WHITEPAPER

Total asset management for the environmental services sector

Live-link your assets and facilities.

ULTIMO

SEE VITAL SIGNS.
TAKE VITAL ACTION.

TABLE OF CONTENTS.

COMPLEX AND COSTLY ASSETS

THE WORK OF ENVIRONMENTAL SERVICES BUSINESSES, WHICH HAS IMPORTANT IMPACTS ON SOCIETY'S SUSTAINABILITY AND QUALITY OF LIFE, DEPENDS ON A VARIETY OF COMPLEX AND COSTLY ASSETS. THESE NEED TO BE MANAGED COST-EFFICIENTLY, RELIABLY, SAFELY AND WITH CARE FOR THE ENVIRONMENT IF THEIR USE IS TO DELIVER BOTH COMMERCIAL PROFIT AND COMMUNITY BENEFIT.

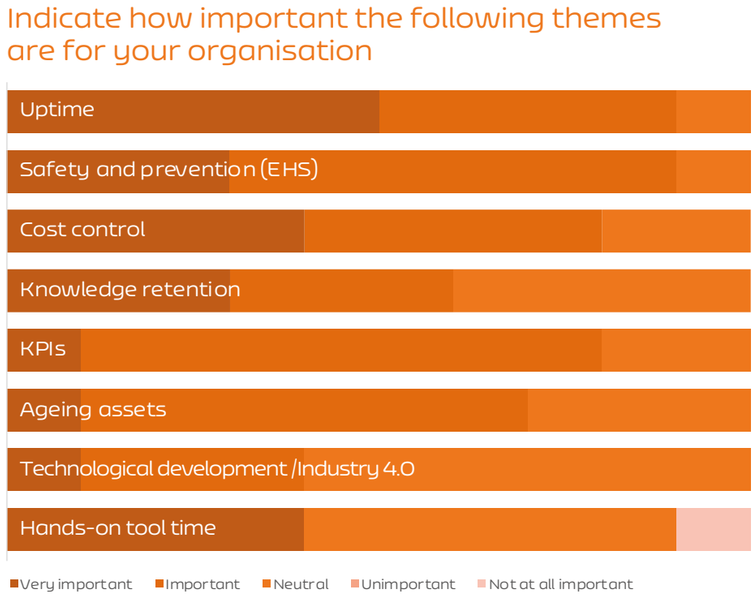

Figure 1 – Asset managers' main concerns in the energy and environment sector (source Ultimo 2020 EAM Trends Report data)

Amongst the most visible mobile assets in this sector are the vehicle fleets with which waste management companies collect household refuse and recyclable materials. Related fixed assets include large underground containers which are routinely removed and emptied by purpose-designed trucks equipped with cranes. Incineration, waste-to-energy and recycling plants are bases for another distinct part of the sector's activities.

Managers in environmental services must optimise capital-intensive assets as varied as buildings, facilities, containers, grab machines, forklifts, workshop equipment and ICT systems, along with highly specialised vehicles and their onboard kit.

This white paper will explain how enterprise asset management (EAM) software is the key to dealing efficiently with the industry's complexity of resources and processes. Furthermore, it will emphasise the value to fleet, maintenance, HSE and other managers of modular EAM software that covers all asset types and all aspects of asset optimisation within a single system.

Asset managers' simultaneous priorities

Figure 1 summarises asset managers' main concerns in the energy and environment sector, which includes waste management and waste-to-energy companies. For comparison, Figure 2 does the same for the transportation and logistics sector, which has many similar issues to environmental services – especially in terms of managing vehicle fleets. Figure 3 presents a summary for industries in general. This information comes from analysis of data gathered for the Ultimo 2020 Enterprise Asset Management (EAM) Trend Report.

