and effects analysis (FMEA)
- Reliability engineering

Example questions:

- Are failure sets effectively set up and assigned to the right equipment?
- Are there engineers reviewing the data for root cause?

Frequent findings reveal that asset criticality is often not defined or used in RCM, or that asset groups are defined at too high a level and have no appropriate

failure set. Also failure sets are often defined at a macro level and have too many choices for the cause of failure.

A common recommendation is setting up failure sets and linking them to asset groups, and making them mandatory when working on those assets. This practice is important for monitoring the mean time between failure (MTBF) and mean time to repair (MTTR).

Setting up failure sets may require guidance. Some companies expect a ready-made set of failure codes, but the reality is conditions vary from application to application. A pump operating in a caustic environment is going to fail for different reasons than a pump operating in a freshwater environment, for example. Failure sets should be set at the equipment type level and factor in the environment. In addition, care should be taken when setting up the failure tree to include meaningful failure codes, causes and resolutions, so the technicians don't have to scan through endless failure types to find the relevant cause and remedy.

In addition to optimizing failure sets, the Health Check analyst will make recommendations on how to implement or improve failure analysis, FMEA, and reliability engineering processes.

7. Training

Assessing training effectiveness involves a thorough investigation into what training has been performed, and how suitable the current training program is for meeting ongoing needs. Research elements include:

- Original training approach
- Ongoing training approach
- Training materials
- Training needs

Example questions:

- What was the original training approach?
- What material is available in the training library?

Too often, a minimal investment is made in eAM training when it is implemented and even less occurs after go-live. This can result in a lack of knowledge of basic functions, such as how to search, how to set up personal searches, and how to navigate between forms and self-service. Some users are unaware that a form side exists. Heavy users like planners and schedulers should have access to both sides, as a number of functions in the Oracle system are best done in forms. For example, the maintenance workbench provides tremendous capabilities.

Questions asked by users during assessments reveal additional training opportunities. A common example is, "What did you just do to get that screen (or data) to appear?" This query may arise after a Health Check analyst clears the initial search screen before searching for a work order, for example.

Remedial training and training program support is frequently requested following a Health Check. Training best practices include structured training programs with materials that are tailored to the user's responsibility. It involves delivering instructor-led classroom training using both PowerPoints and hands-on practice before go-live, for new hires, and in periodic refresher courses as a means for continuous improvement. It also incorporates user productivity kits (UPKs) for on-demand reference by the trainees.

8. KPIs and reporting

The quality and scope of asset management reporting and key performance indicators (KPIs) are the next focus of the Health Check. Business intelligence data and analytics are sorely needed but often not captured or presented in a clear, concise, and timely manner. Examples of the desired data points include:

- Planned vs. reactive
- PM effectiveness
- Schedule compliance
- Labor utilization
- Critical work completion
- Inventory turns
- Vendor performance
- BOM accuracy
- Overtime percentage
- Contractor percentage
- Requisition to PO lead time
- Cycle count accuracy
- Estimate to actual cost
- Bad actors
- Actual to budget

Example questions:

- How often do you review the effectiveness of PMs?
- Are there issues with data and/or reporting that are hindering compliance?

Oracle's out-of-the-box reporting is somewhat limited. Oracle Discoverer was the initial reporting tool of choice for eAM but is no longer supported. The replacement OBIEE framework is providing tremendous improvements in reporting capabilities. There are also third-party providers offering reporting and analytics tools, such as VIZIYA's WorkAlign Analytics.

OBIEE and the third-party solutions can greatly ease the reporting process. They are essential for implementing the KPIs needed to understand the true state of the business, and this intelligence should be readily displayed to the users as they enter the workbench.

9. Financial visibility and control

Effective financial analysis at both the plant and corporate level is dependent on high-quality and timely cost data. This step considers:

- Work order costing
- Budgeting
- MTD/YTD/LTD by asset
- GL interface
- Capital projects
- Inventory valuation

Example questions:

- Are you charging actual labor at a grossed up rate by craft?
- How are you accounting for maintenance expense today?

Oracle is very flexible in how it is set up. Work order costs can be tracked with no integration to the financials, or they can be fully integrated to enable direct costing. Health Check analysts determine whether and how well the financial integrations are set up, whether and how capital projects are used, the relationship between the balance sheet and expense inventory, and related financial processes and setups.

Integrating the EAM/CMMS solution with the cost engine or GL eliminates duplicate data entry and therefore improves accuracy, not only at the equipment and work order cost level, but rolled up to the plant level and for corporate-wide operations. Being able to look at the costs of repair across like equipment at multiple sites is one of the biggest value propositions of integration. Integration of projects and fixed assets likewise improve the quality of financial analyses.

An example recommendation is ensuring that when capital work is performed using maintenance labor, the cost is capitalized and visibility is provided into the support effort. Another consideration is the development of accurate maintenance budgets that satisfy both maintenance and finance users, as allowed by VIZIYA WorkAlign Maintenance Budgeting.

10. Continuous improvement

While the Health Check is designed to fine-tune and jump-start existing asset management best practices, an ongoing continuous improvement program will keep the practices in top form and prevent the systems, processes, and user expertise from becoming stale with the passage of time. Following are example assessment points:

- Overall equipment effectiveness (OEE)
- Maintenance cost reduction
- Overtime reduction
- Safety
- Asset life
- Return on net assets (RONA)
- Mobility

Example questions:

- Are you able to clearly identify the maintenance portion of OEE downtime?
- Is there a plan in place to achieve a specific overtime percentage?

