

ASSET MANAGEMENT & MAINTENANCE PRIORITIES

2019 SURVEY REPORT

assetivity

AN ORIGINAL STUDY BY ASSETIVITY

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INTRODUCTION

All asset-intensive industries are deeply concerned with identifying and applying appropriate Asset Management and Maintenance practices to ensure they achieve their organisational goals. There are, however, a wide range of issues as well as potential approaches to meeting them, so setting priorities and selecting improvement actions is an on-going challenge. In this environment, information about what other organisations are doing can be invaluable, including both benchmarking against competitors/peers in the same industry sector and seeking inspiration from organisations in other sectors. Common questions include:

- Which business issues are at the forefront of other organisations improvement strategies?
- What initiatives are being progressed to address these challenges?
- Do businesses have the capabilities to progress these initiatives in-house or are they outsourcing support?

To ensure we understand the answers to these questions, Assetivity conducts an annual survey, inviting participation from individuals across an array of different sectors. This is the third year that we have run this survey, and this report analyses the results of the 2018 survey and compares this with the results from our 2016 and 2017 surveys. We are happy to share this knowledge with the aim of improving overall awareness of the issues and potential solutions in Maintenance and Asset Management in today's climate.

In this report we will analyse the results both in the wider context of Maintenance and Asset Management professionals and with respect to the top 4 industries represented within the sample. We also analyse differences between the three geographical regions most widely represented in the survey.

Sandy Dunn is the founder and Managing Director of Assetivity and has over 35 years' experience in Asset Management, Maintenance and Reliability.



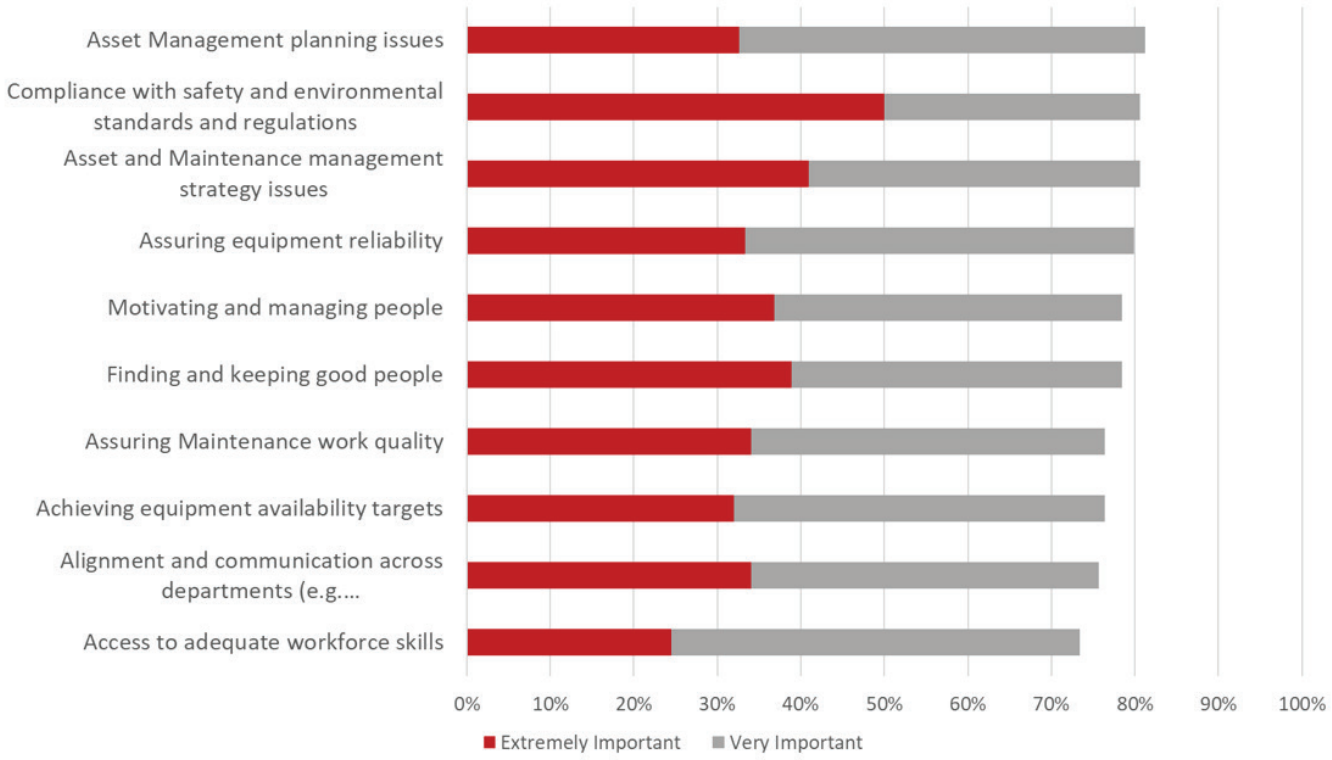
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2019 SURVEY RESULTS

Business Challenges

First, we asked the respondents to rate the importance of addressing 27 specific Maintenance and Asset Management issues at their worksite in 2019. The results were ranked by the percentage of respondents that believed the issues were either very important or extremely important resulting in the following top 10 issues.

High level business strategy issues (including "Asset Management planning issues") were seen as most significant. Safety/risk management challenges were also highly important ("Compliance with safety and environmental standards and regulations" ranked highest in the "Extremely Important" category). People issues (finding and retaining people and communications), productivity issues (reliability and availability) and work quality round out the top 10.



// Fig 1. 2019 Top 10 business challenges by importance rating

Asset Management and Maintenance Initiatives

Next, we asked respondents what improvement initiatives they were progressing or had planned for 2019 to address the issues they are facing.

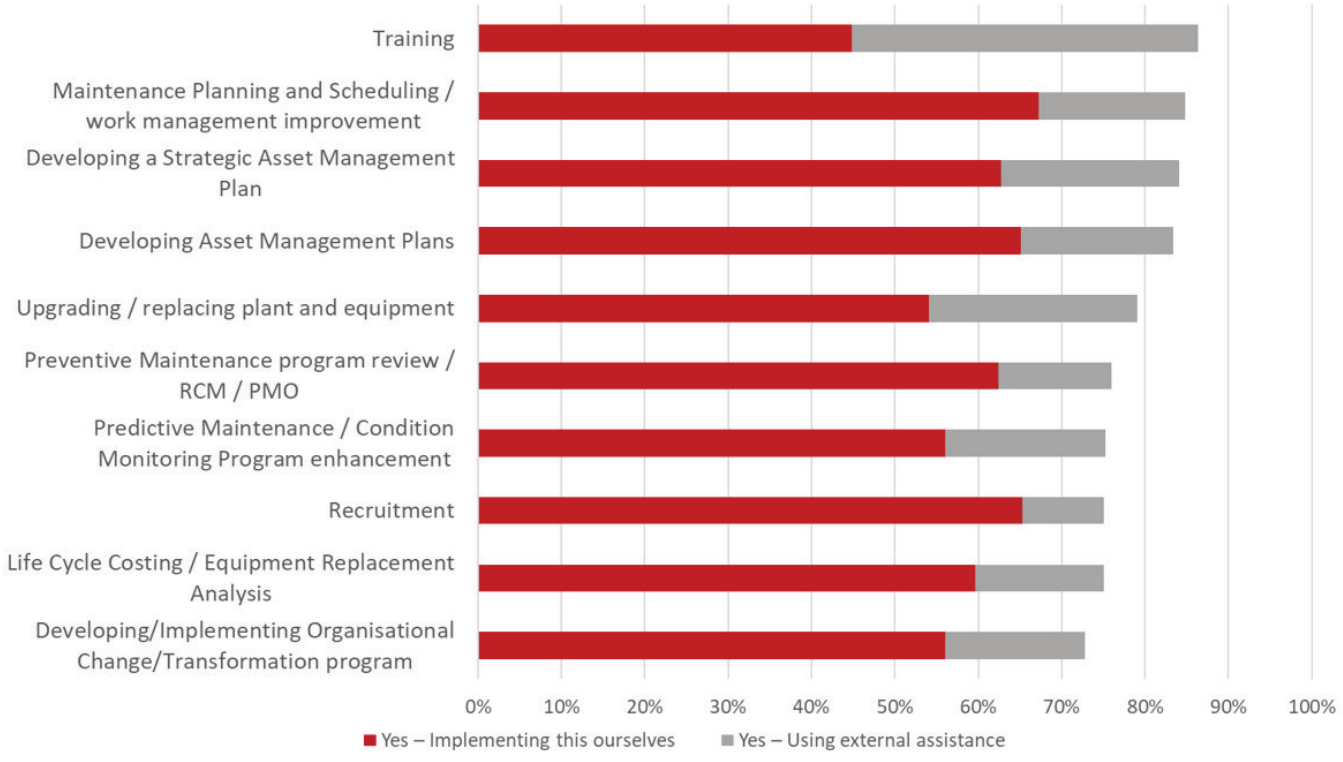
"Training" is the most common initiative, with 86% of participants reporting initiatives in this area, followed by "Maintenance Planning and Scheduling / Work Management Improvement".

The top 10 initiatives can be grouped in the following themes:

- Planning: Including work management, asset management plans, strategic plans and preventative maintenance programs.
- People: Including recruitment and training.
- Asset Replacement Decisions: Including lifecycle costing/replacement analysis and upgrading/replacing equipment

We have also observed an increase in the number of large transformation projects being undertaken by businesses and added this as a new 'initiative' category in the 2019 survey. Large transformation projects debuted at number ten in terms of initiatives being undertaken or planned for 2019.

Training is the most common initiative, with 86% of participants reporting initiatives in this area.



// Fig 2. 2019 Top 10 initiatives being implemented

Improvement Initiatives Addressed Using External Assistance

Training is the area in which external support was most likely to be engaged. 42% of all respondents (nearly 50% of all respondents who had training initiatives in place) indicated that they were using or planning to use external resources to assist with this.

Other areas where business use external resources for assistance were:

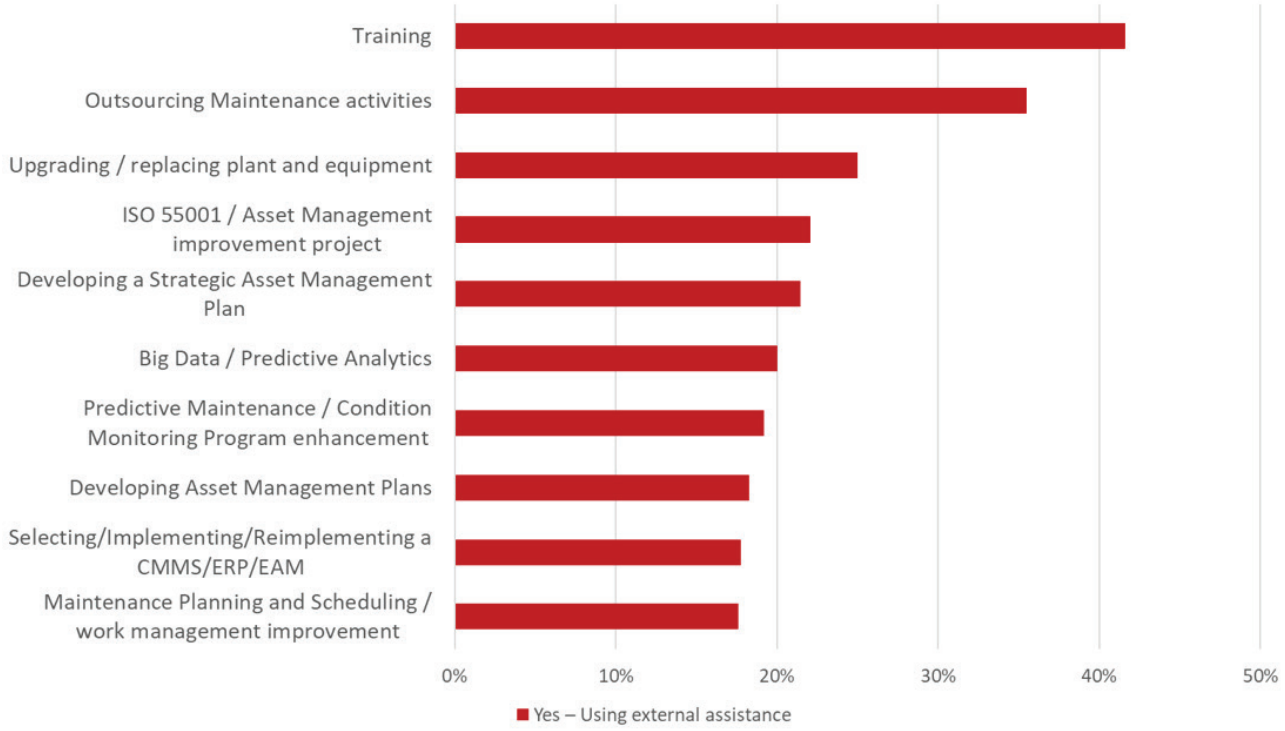
- Maintenance Outsourcing
- ISO 55001 / Asset Management improvement projects
- Big Data / Predictive Analytics
- Selecting/Implementing/Reimplementing CMMS software
- Maintenance Planning and Scheduling projects.