The issue most often ranked as 'very important' (dark green in the charts) by energy and environment companies is asset uptime. This also appears to be

Transport & Logistics: indicate how important the following themes are for your organisation

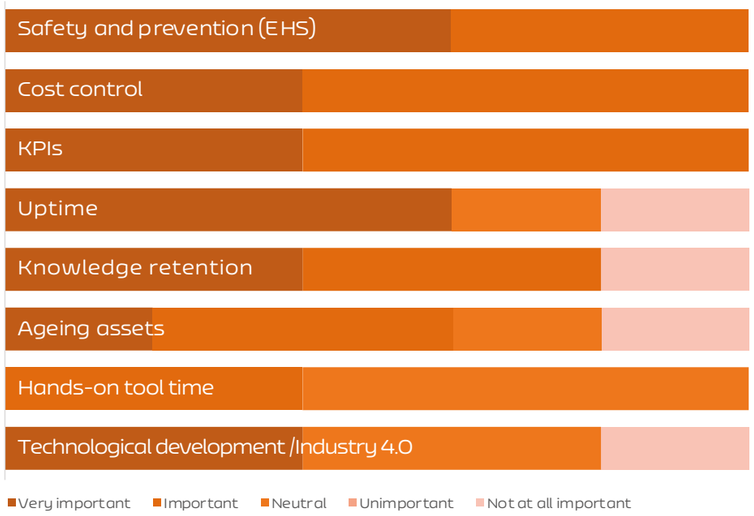

Figure 2 – Asset managers' main concerns in the transportation and logistics sector (source Ultimo 2020 EAM Trends Report data)

very important for transportation and logistics, but less so for industry as a whole. Knowledge retention also ranks highly for energy/environment and transportation/logistics but less so for industry in general.

Cost control and HSE

Cost control and HSE (health, safety and environment) are the other high-ranking concerns for energy/environment. Cost control appears to be more important in this sector than in industry generally, but perhaps less so than in transportation/logistics where profit margins are notoriously thin. HSE is less often ranked as very important in energy/environment than in transportation/logistics or general industry, possibly reflecting the more controllable conditions in which this sector operates. Nevertheless, environmental services businesses clearly understand that controlling costs, avoiding accidents, maximising asset uptime and retaining specialist knowledge is important in maintaining profitability.

Specialist and expensive activity

Compared to the process in many other fleet-based operations, maintenance of environmental services vehicles is a relatively specialist and expensive activity. This is largely due to their special engineering, high component costs and the rapid wear which results from heavy duties over multiple short distances. They cannot be maintained by general garage service providers.

In fact, there is now a trend for the workshops of environmental services companies to offer their specialism to others in the same sector. This provides extra income but introduces extra complication and cost control issues. Aside from vehicles, there are also of course many fixed assets to maintain on site and in the field.

Indicate how important the following themes are for your organisation

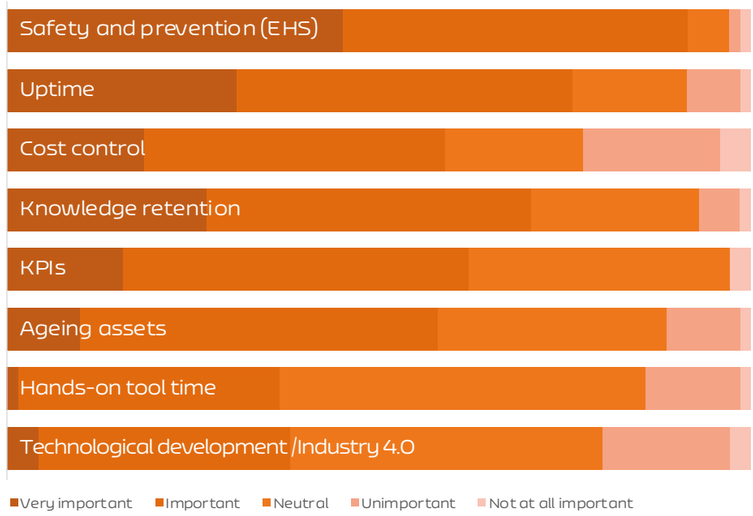

Figure 3 – Asset managers' main concerns in industry as a whole (source Ultimo 2020 EAM Trends Report data)

Potential extra costs and negative impacts

If a vehicle or plant facility breaks down, or is halted by an accident, substantial extra costs and negative impacts can result. From a commercial perspective, failure to meet contract requirements may be the most serious effect. For example, waste may remain uncollected in the streets or may overflow at a processing site. Customers and communities will complain, and the company's reputation will suffer. Time and money may be needed to recover the vehicle, repair damage and catch up on lost productivity.