This phase addresses issues such as whether OEE, availability, yield, and quality are tracked, and if the relationship between maintenance and RONA is properly understood.

OEE is an essential metric that requires awareness of available capacity, available production time, and how much is lost due to maintenance downtime, speed losses, scrap, etc. RONA tracking is also strongly encouraged as it measures how well the physical assets are used to improve shareholder equity. Sustained efforts to reduce maintenance costs and downtime, improve asset and workforce efficiency, meet safety objectives, and increase asset life are reflected in greater OEE and RONA.

Mobility is one of the ways to enhance these metrics. Mobile solutions for eAM save time and money while improving the accuracy of inventory and maintenance data. Oracle's mobile solution operates in connected mode and can serve in those situations where network connectivity is always available. Third party solutions such as VIZIYA WorkAlign Mobile can operate in both connected and disconnected modes, as well as cover a broad array of eAM user requirements.

Final deliverable

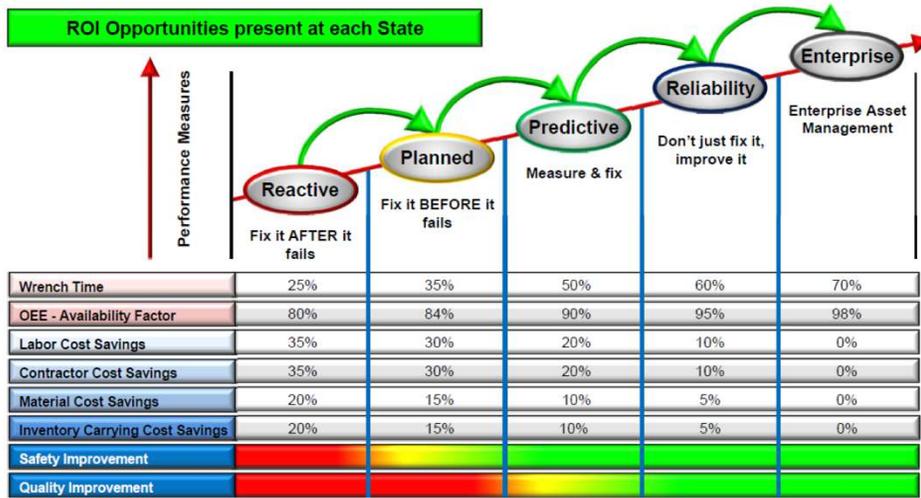
Once the Health Check assessment is completed, a detailed report of the findings and recommendations is provided. This includes recommendations for improving business processes, reconfiguring the software, and implementing focused training to better extract maximum value out of the existing Oracle eAM investment.

Health Check value proposition

At a minimum, a completed Health Check will help to resolve technical issues that have been preventing eAM from supporting maintenance best practice. However, it is the business process changes that will generate OEE and RONA improvements. Following are typical areas for improvement and approaches to quantifying the benefits:

- Identifying and eliminating system defects that limit the system's ability to support best practices
- Prioritizing work based on asset criticality, as those that most directly impact operating costs and/or throughput will increase both RONA and OEE
- Capturing costs for repairs at the work order/equipment level, which helps to identify "bad actors" and provide focus for either equipment replacement or PM re-evaluation
- Archiving standard jobs (activities), which reduces the amount of time to plan future repairs
- Improving work planning and scheduling to significantly reduce overall downtime and maintenance costs
- Correctly identifying spare parts and creating asset bills of material to significantly reduce downtime through ready parts availability, and also to reduce part costs
- Tracking the effectiveness of PMs and moving to CBM, which increases equipment uptime and reduces the cost of maintenance
- Performing failure analysis to prevent failures before they occur, which increases equipment uptime and reduces the cost of repairs
- Establishing KPIs and reporting on them regularly to encourage continuous improvement in schedule compliance, parts availability, equipment reliability, and similar goals
- Improving financial reporting to increase awareness and understanding of costly repairs, actual maintenance expenses, and budget statuses
- Measuring OEE and RONA, which places focus on areas needing improvement

Our assessments determine where your company is on the maturity curve and plots the desired company outcome. The Genesis model below, which calculates the potential financial benefits of an improvement program, highlights our approach.



The crucial piece is KPI identification and showing how to use the system to capture and report KPIs on an ongoing basis to assure the expected benefits. That is what gives the Oracle eAM Health Check solid and lasting value.



About Wes Holmes

Wes Holmes is an experienced Oracle eAM consultant. He has over 20 years of business experience covering MRP, ERP, CIM, EAM, CRM and many related manufacturing technologies.

About VIZIYA

Headquartered in Hamilton, ON, with offices in Barcelona, Perth, Atlanta and Dubai, VIZIYA is the industry leader providing bolt-on software products to enhance ERP-based asset maintenance systems. VIZIYA's proprietary WorkAlign™ Product Suite delivers seamless integration into existing ERP systems. With over 55,000 users at 850 sites across 5 continents, the world's best companies use VIZIYA products to help them better maintain their assets. Visit viziya.com for more information.