The improvement initiatives that tended to be driven mostly using internal resources included:

- Maintenance Planning and Scheduling projects
- Asset Management Strategy and Planning
- Preventive Maintenance program review / RCM / PMO
- Staff Recruitment
- Equipment Replacement

Most of these internally-driven initiatives should come as no surprise – but the presence of Preventive Maintenance program review / RCM / PMO and Risk Based Inspection on this list may come as something of a surprise to consultants that offer these services. Similarly, nearly 80% of respondents working on Asset Management Strategies and Plans are running these projects internally. It is perhaps an indication that industry has become reasonably mature in terms of its understanding of these areas and their capability to deliver programs in this area.

Training continues to be the area that external support is most likely engaged.



// Fig 3. 2019 Top 10 Initiatives being addressed by external assistance

2019 TRENDS

The previous section discussed the results of the survey overall. In this section of the report we will compare the results of the 2019 survey with those of our previous surveys from 2016 to 2018.

Business Challenges

We changed the wording of this section between 2016 and 2017, adding three items to the list of challenges – "Making use of big data", "Implementing/making use of Asset Performance Management software" and "Implementing/making use of Predictive Analytics tools" as these seemed topical at the time. This year we added another item "Facing significant equipment replacement decisions" as this also seemed topical given some of the initiatives that made the Top 10 in 2018. Interestingly, none of these supposedly topical issues made the Top 10 in 2018 or 2019.

From Figure 4 below, it can be seen that there is, in general, little change in the relative rankings of each of the business challenges from year to year particularly over the last three years. Significant movements in the top 10 were limited to the following:

- "Assuring maintenance work quality", which increased in importance from 15th in 2016 to 10th in 2018 and 8th in 2019.
- "Risk Management", which dropped out of the Top 10 for the first time since the survey commenced, climbing from 8th in 2016 to 2nd in 2018, and dropping to 11th in 2019.

The focus on work quality is consistent with the overall people theme coming through in this years results, with finding, attracting, motivating and keeping people filling four of the Top 10 spots, and initiatives including recruitment, training, and a focus on work management making up three of the top 10 improvement initiatives.



// Fig 4. Top Business Challenges – 2016 to 2019

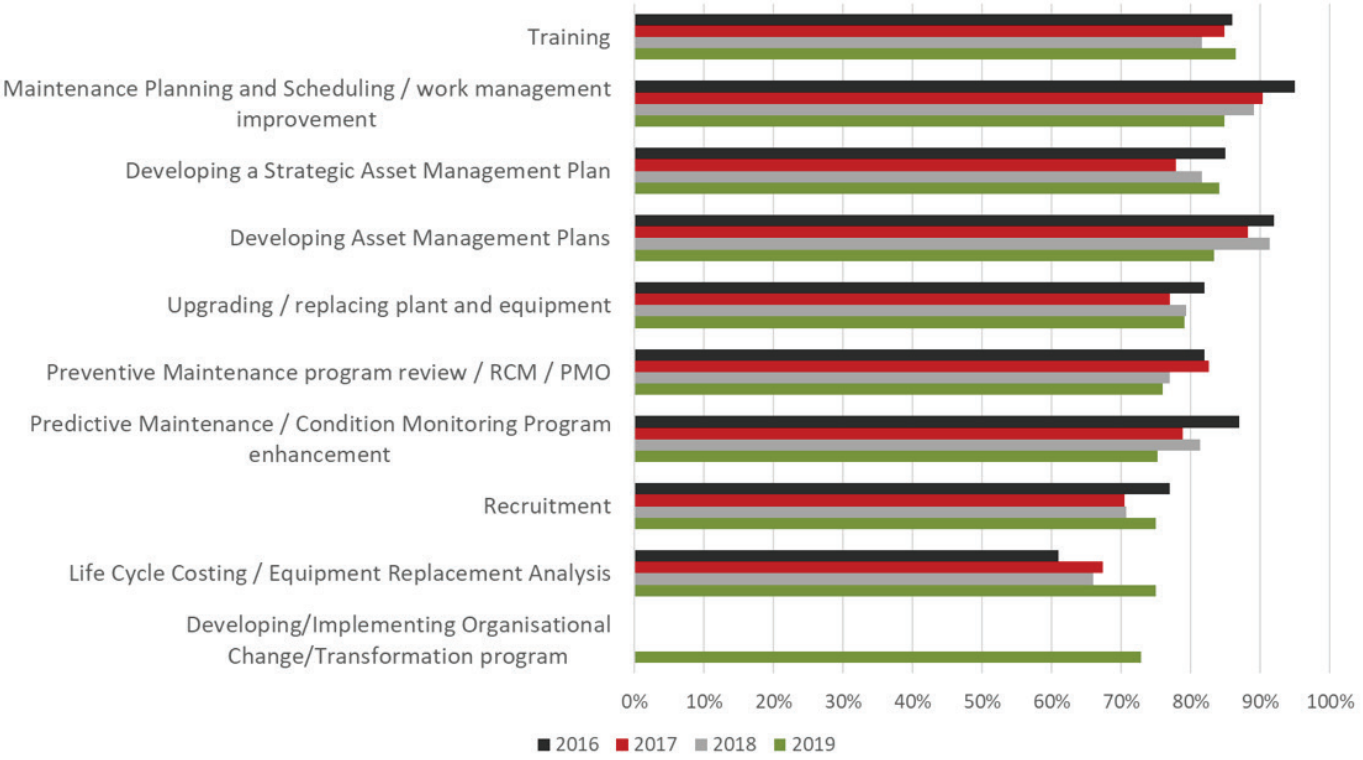
Asset Management and Maintenance Initiatives

Figure 5 illustrates the trends over the last four years in terms of the top 10 improvement initiatives.

From this it can be seen that training remains high on the improvement agenda, and is consistent with the people challenges noted above in the section on challenges. The focus on Asset Management strategy and plans continues to be a strong theme, and while the focus on maintenance planning and scheduling improvement has decreased, it still ranks as the second most common initiatives, emphasising that businesses continue to focus on the basics.

Eight of the top 10 initiatives in 2019 were also among the top 10 most popular initiatives in the 2018 survey – the only two to drop out of the top 10 were "Defect Elimination/Root Cause Analysis" and "Workforce Restructure/Role Redefinition", these were replaced by "Life Cycle Costing/Equipment Replacement Analysis" and "Developing/Implementing Organisational Change/ Transformation program" which was a new category in 2019, and may have been selected in preference to the more specific "Workforce Restructure" option.

> Asset Management strategy and plans continues to be a strong theme.



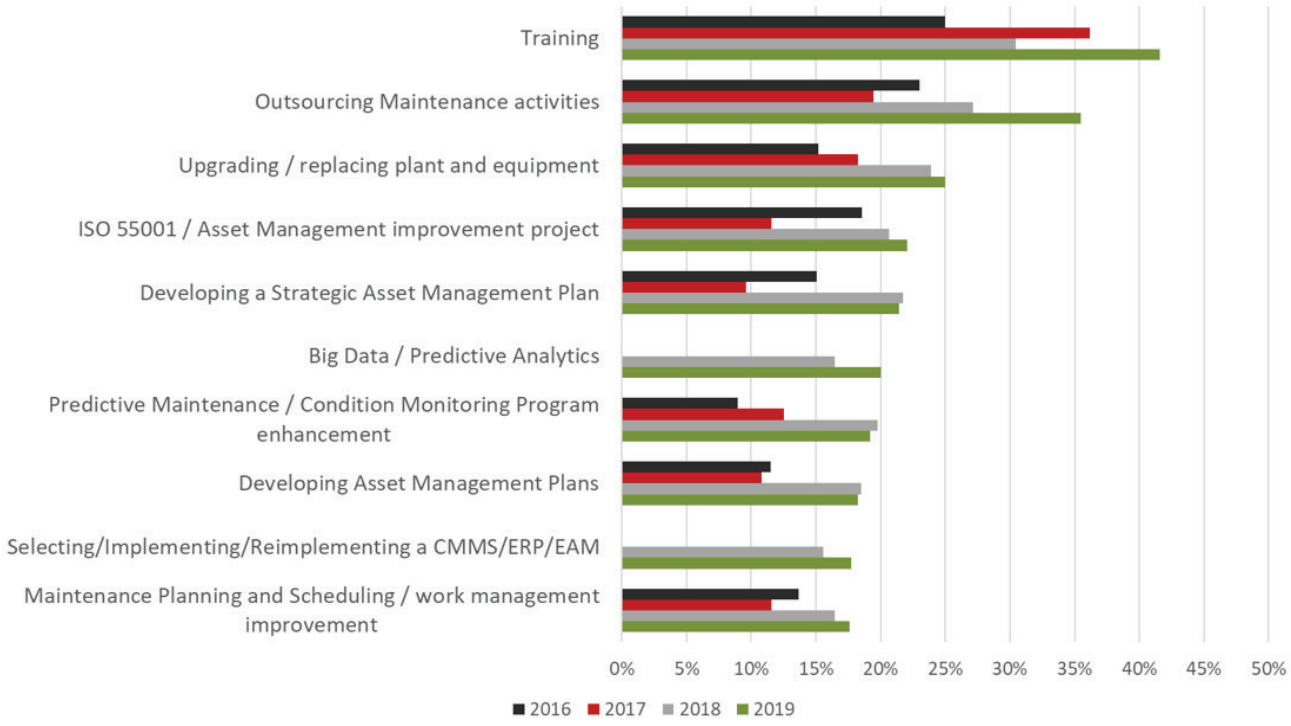
// Fig 5:. Top 10 Initiatives – 2016 to 2019

Improvement Initiatives Addressed Using External Assistance

Figure 6 illustrates the year-by-year trends in the use of external resources to assist with improvement initiatives. This year, around 15% of the initiatives reported are being resourced with external support, which is consistent with the 2018 result. Major changes this year include more reliance on external support for training which increased from 30% in 2018 to 42% in 2019, and maintenance outsourcing which increased from 27% to 35%.

The top 10 initiatives for which external assistance is used has remained comparatively static over the last three years, although the order of the top 10 varies quite significantly from year to year.