HSE incident management, including inspection, reporting, analysis and related administration, is a key cost for this sector. In addition, there may be associated expenses such as downtime, repairs and replacements, clear-ups, fines, compensation payments, sickness absence and bad PR. Accidents or breakdowns on the road are often more time-consuming than those involving site-based assets, due to distances and traffic. Spills on the road or leaks from processing plants can have environmental as well as safety implications, related to legal requirements on correct waste handling, disposal and avoidance of pollution. Accident hazards on plants may involve heat, fire and use of mechanical handling equipment. Maintenance activities in workshops and on plant sites may also potentially expose workers to risks.

In addition to maintenance and incident management costs, this sector's asset managers deal with many other expenses relating to administration of, for example, contracts, personnel, insurance, fuelling and tyre supply.

To manage a company's entire fleet of vehicles and static assets efficiently, these complex and interrelated factors must all be considered at the same time. In practice, however, their data is often held and managed in separate systems.

DIVERSE ASSET MANAGEMENT CHALLENGES

CAREFUL INSPECTION AND MAINTENANCE ARE THE FIRST LINE OF DEFENCE AGAINST ASSET DOWNTIME AND ITS RELATED COSTS. DEFICIENCIES IN THESE PROCESSES CAN ALLOW A VEHICLE OR FIXED ASSET TO FALL INTO A POOR OR EVEN DANGEROUS CONDITION, INCREASING THE RISK OF BREAKDOWNS OR ACCIDENTS..

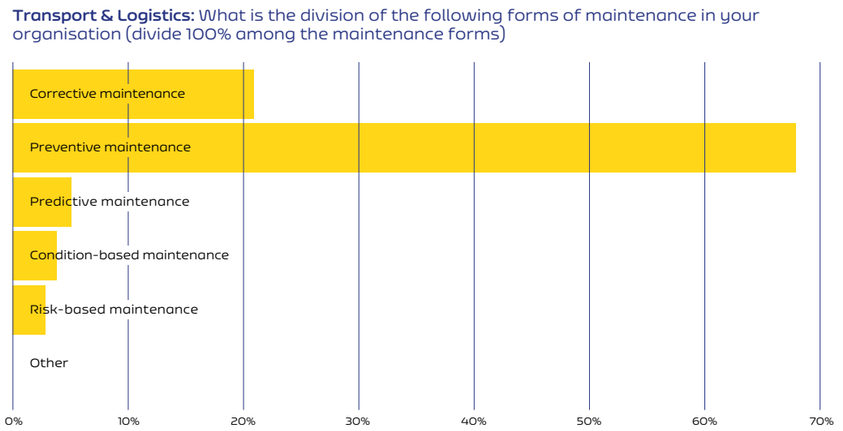

Figure 4 – Percentage of maintenance time spent on different approaches in the transportation and logistics sector (source Ultimo 2020 EAM Trends Report data)

Poorly maintained assets are not only less reliable and productive but tend to be less energy efficient and to require more spending on repairs in the long run. In addition to these drains on operating expenditure, inadequate maintenance shortens an asset's lifetime and therefore has an impact on capital budgets. When dealing with high-value assets such as those employed in environmental services, dependence on corrective or reactive maintenance is a risky strategy. In this approach, action is taken only when a fault or malfunction becomes noticeable – by which time expensive damage may already have been suffered.

Next step: preventive maintenance

The next step up in a maintenance optimisation hierarchy is preventive maintenance, which aims to repair or replace parts before they become excessively worn or, worse still, fail in service. Routine preventive maintenance, based on set calendar dates or operating periods, has the downside that parts may sometimes be discarded before replacement is necessary. More advanced approaches like predictive maintenance and condition-based maintenance use monitoring and analytical technology to determine the optimum timing of any intervention.

