

## Practical Paper

# Engaging field staff in strategic asset management

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### ABSTRACT

Adopting and implementing Strategic Asset Management (SAM) is a prerequisite to improving day-to-day management and long-term utility planning. Field-level employees play a key role in implementation of a SAM program and have to make often burdensome adjustments to their work processes to comply with newly instituted systems. They are not always consulted in planning and technology adoption. They frequently do not receive feedback or recognition for their contribution. Based on a water utility survey, the authors provide insights and recommendations on how to increase field staff commitment to SAM. They will utilize their results to conduct further research directly with field staff on their perceived role and what can be done to improve their adoption of SAM processes.

**Key words** | asset management, communication, field staff, utility management

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### INTRODUCTION

For water utilities worldwide, adopting and implementing Strategic Asset Management (SAM) is a prerequisite to improving day-to-day management and long-term planning. Effective implementation of SAM is substantially in the hands of the field staff working with the assets: water/wastewater treatment plant operators, construction teams, maintenance departments and inspectors. Yet, according to SAM experts, there is a need for strengthened two-way communication with field staff in planning and implementation of SAM program.

During an International Water Association (IWA) asset management workshop in Portugal (2014), members of IWA's SAM Specialist Group identified stronger internal communication as a crucial step in developing a successful SAM program which is often missing. This initial survey was designed to identify some of the key issues and to determine whether there is a need for further research and documentation on how to strengthen field staff engagement in SAM.

When adopting a SAM program, staff roles change, with more coordination and cooperation with other departments,

increased paperwork and ongoing maintenance requirements and sometimes changing roles within the utility. It is usually recognized that middle and senior managers need to be involved in the process of design and adopting a SAM program, for which they receive training. Often field staff – maintenance workers at water/wastewater treatment plants, leakage repair teams, among others – are not included in this process.

In a review of several asset management guides ([Asian Development Bank 2013](#); [AWWA 2015](#)), there is very little available about the role of field staff. A survey of 545 utilities by the American Water Works Association ([AWWA 2015](#)) reported that 51% of respondents answered in the affirmative to the question: 'Is asset management embraced by staff throughout the organization?' However, there was no in-depth questioning or verification of whether this was in fact the case, or just the view of whoever filled out the survey. Other guides describe steps needed in implementing a program. They focus only on staff training, not two-way communication.

## MATERIAL AND METHODS

The authors conducted in-depth interviews with three SAM specialists (Rita Ribeiro, Helena Alegre, Takayuki Sawai – personal interviews) to identify key steps, issues and areas of concern. They then developed a test survey, completed by three Japanese utilities and several staff from one UK utility. After initial analysis, the survey was uploaded to SurveyMonkey and shared via IWA Connect and other social media. An additional eight individuals from Japan, Portugal, UK, Australia, Germany and Norway completed the survey. In addition, one author (Cameron Raine) added in-depth information based on his experience as an asset management specialist.

Survey questions focused on which field staff play a role in SAM adoption, what changes for field staff in their day to day work, how new tasks were communicated and how staff responded.

The survey results were presented at the IWA Development Congress in 2017. At this event, SAM experts agreed the role of field staff needed to be strengthened. They also said it was extremely important in terms of utility communication because if the field staff are fully engaged and informed, then they will better represent field staff in dealing with customers.

## RESULTS AND DISCUSSION

Initial survey results indicate that field-level employees have to make often burdensome adjustments to their work processes in order to comply with newly instituted record-keeping systems. However, they are not always consulted in developing programs or technology adoption processes. They do not receive feedback or recognition for their contribution. They are seldom consulted in the stages of development or updating asset management plans.