External support for training increased from 30% in 2018 to 42% in 2019.



// Fig 6. Top 10 Initiatives being addressed by external assistance – 2016 to 2019

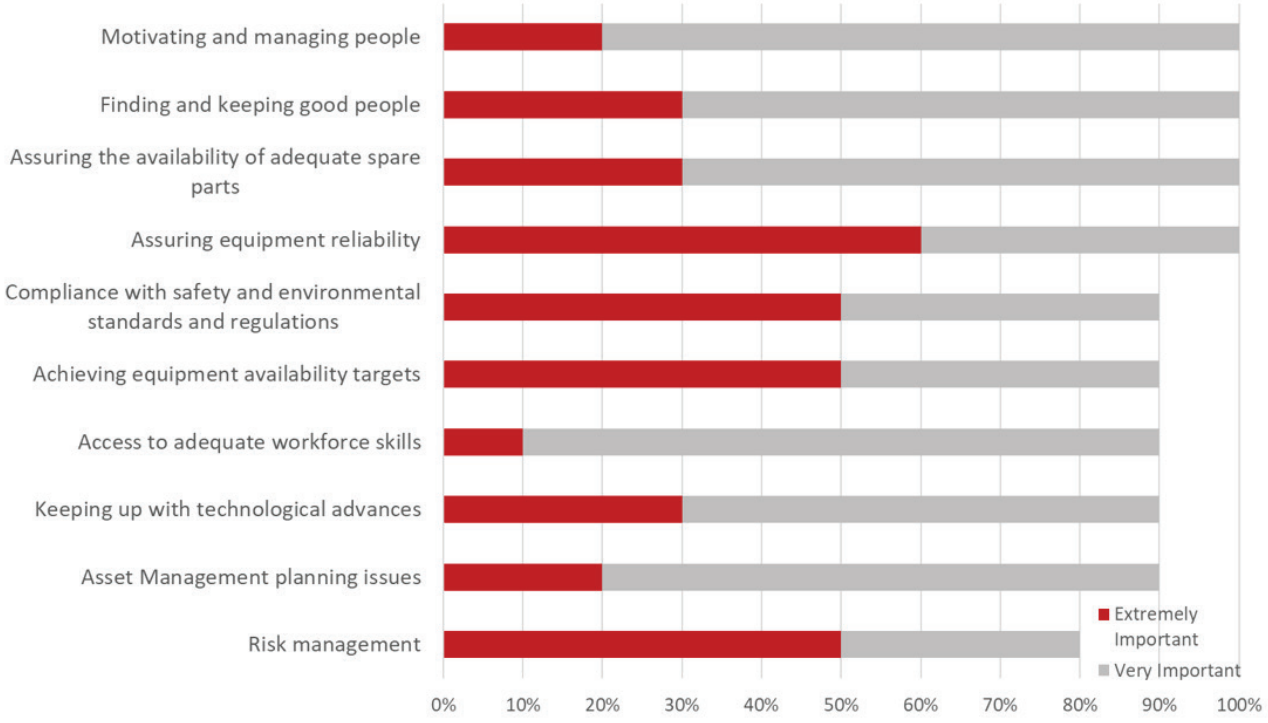
INDUSTRY SECTOR BREAKDOWNS

The previous sections discussed the results of the survey overall. In this section of the report we will examine the results for each of the top 4 industry sectors.

Mining

Survey responses from Mining indicate a strong focus on finding, keeping and motivating people; equipment performance, and interestingly assuring the availability of spare parts. Assuring equipment availability and reliability, and risk management and compliance featured highly amongst extremely important challenges.

Survey responses from Mining indicate a strong focus on finding, keeping and motivating people.

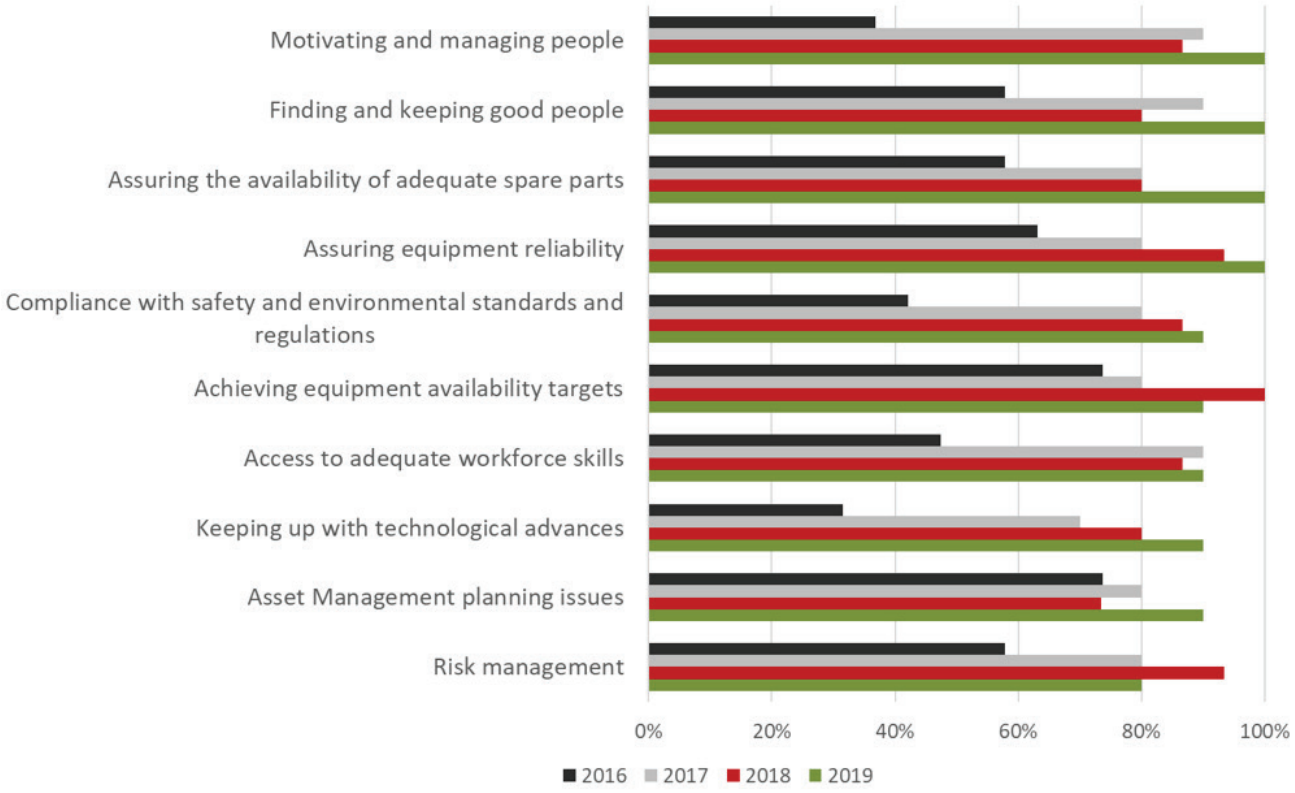


// Fig 7. Top Business Challenges for mining organisations



In comparison with previous years, there is a much greater focus on people issues in 2019 – this is undoubtedly a reflection of the upturn in the market for mineral commodities and labour scarcity. Interestingly, risk management dropped from the number one position, but is still in the top 10 and ranked similarly to previous years.

In comparison with previous years, there is a much greater focus on people issues in 2019.

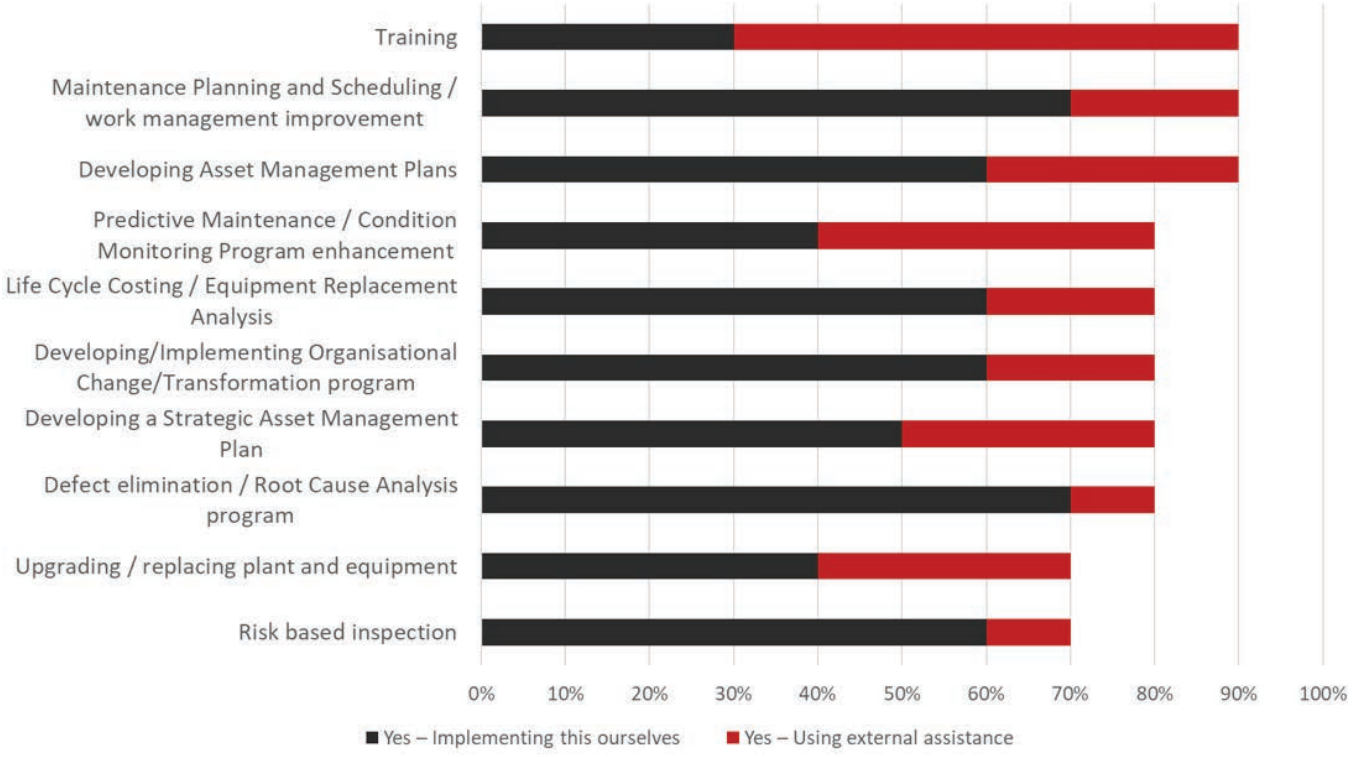


// Fig 8. Top business challenges for mining organisations – 2016 to 2019



The most popular improvement initiatives within mining include training, planning and scheduling improvement and development of asset management plans. This year "Preventative Maintenance Review/RCM and PMO" dropped out of the top 10, replaced by "Upgrading/replacing plant and equipment" which is perhaps reflective of the commodity cycle.

This year "Preventative Maintenance Review/RCM and PMO" dropped out of the top 10 replaced by "Upgrading/ replacing plant and equipment".