Figures 4 and 5 look at differences in maintenance approach between sectors, based on data gathered for the Ultimo 2020 Enterprise Asset Management (EAM) Trend Report. Responses specifically from environmental services companies were too few to show a trend in this respect. Instead, the transportation and logistics sector, whose fleet maintenance issues are similar in some ways to those in environmental services, is compared with industries in general. The results suggest an encouraging tendency for road vehicle fleet managers to use preventive rather than corrective maintenance. However, there is still scope for increasing this and for switching to more refined strategies.

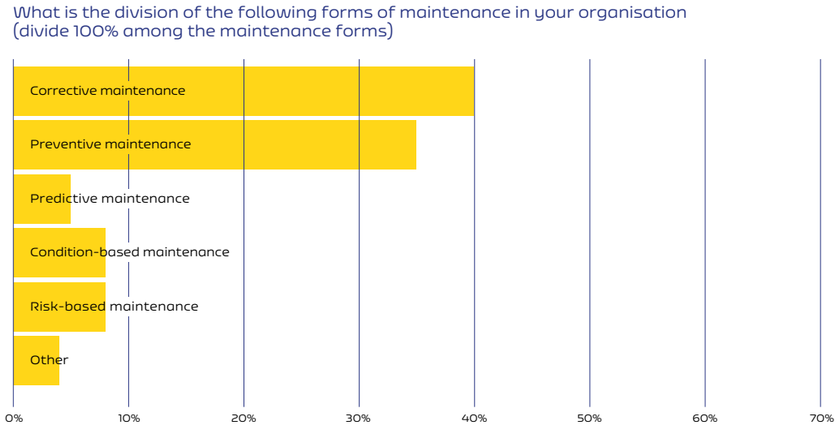

Figure 5 – Percentage of maintenance time spent on different approaches in industry as a whole (source Ultimo 2020 EAM Trends Report data)

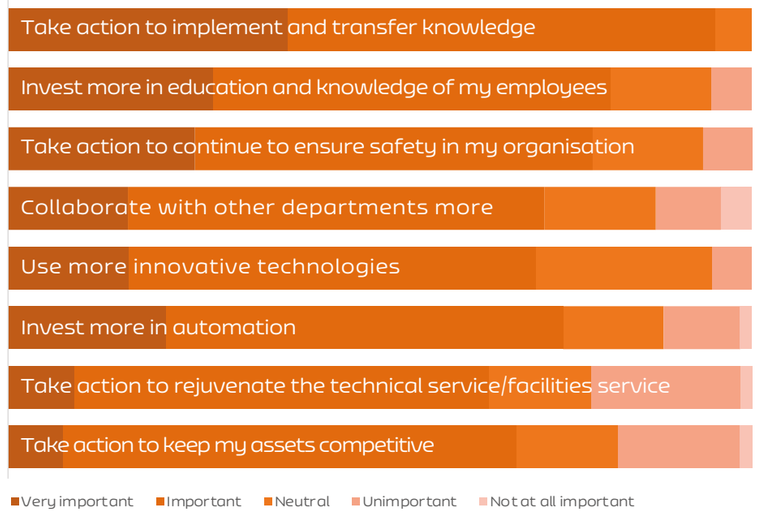

Figure 6 – Ranking of asset managers' future-proofing concerns (source Ultimo 2020 EAM Trends Report)

Optimum cost control

At the same time, companies need to beware of overspending. Optimum cost control demands that the level of maintenance should be appropriate to the specific asset and its application. In some cases, over-zealously maintaining an item can add unnecessary costs and downtime.
In any case, maintenance should be co-ordinated with the asset's use to ensure it is timed to cause the least possible disruption. For a road vehicle this may involve transferring the asset over a substantial distance from its normal location to a workshop, as well as taking it out of service.

Increased efficiency in maintaining and managing assets can be driven by the right kind of data, but often businesses fail to gather and use it effectively. Today's Internet of Things (IoT) devices, for example, can provide a rich source of digital data on asset use and condition, but without rigorous analytics its full value is not gained. At a simpler level, poor communication and sharing of information within a company is an obstacle to efficient co-ordination of activities.

Information is often held on different systems

A fundamental problem is that information on the many assets, processes and administrative matters handled by managers is held on different systems which do not link. That includes data essential for asset management, asset maintenance, HSE and much more. Systems are commonly further separated on the basis of different departments and asset types. In this context, a 'system' may mean a spreadsheet, a set of paper files or even the information in someone's head.

Under these circumstances it is impossible for managers to gain a clear overview of all relevant costs and issues, and to make fully informed decisions. Inevitably, this leads to inefficiencies in cost control and performance of assets and operations. Wasteful duplication of information and effort between systems, and inability to correlate factors when seeking solutions to problems, are just two ways in which this adds expense and blocks improvement.

Failure to make the most of today's mobile technology and connectivity is another source of lost opportunity for increasing efficiency. For example, drivers and technicians in some businesses are still dependent on slow and often paper-based processes for recording problems and job information while out on the road or during site visits. Poor communication and management of information also reduces an organisation's ability to retain and share the data it gathers and the cumulative experience of its workforce. Unless it is effectively recorded and passed to other staff, valuable knowledge may disappear as older employees retire.

Taking action to implement and transfer knowledge is asset managers' top priority when seeking to future-proof their business, according to Ultimo's 2020 Enterprise Asset Management (EAM) Trend Report. See Figure 6.

CASE STUDY

ROVA

ROVA IS A WASTE MANAGEMENT COMPANY WORKING WITH RESIDENTS IN 23 MUNICIPALITIES ACROSS THREE REGIONS OF THE NETHERLANDS TO IMPROVE ENVIRONMENTAL QUALITY.

Along with collection of recyclable materials from homes, and residual household waste from community underground containers, its work includes managing outdoor spaces. Before moving to an Ultimo enterprise asset management system, each of ROVA's processes was supported in a different way – ranging from Excel sheets to email workflows.

Beginning with Ultimo asset management and fleet management software, ROVA soon saw opportunities to improve process efficiency in other areas such as warehouse activities. Ultimo's integrated system also enables ROVA employees in the field to receive and process reports via their mobile phones.

CASE STUDY

ARN

ARN IS A WASTE-TO-ENERGY PLANT IN THE NETHERLANDS WHICH INCINERATES 300,000 TONNES OF NON-RECYCLABLE HOUSEHOLD AND COMMERCIAL WASTE EACH YEAR.

In the process, it delivers around 150,000 MWh of electricity and 800 TJ of heat energy annually for public use. It also produces useful biogas and fertiliser by processing organic waste. ARN uses Ultimo EAM software to integrate and oversee the management of its maintenance and safety processes in one system. This is part of a thorough approach to minimising the risk and consequences of HSE (health, safety and environment) incidents.

Amongst the Ultimo HSE software modules used are those for incident management, shift handover, work permits, lockout-tagout and management of change. ARN relies on Ultimo for rapid and effective communication between operators, technical services staff and others, especially in the case of equipment failures. The system provides for immediate recording and monitoring of such incidents, along with accurate, fast transfer of information to everyone who needs to know – allowing quick solutions to any problem.

ULTIMO'S EAM SYSTEM:
THE TOTAL SOLUTION

AN ENTERPRISE ASSET MANAGEMENT SYSTEM PROVIDES A FRAMEWORK FOR GATHERING DATA AND USING IT TO BEST EFFECT. IMPORTANTLY, ULTIMO'S EAM SOFTWARE IS MODULAR AND CAN BE BUILT INTO A TOTAL SOLUTION THAT ADDRESSES THE MANY VARIED AND INTERRELATED CHALLENGES DISCUSSED EARLIER.