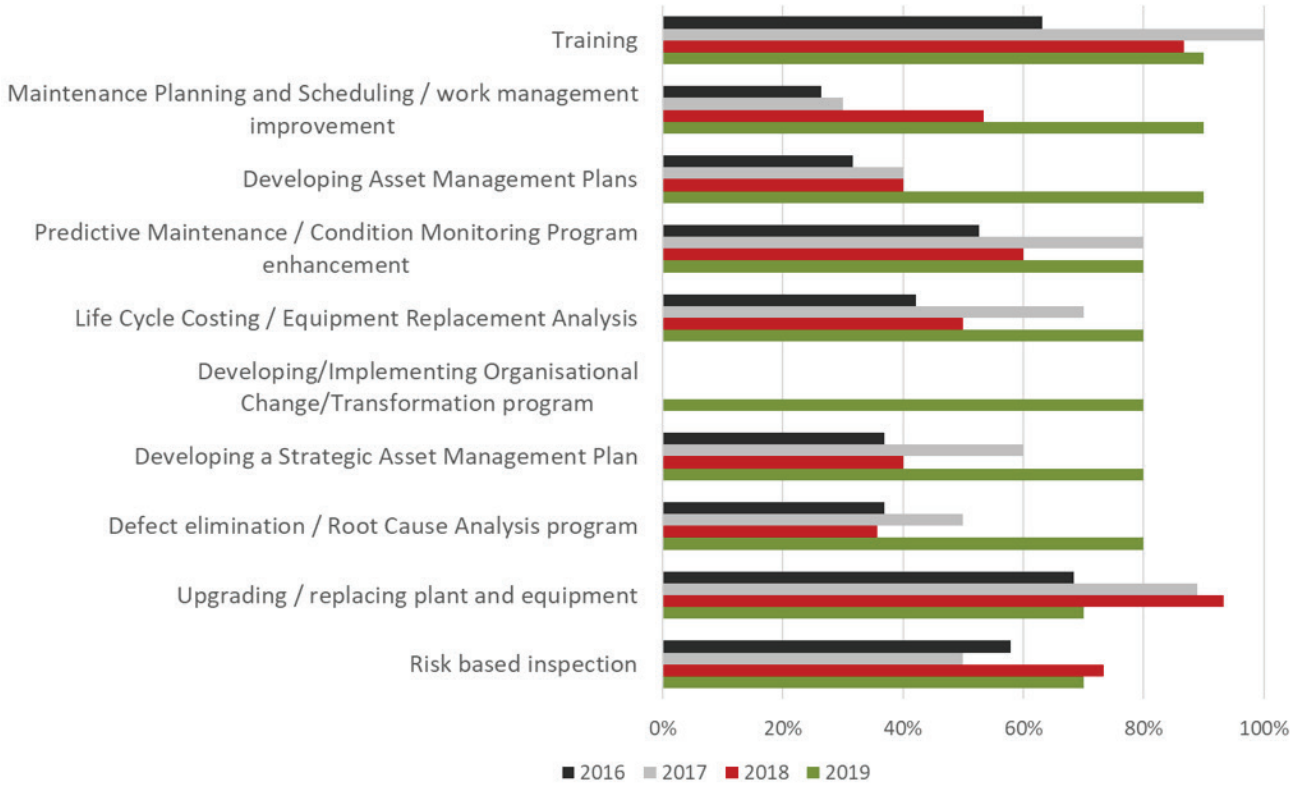


// Fig 9. Top maintenance and asset management initiatives for mining



In comparison with previous years, there has been a significant change of focus of the improvement initiatives in mining, with seven new entrants into the top 10. The change in emphasis can be seen in Figure 10. While the emphasis on issues including training and risk-based inspection remains relatively constant, there has been a sharp increasing in getting the basics right including maintenance planning and scheduling and defect elimination, and on asset planning including strategic planning, asset management plans and equipment replacement analysis.

There has been a significant change of focus in mining, with seven new entrants into the top 10.



// Fig 10. Top maintenance and asset management initiatives for mining organisations – 2016 to 2019

Manufacturing

The main challenges for the manufacturing sector were not significantly different from those for all recipients, although Asset Management and Maintenance Strategy issues are of far lower overall importance than the survey average. Interestingly though, development of Asset Management Strategies and Plans feature in the top 10 initiatives being undertaken in the industry.

Risk Management, which peaked as a challenge in 2018, is back down to its more usual position, while equipment availability and reliability challenges have increased, along with challenges relating to people including finding, keeping, and building capability.

Nearly 90% of respondents in the manufacturing sector reported to be running initiatives in training, planning and scheduling, and defect elimination. The biggest areas where external support is used appear to be training.

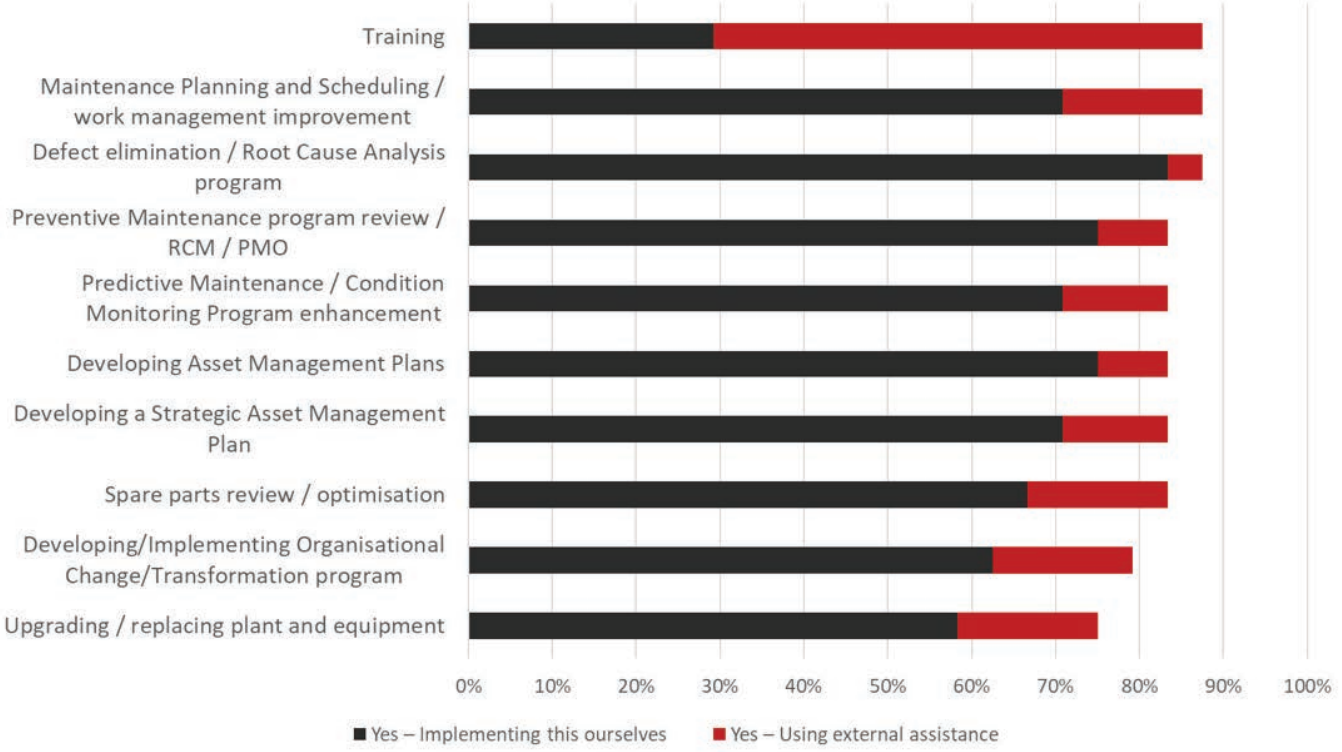
Equipment Reliability and Availability challenges are most important to the Manufacturing industry.



// Fig 11. Top business challenges for manufacturing organisations



// Fig 12. Top business challenges for manufacturing organisations – 2016 to 2019



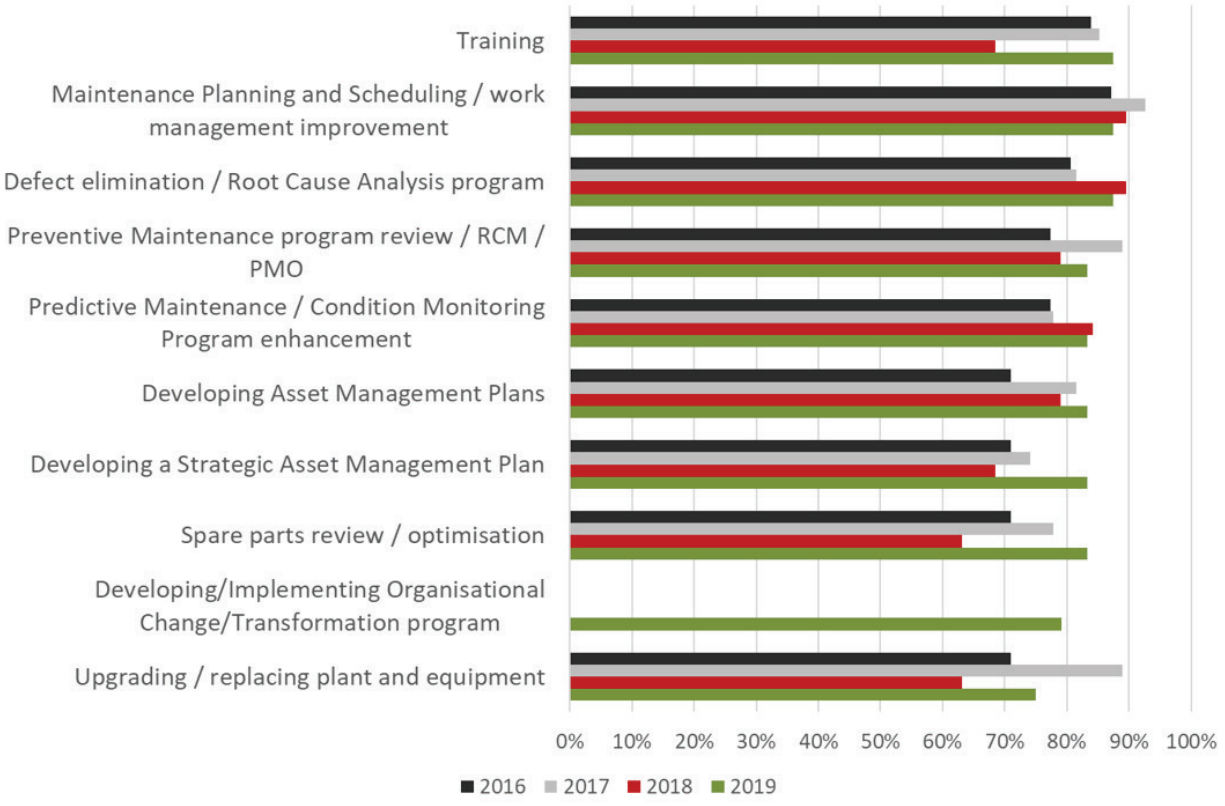
// Fig 13. Top maintenance and asset management initiatives for manufacturers

This year, training has re-assumed its more traditional ranking having seen a decline in focus in 2018. Maintenance Planning and Scheduling improvement has been an ongoing focus for the manufacturing industry. In comparison with last year's survey, there has been an increase in development of Asset Management strategies and plans, and a focus on spare parts optimisation. Organisational Change/Transformation programs also feature, although this category is new in 2019 and it is not clear whether this is a change in focus or simply a continuation.