By integrating data and processes, it avoids duplication of information and effort, correlates data and gives full visibility of the relevant activities, costs and issues. Ultimo brings everything together onto a single, easy-to-use asset optimisation and management platform.

For waste management companies running fleets of collection and other vehicles, the Ultimo EAM software is an obvious starting point. This covers a wide range of administrative information and tasks, including contract, personnel, insurance and fuelling management. Meanwhile, technical asset management EAM modules provide maintenance management software to optimise the condition, cost efficiencies and uptime of vehicles and their equipment.

Further Ultimo EAM software modules can be added for asset management and maintenance of ICT systems, infrastructure and facilities. The assets covered may include buildings, waste processing plants and machinery, underground containers and workshops.

HSE integrated with EAM software

Ultimo HSE (health, seafety and environment) modules can be integrated with the EAM software package. HSE processes and procedures are set and enforced by the system, which ensures automatic compliance by permitting maintenance tasks to go ahead only when all required safety steps have been taken. Key Ultimo HSE software modules include: work permits; lockout-tagout (LOTO) to isolate installations and equipment for safety during maintenance; management of change (MoC) for safe introduction of new equipment or processes; shift handover for vital information exchange between individuals and teams; and HSE incident management.

Ultimo consultants can also link the enterprise asset management software to existing systems used by the customer, so their data can be integrated. These may include transport management systems for planning the deployment and activity of vehicles.

Ultimo's asset planner shows 'maintenance windows' within which the vehicle can be inspected, tested, serviced or repaired with least impact on productivity. To make best use of that planned downtime, any impending part replacements or action to address emerging faults can be bundled into the same window.

Ultimo's aids to efficient management can similarly streamline specialist fleet maintenance carried out by a company's workshop department on assets from third-party environmental services businesses.

Other integration possibilities

Other systems with which Ultimo can connect, interface and integrate to obtain useful data for asset management include those for fuel cards, vehicle onboard computers, barcode scanners, parts stock lists and financial information. Environmental services businesses are typically very open to

innovation, and in co-operation with Ultimo consultants they can apply EAM software-based efficiencies to a widening range of processes.
In preparation, Ultimo consultants carry out business scans and run workshops with customers to determine what systems they use, what EAM software modules are needed and how they can be best integrated. As part of its service, Ultimo makes the necessary links.

In addition to Ultimo's standard selection of enterprise asset management modules, the software can be adapted easily to meet any special needs. Once the EAM system is in place, companies can expand on its scope – with help from Ultimo consultants – to make further business improvements. Options include failure analysis, training, labour deployment planning and more.
Ultimo EAM software provides a complete solution for all assets which the customer wishes to include in the system, along with effective interfacing between the related processes. Managers gain a full overview of costs and issues, enabling better cost control decisions.

Total cost of ownership

It allows calculation of the total cost of ownership (TCO) for each vehicle or fixed asset, and makes all relevant data, details and documentation easily accessible. This knowledge is crucial both in maximising the cost efficiency of an asset's use and in planning its eventual replacement.
Another key function of the Ultimo EAM system is production of instant reports in standard or customised formats. This enables easy demonstration of compliance with maintenance, health, safety and environmental regulations, and simplifies reporting for audits, internal quality control and fulfilment of insurance company requirements.

Ultimo enables good use to be made of information gathered via digital communication and connectivity technology. For example, it can integrate with third-party software which collects data from smart sensors in vehicles and provides actionable information to the EAM system. Similarly, data collected via Internet of Things (IoT) devices on static assets such as underground waste containers can indicate activities, malfunctions and measures of condition.

The Ultimo EAM system is cloud-based and gives authorised users easy access to its information and functions via desktop, laptop, tablet or smartphone. This flexibility enables remote and home working, where appropriate, and allows situations to be managed without necessarily spending time on travel.

Self-service functionality

Technicians in the workshop or in the field, as well as drivers on the road, can use Ultimo's mobile self-service functionality via a very simple phone or tablet interface. Through this they can instantly receive reports, instructions and information, and in the same way report on equipment failures and job progress, for instance. Their inputs go directly and immediately into the Ultimo EAM system for action, with no paperwork, separate systems or intermediate staff involvement to cause delays.
In the process, more and more employees become contributors of useful data – which makes the system even more powerful. Ultimo's user-friendly functionality improves communication and enables sharing of data for the whole organisation's benefit. It also provides an effective way of transferring an ageing workforce's expert knowledge into asset management and maintenance software to inform future workers.

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ULTIMO EAM CUTS THROUGH THE COMPLEXITIES

ASSET UPTIME OPTIMISATION, COST CONTROL, HSE MANAGEMENT AND KNOWLEDGE RETENTION ARE KEY FACTORS AFFECTING THE PERFORMANCE AND PROFITABILITY OF ENVIRONMENTAL SERVICES COMPANIES. THIS SECTOR'S COMPLEX AND COSTLY ASSETS RANGE FROM SPECIALISED VEHICLES TO FIXED EQUIPMENT, ICT SYSTEMS, PROCESSING FACILITIES AND BUILDINGS.

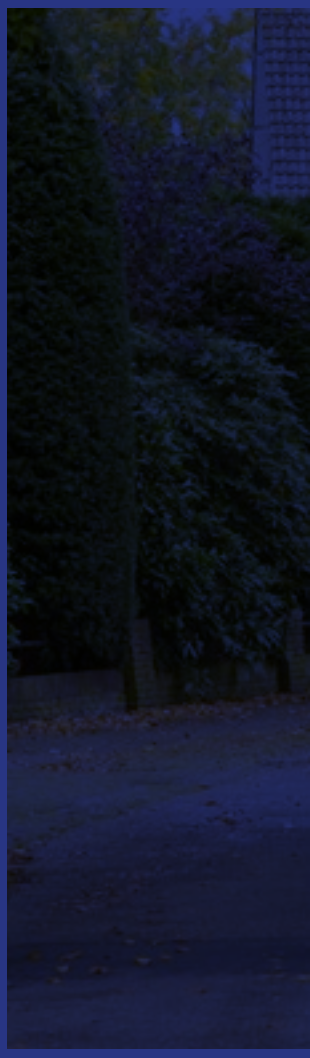
For maximum efficiency and effectiveness in managing these highly varied assets and their related processes, managers need a clear and simultaneous overview of all aspects.

The risk of downtime and added expense due to breakdowns and accidents can be reduced through proactive maintenance, but this must be carefully planned and optimally timed to minimise loss of asset availability. Management and maintenance of assets should at the same time consider costs and responsibilities relating to HSE. To make well-informed decisions and maximise efficiency, managers require good information on these and other interrelated issues. However, the necessary data is often difficult to access and held in separate systems.

Ultimo's enterprise asset management system is a total solution which brings all the relevant data together to enable management and maintenance of every asset from one platform. Its modular software can be selected and extended, as the customer wishes, to cover each different asset type and its needs. Fundamentally, it enables intelligent planning of asset inspection, servicing and repairs to minimise maintenance-related downtime while ensuring efficient, reliable asset condition and avoiding breakdowns.

Managers gain total visibility and control over their assets, along with their associated processes and costs, enabling sound, data-driven decision-making which saves time and money. In addition, Ultimo can enforce and demonstrate HSE and other regulatory compliance. Meanwhile, Utimo's easy, cloud-based accessibility and its harnessing of mobile technology and connectivity give added flexibility. It also future-proofs vital processes by retaining and sharing information, and by embedding expert knowledge into its management, maintenance and HSE software.

In all these ways, Ultimo cuts through this sector's complexities so businesses can operate profitably while continuing to have a positive impact on communities and the environment.



Ultimo is the #1 EAM Cloud platform that provides its customers with control over their assets and an unmatched and proven Return On Investment. Its benefits include increased uptime; management of costs and an extension in the lifespan of equipment; reliable control information; ease of adherence to laws and regulations and the assurance of a safe working environment. With Ultimo you see vital signs and you take vital actions.

Live-link your assets and facilities.

ULTIMO