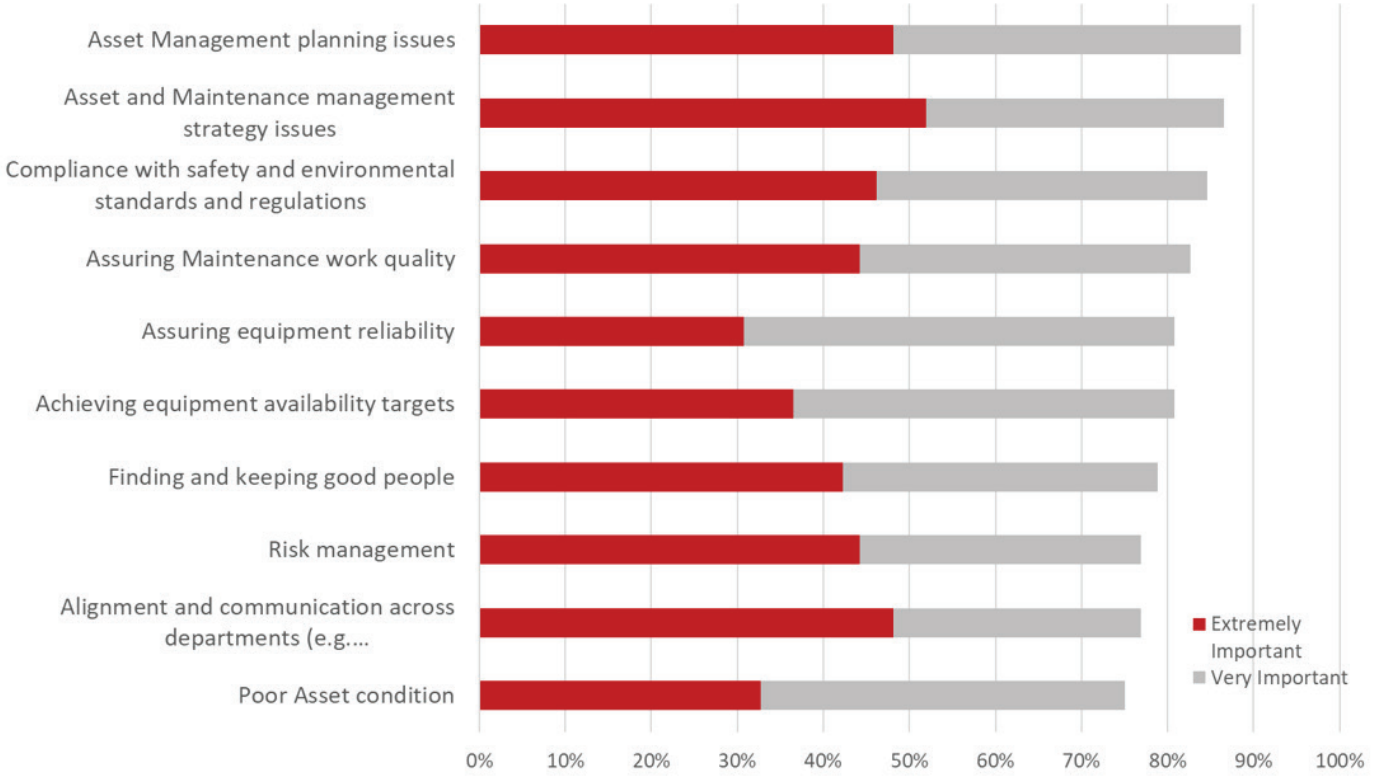
Services

Asset management strategy and planning, and compliance, were considered the top challenges for the services industry. These areas were more significant for this industry than for other industry sectors.

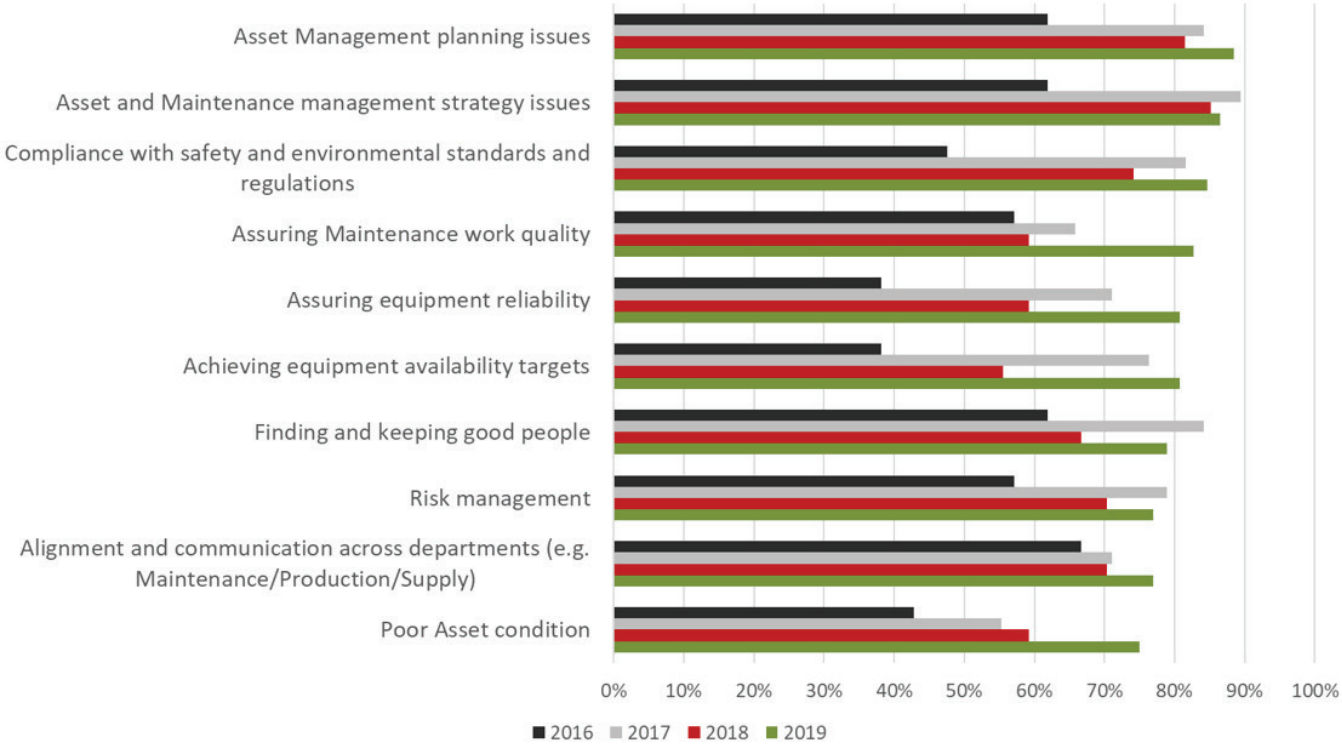
Asset Management Strategy and Planning, and Compliance, were the top challenges for the services industry.



// Fig 14. Top maintenance and asset management initiatives for manufacturers – 2016 to 2019



// Fig 15. Top business challenges for service organisations



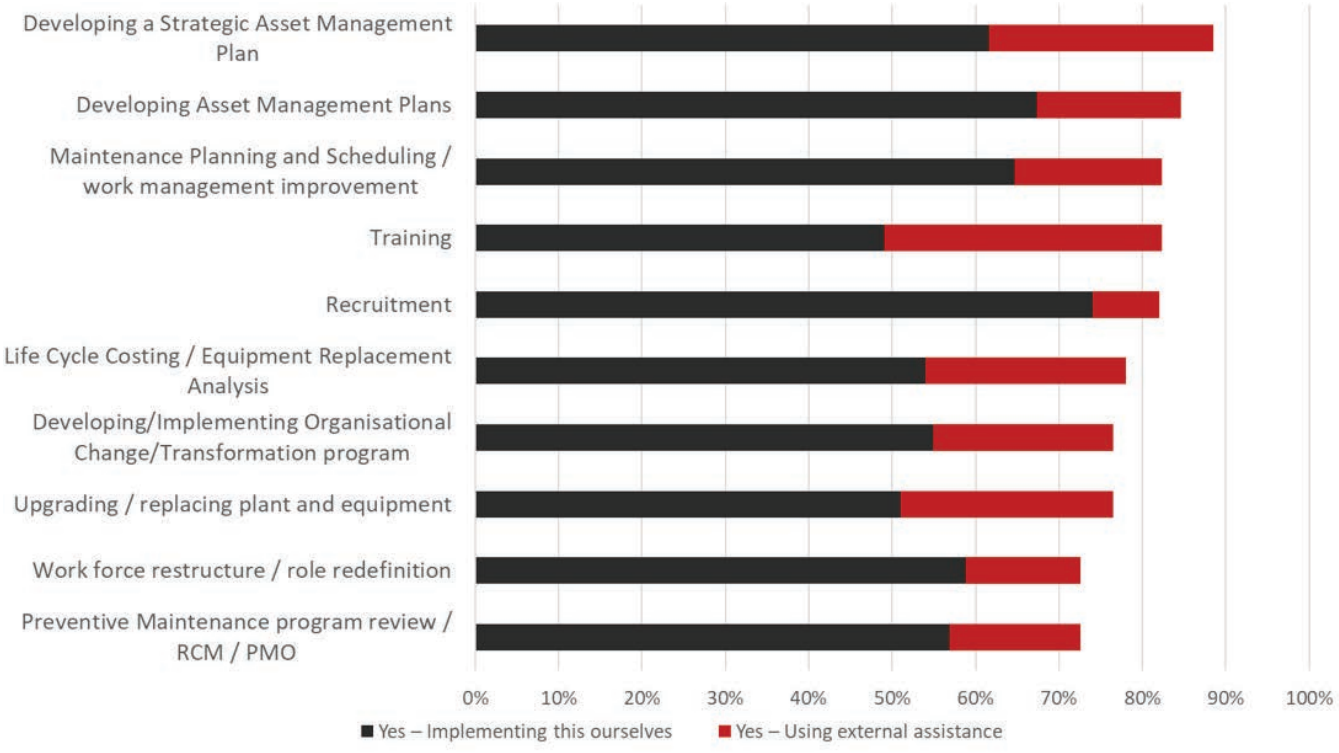
// Fig 16 . Top business challenges for service organisations 2016 to 2019



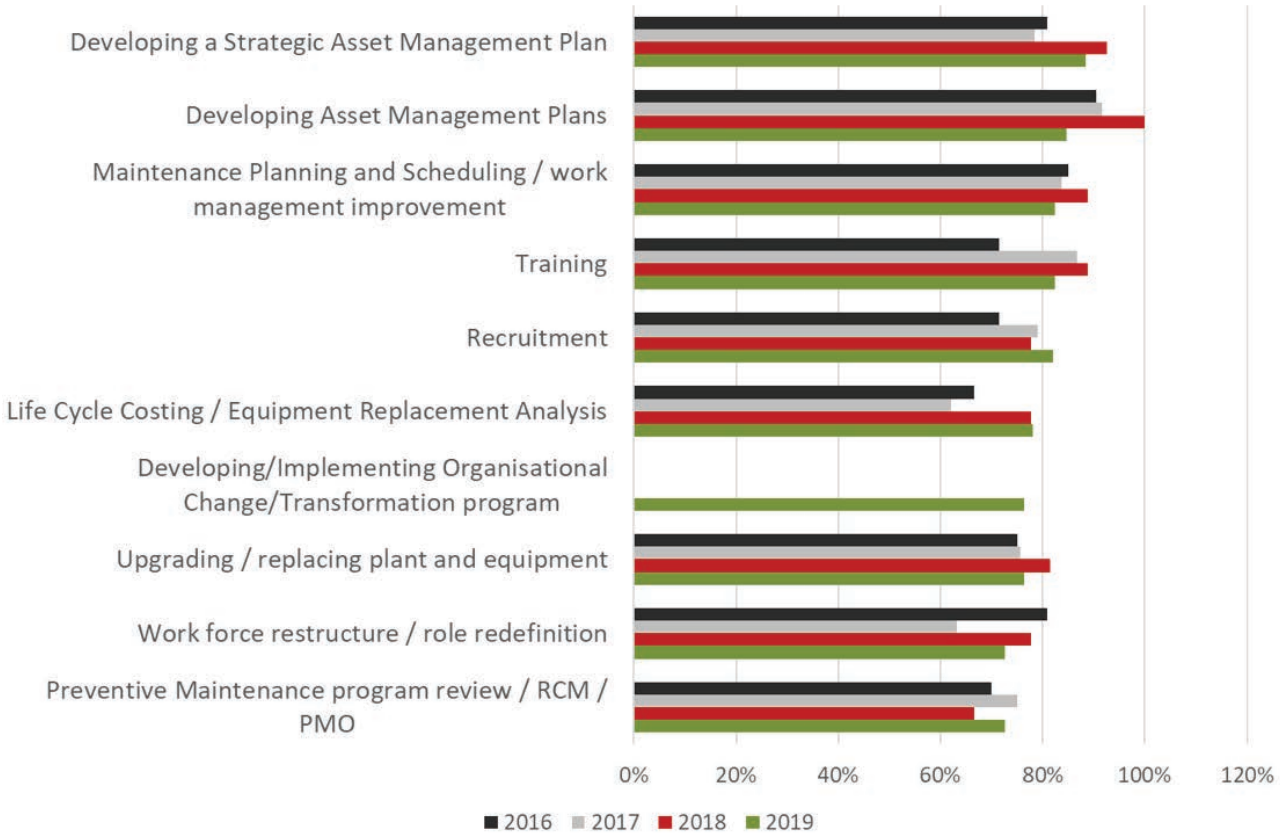
In Figure 17, the top initiatives for the services industry are reflective of these challenges with top initiatives including asset management planning, a focus on the basics including maintenance planning and scheduling and recruiting and training people.

Overall, Figure 18 shows the initiatives in place for the services sector are similar to those for previous years. As with other industries, Organisational Change/ Transformation programs feature in the top 10, although this category is new in 2019 and so it is not clear whether this is a change in focus or simply a continuation.

Organisational Change/ Transformation programs feature in the top 10, although this category is new in 2019.



// Fig 17. Top maintenance and asset management initiatives for service organisations



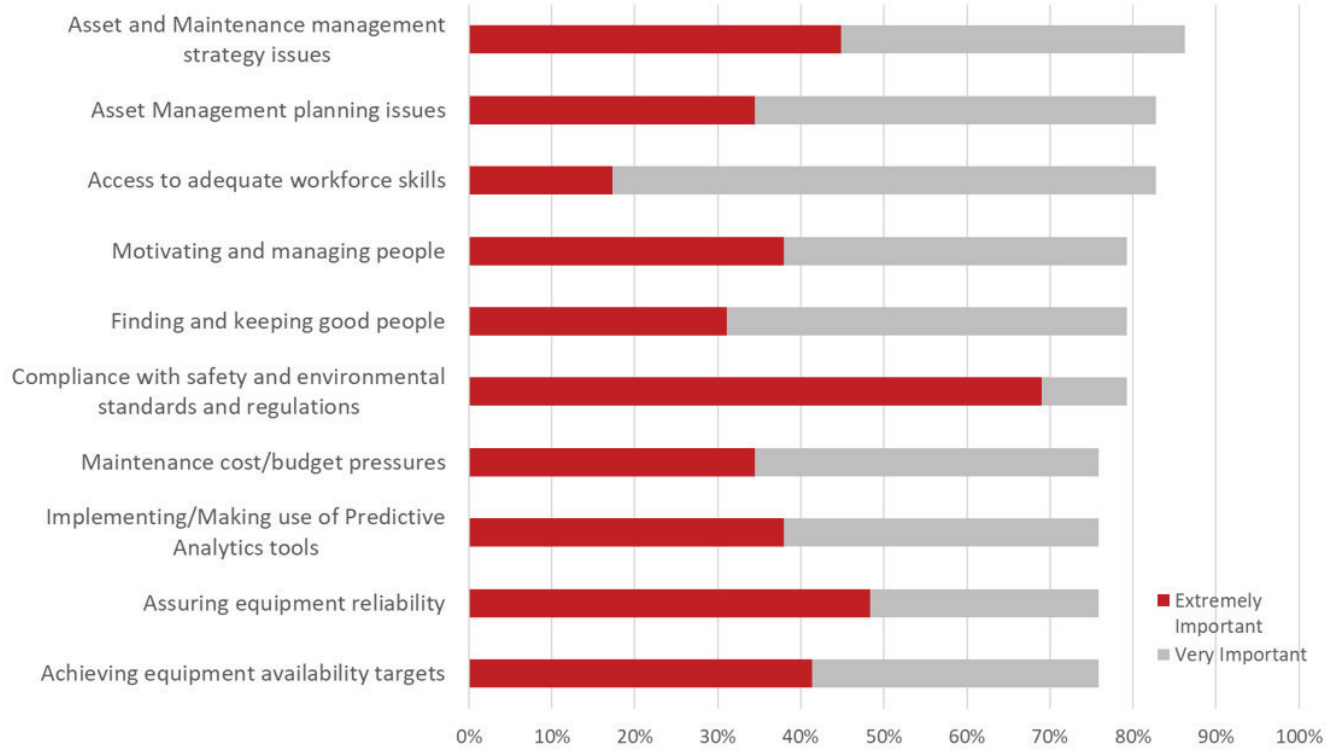
// Fig 18. Top maintenance and asset management initiatives for service organisations – 2016 to 2019

Utilities

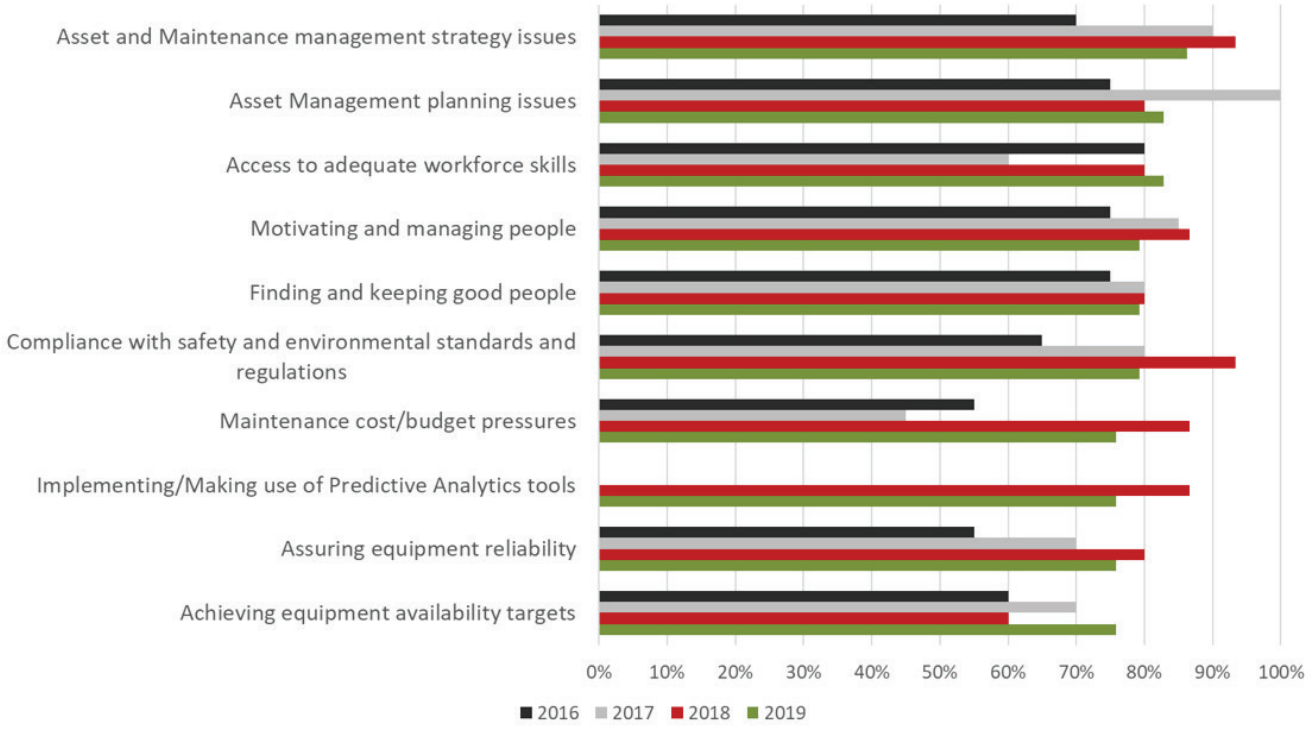
As is the case with the other industries, Asset Management strategies and plans are amongst the most pressing areas of concern for the Utilities sector. However, people issues, including accessing the right skills and finding, motivating and keeping people also seem to be pressing issues, as seen in Figure 19.

Asset Management Planning issues rank considerably lower in importance for this sector, perhaps indicating that they are already fairly mature in this area.

Asset Management Planning issues rank considerably lower in importance for the Utilities sector.



// Fig 19. Top business challenges for utilities

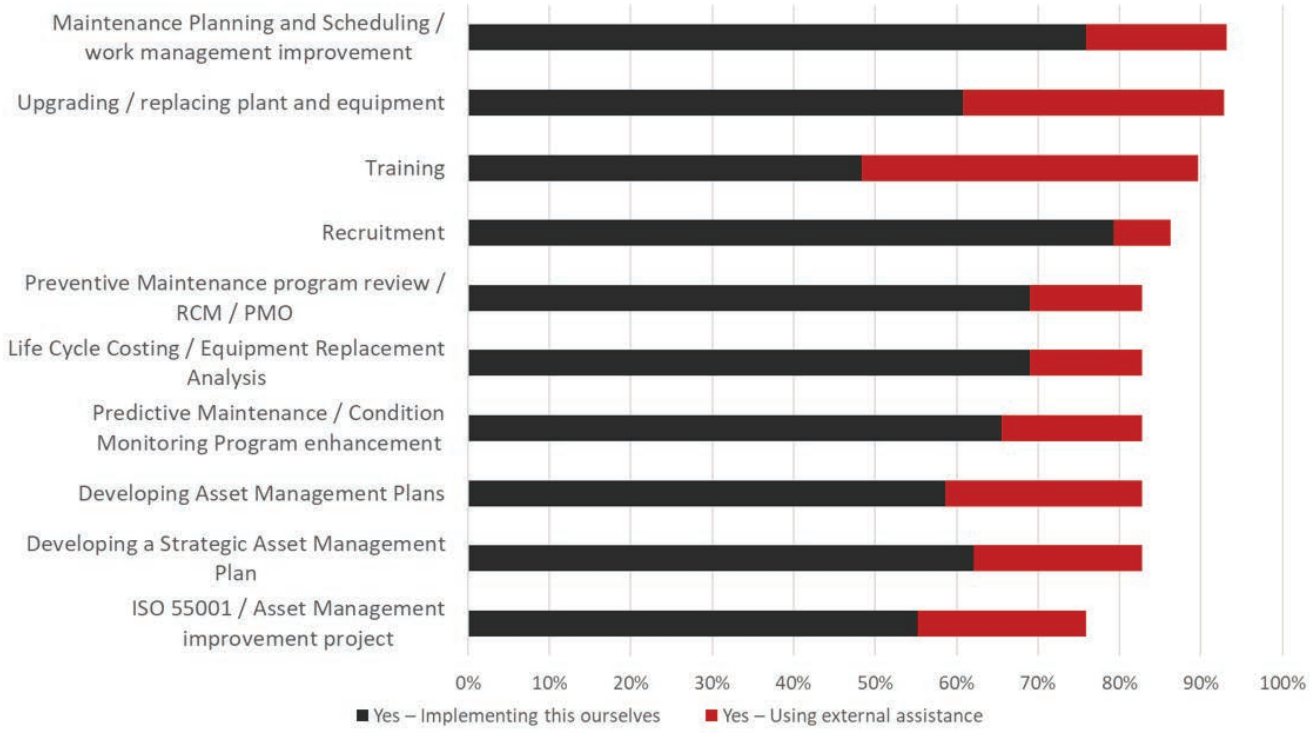


// Fig 20. Top business challenges for utilities – 2016 to 2019

Figure 20 shows that In comparison with earlier surveys, not a lot has changed in 2019. There has been a slight easing in budget and cost pressure, but an increasing focus on equipment availability as a driver.

Figure 21 shows that the main initiatives being undertaken by the Utilities sector are, in general, similar to those in other industries. However, upgrading and replacing plant and equipment ranks significantly higher for utilities that other industries, perhaps as a result of a focus on asset management planning over past years.

Upgrading and Replacing plant and equipment ranks significantly higher for Utilities that other industries.

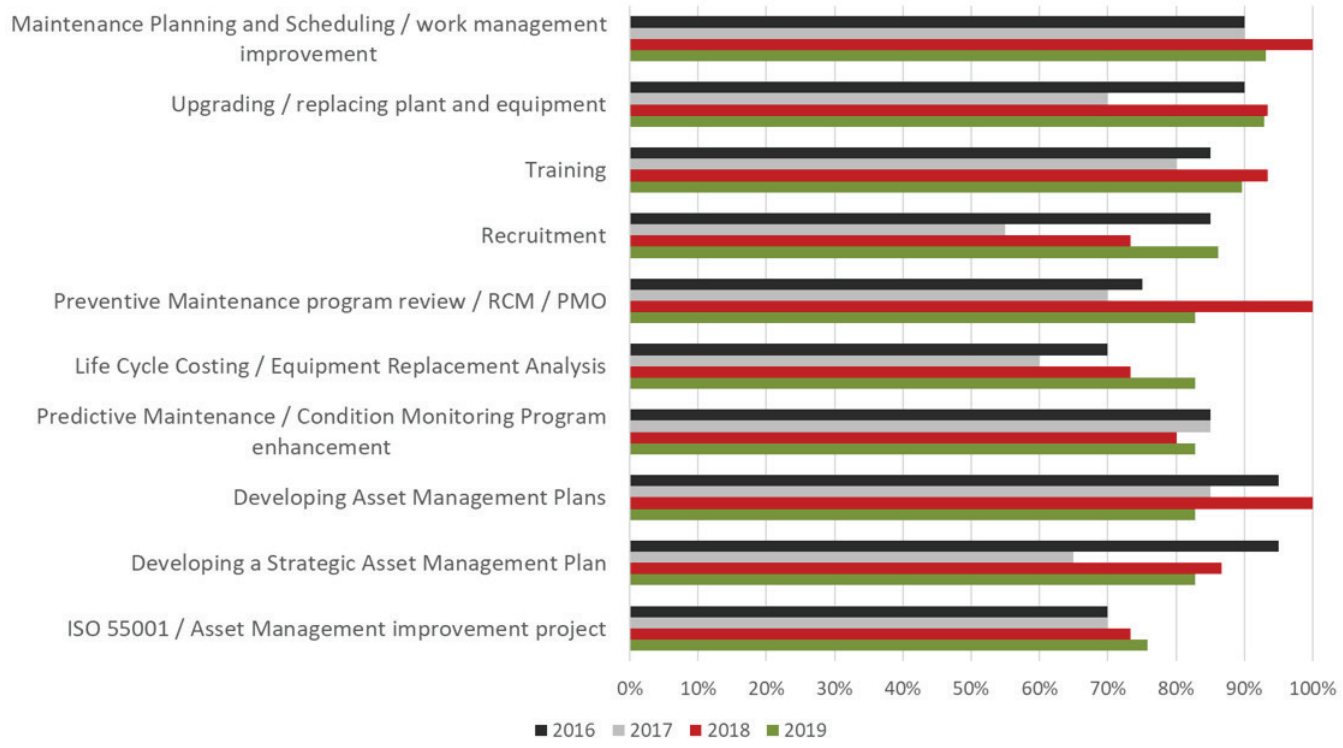


// Fig 21. Top maintenance and asset management initiatives for utilities



In comparison with previous years, there appears to be an increase in focus on life cycle costing and equipment replacement analysis – consistent with the challenge around the need to upgrade and replace equipment. Other initiatives, within the bounds of statistical variation, remain comparatively unchanged.

There is an increase in focus on life cycle costing and equipment replacement analysis, consistent with the challenge around upgrading and replacing equipment.



// Fig 22. Top maintenance and asset management initiatives for utilities – 2016 to 2019

GEOGRAPHICAL REGION BREAKDOWNS

In this section, we discuss the results for each of the three major geographical regions that were represented amongst respondents – Australia/New Zealand, North America and Europe.

Australia and New Zealand

The results for Australia and New Zealand show that people issues are of greatest concern in the region. Compared to other regions, Australia and New Zealand seem to be more challenged by budget and cost issues, but less challenged by equipment strategy and cost issues.

Compared to other regions, Australia and New Zealand seem to be more challenged by budget and cost issues.



// Fig 23. Top business challenges in Australia and New Zealand

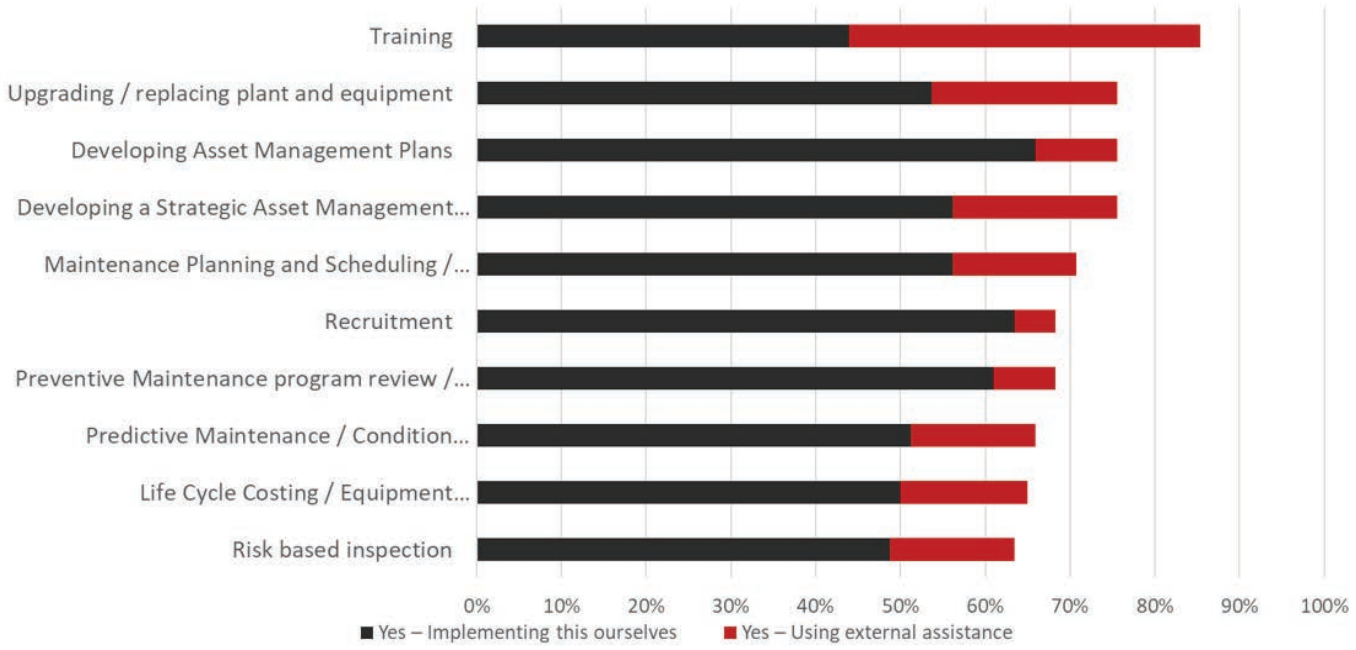
Given the dominance of people issues, it is not surprising that nearly 90% of businesses are undertaking or planning to undertake training initiatives. There is also a focus on asset replacement and development of Asset Management strategy and plans as shown in Figure 24.

North America

On balance, the challenges facing North America are the same as for Australia/New Zealand and Europe. However, North America places more emphasis on equipment reliability, and slightly less emphasis on issues relating to compliance. Unlike 2018, where people issues didn't really feature, North America now rates people challenges much higher and on a par with the other two regions.

Figure 26 indicates that the types of initiatives being most widely implemented in North America do not vary significantly from those being implemented elsewhere.

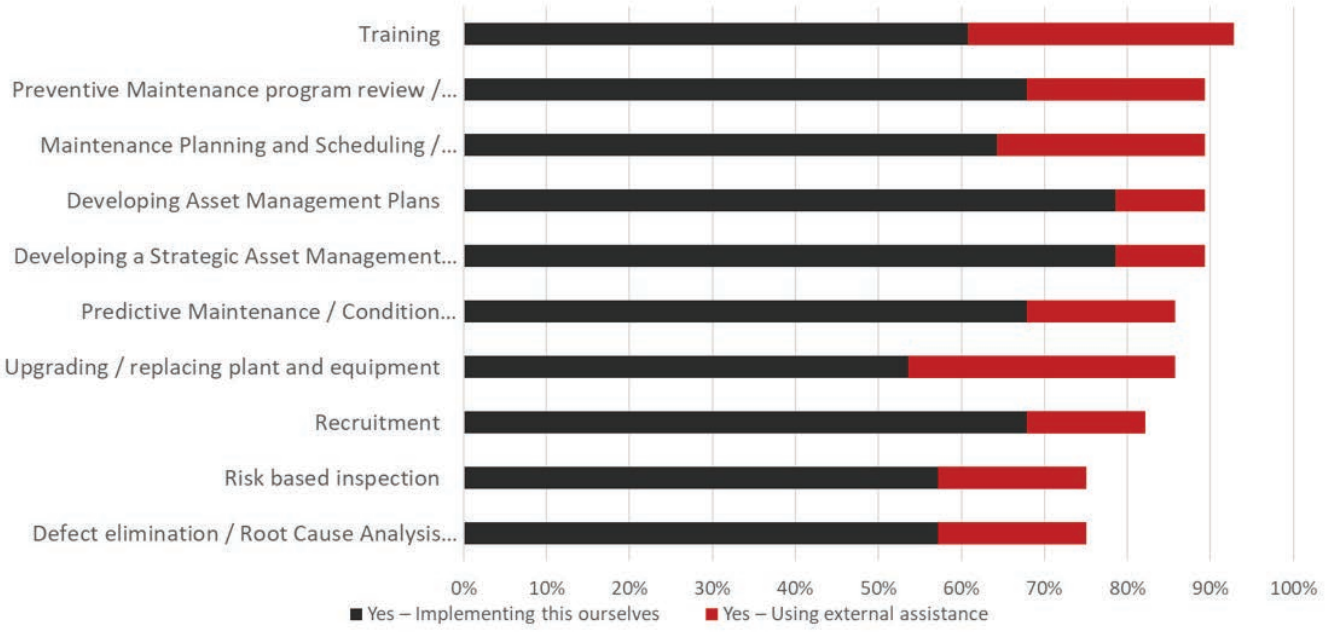
North America places more emphasis on equipment reliability, and slightly less emphasis on issues relating to compliance.



// Fig 24. Top maintenance and asset management initiatives in Australia and New Zealand



// Fig 25. Top business challenges in North America



// Fig 26. Top maintenance and asset management initiatives in North America

Europe

In Europe, compliance and risk challenges are being more acutely felt than elsewhere, with this being the third most important issue in this region.

Challenges associated with asset condition and equipment replacement, while well down the list, are substantially higher than for other regions, as shown in Figure 27.

In Europe, challenges associated with asset condition and equipment replacement are substantially higher than for other regions.

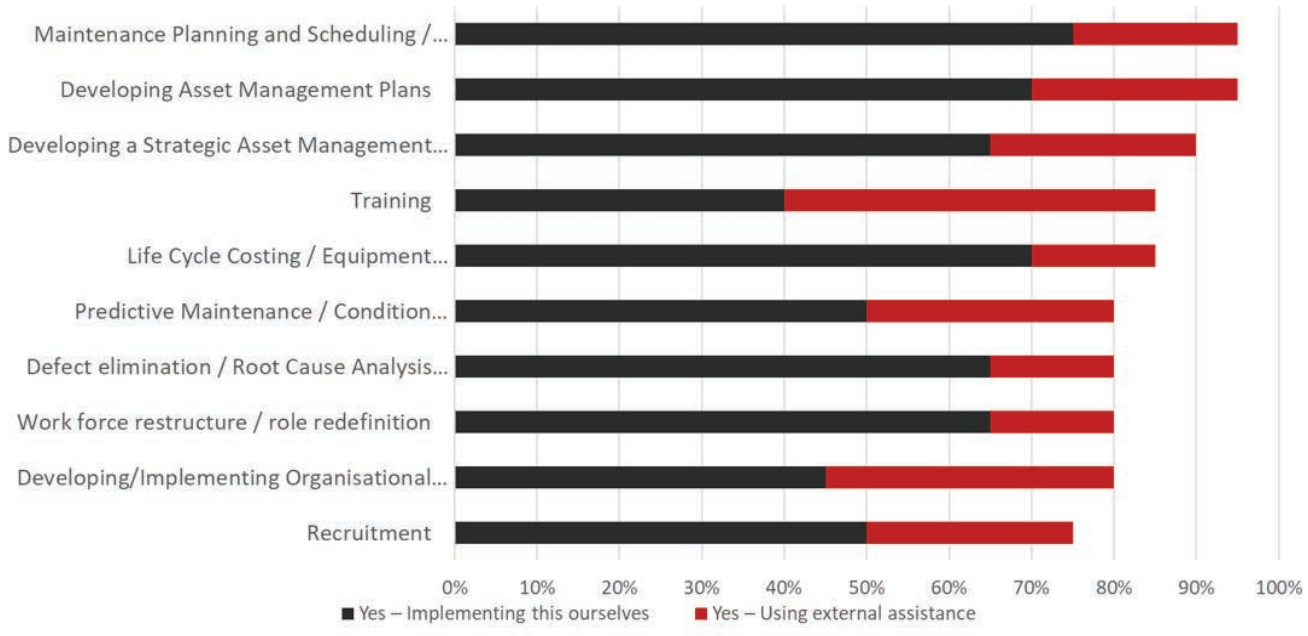


// Fig 27. Top business challenges in Europe

As with the other regions, planning and scheduling improvement features in the top 10 initiatives being pursued, followed closely by initiatives related to Asset Management Strategy and Plans, as shown in Figure 28.

Unlike the other regions, where training ranks as the number one initiative, it ranks number four for Europe, consistent with the lower ranking of access to workforce skills under challenges.

Unlike the other regions, where training ranks as the number one initiative, it ranks number four for Europe.

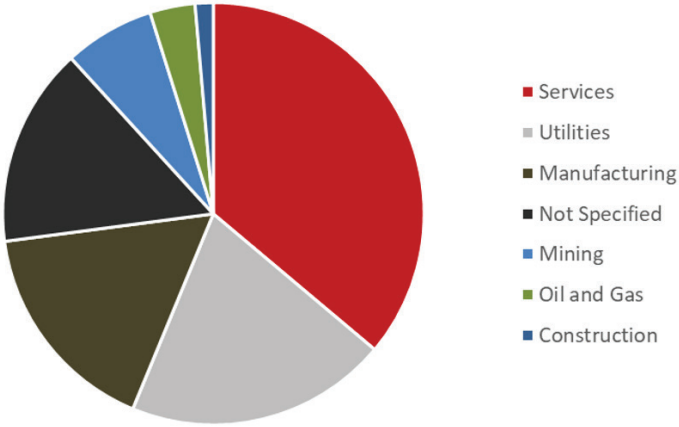


// Fig 28. Top maintenance and asset management initiatives in Europe

SAMPLE & METHODOLOGY

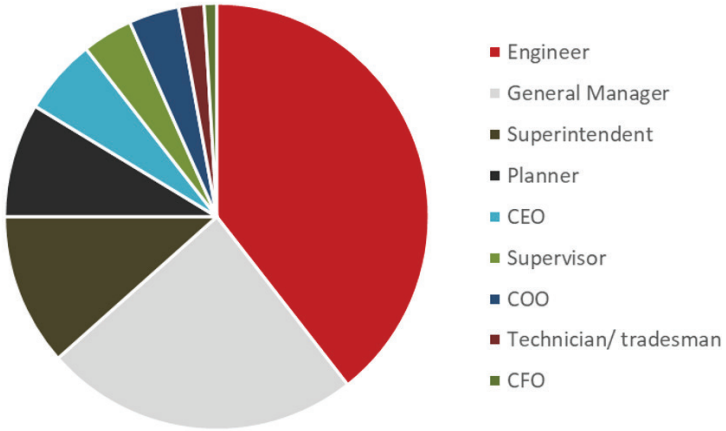
Our research gathered responses from 144 Maintenance and Asset Management professionals.

As shown in the chart below, we received responses from a diverse range of industry sectors, with services, utilities, manufacturing and mining well represented.



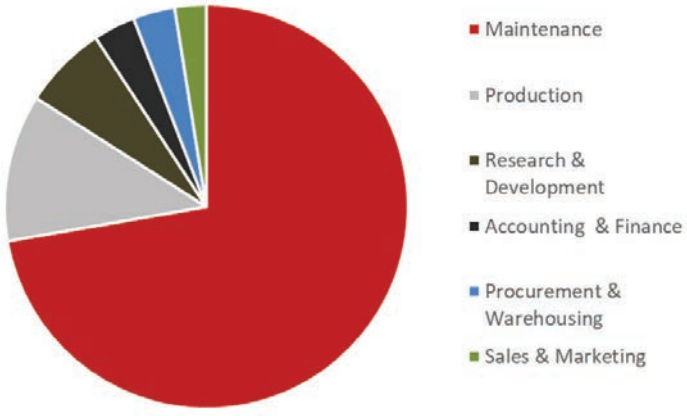
// Fig 29. Sample by Industry

Respondents answered an online survey. The distribution of job roles of survey respondents is shown in Figure 30 below.



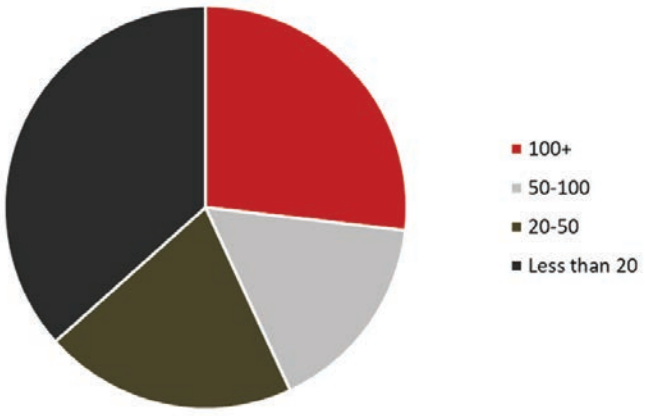
// Fig 30. Sample by Role of Respondents

In Figure 31, Engineers made up nearly 40% of respondents, followed by General Managers that made up the next 25%.



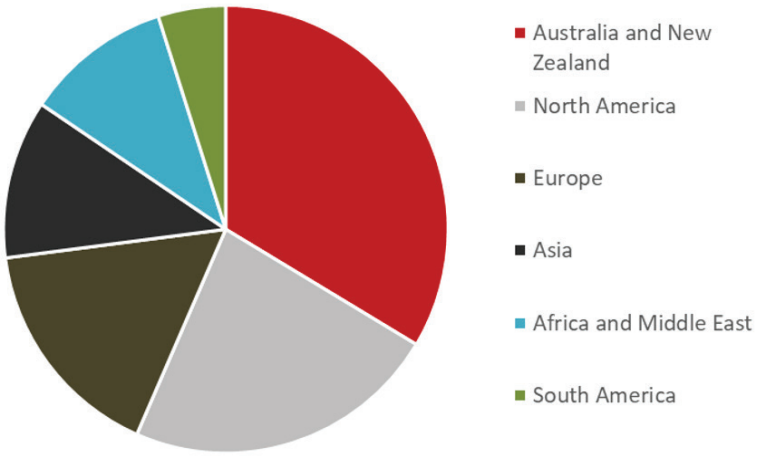
// Fig 31. Sample by department worked in

In Figure 32, the majority of respondents (72%) worked in Maintenance departments, with 12% from Production and 7% from Research and Development departments. We had responses from organisations of all sizes.



// Fig 32. Sample by no. in Maintenance Dept.

The majority of the respondents were from Australia and New Zealand representing 34% of all responses. However, there was a good international response, particularly from North America and Europe.



// Fig 33. Sample by country of organisation

People issues seem to be escalating with challenges relating to finding, keeping and motivating people.

CONCLUSION

Thank you to everyone who participated in the survey.

As was the case in the 2018 survey, the most significant business issues related to strategy and planning, and compliance and risk, although there are some differences between industries and geographic regions. People issues seem to be escalating with challenges relating to finding, keeping and motivating people, and accessing adequate workforce skills as key challenges. Equipment performance issues (reliability and availability) are also seen broadly as being among the most pressing issues faced.

Respondents are planning to implement a wide range of initiatives in 2019 with most focusing on the basics including training; maintenance planning and scheduling / work management improvement; and Asset Management strategy and planning initiatives.

Conspicuous by their absence from the top 10 for the third year running are challenges and initiatives relating to the 'hot' conference topics around big data, predictive analytics and asset performance management, although these are slowly creeping up the order being ranked 20th, 15th and 13th respectively – all up from 2018.

Most organisations are seeking to improve using internal resources, which may reflect commercial realities and a belief that organisations have adequate internal skills. The exception to this seems to be for training with organisations almost equally split between those intending to implement using internal resources and those looking to external support.



ABOUT US

Assetivity is an award winning Maintenance, Asset Management, Reliability consulting and training organisation, specialising in improving the performance and productivity of physical assets and people.

We offer practical, results-oriented training, advice and implementation assistance that combines high level strategic thinking with hands-on coaching and assistance. Our holistic approach combines sound engineering principles with business analysis and people management tools and techniques to generate tangible and sustainable organisational change. In addition, our specialist focus means that we are able to bring the highest quality people and skills to every assignment.

We have teams of full-time permanent Consultants located in Perth and Brisbane as well as an additional team of associates throughout Australia that we use to supplement the skills of our permanent staff.

We work throughout Australia and overseas with many blue-chip Australian and global organisations in the Mining and Mineral Processing, Oil & Gas, Utilities, Defence, Government, Facilities Management, Transport and Infrastructure sectors. Our clients include Rio Tinto, BHP, Transport for NSW, AGL, Barrick Gold, Newcrest Mining, Santos, Yarra Trams, CASG, RMIT University, Pioneer Energy, Water Corporation and Fremantle Ports.

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