### Questions and answers

#### Which field staff play a role in SAM adoption?

As expected, there is a large variety of people from across the utility sector that are responsible for playing a role

when adopting SAM. The most common role was those of both water and wastewater plant operators. They usually work on the same site so become familiar with the process and the asset needs. They are responsible for delivering an output and are usually under pressure to do so, due to customer service requirements. The operators are usually asked to raise concerns about where investment may be required to meet standards. They know the sites better than anyone else and therefore hold key information which should be utilised by those responsible for making investment decisions. Other staff involved are maintenance workers, individuals working on capital investment projects, construction teams and inspection and maintenance teams. One utility surveyed has a wide range of staff involved, with over 10 working groups, including operation and maintenance staff.

#### **When adopting a SAM program in your utility, what changed for field staff? Did they have more paperwork? What did they have to do to support more reliable SAM planning and management?**

There was a 50/50 split for this question. Four people gave answers that implied there was more paperwork to complete after SAM was introduced. They had to learn new methods of recording and take a more active role in updating the utility GIS database so it synchronizes well with utility operation and maintenance program. The documentation helps to keep an audit trail so historic problems can be compared. For example, if a specific piece of equipment is failing on a regular basis across the asset base, it would ensure this is recorded and an alternative make/model can be proposed to stop failures which may be increasing operational costs.

#### **Did they have to use more handheld devices, computer software and were there computer skills they needed to learn?**

All respondents said they needed to learn new skills, software and use of handheld devices. Handheld devices were used along with computer software to log problematic issues, additional job sheets, among others. There was a response which included a statement that the operatives did not believe it was their job to record this information and it was down to another department to be responsible

for doing so. It is possible that is a culture amongst employees who have been in the industry for a long period of time and have not been responsible for doing such tasks in the past. Perhaps due to workload, they think this is not adding value to their role and they have other tasks that are a priority. By the same token, it is possible that some utility engineers would feel the increased knowledge of field staff is somehow a threat to their higher level of education and expertise. This was not addressed in the survey, but is an issue for further exploration.

While increased data provide real-time information to managers, they do not always provide the knowledge and experience field staff have from their on-site experience. A question arises from this: does the increased reliance on data reduce the direct consultation with staff to learn from their experience, which can also be valuable in determining what is needed?

In order to practice efficient asset management, it is important to concentrate and utilize information on operation, maintenance, inspection, repair and renewal. For this purpose, information technology utilizing computers is indispensable. From the authors' experience, handhelds can support the staff in house that prepare the work and maintain the information, but they are not necessary. In most cases, staff are already using PDAs and had the skills to input data, but feel that 'it's not my job'. Mobile has become part of the business norm, but is still not fully adopted by all departments. Often new electrical devices are needed for full efficiency. Sometimes skilled use of MS Excel/Access or other customized application software is needed to input data.

### **Are field staff consulted? Are they trained?**

They are usually not consulted as programs are developed, although they do receive training 'tailored to their level of need and knowledge', according to one survey respondent. The training is usually technical training, not providing an overview of asset management or the key role of the information field staff provide. One utility holds regular courses for staff whenever there are updated versions of software and other technical needs. There is a constant process to evolve the program to make them more efficient and share this information with relevant staff. Another utility makes

sure that all staff understand the principles of SAM through training to each department, which then trains its entire staff.

### **Did they have to do more regular maintenance, instead of just repairing when things broke down?**

The majority of people surveyed claimed that nothing changed in maintenance schedules, but of course this will vary according to how much ongoing maintenance, especially preventive maintenance was being done before introduction of a SAM program. However, a proactive approach was not always taken which may be resulting in increased and unnecessary capital expenditure. It appeared that a reactive approach is often taken which leads to assets becoming neglected. One respondent said that there is not now more maintenance, but more targeted maintenance. It was better planned, but field staff tend to prefer dealing with breakdowns as they occur, not with planning ahead. The author's assessment from his personal experience is that there is the 'excitement' of dealing with breakdowns which is, in fact, more interesting than the day to day 'drudgery' of ongoing maintenance.

### **Did they have additional people telling them what to do?**

Most respondents claimed that operators did not have additional people advising them and telling them what to do. Often when new systems are implemented, extra guidance and advice is required to ensure the transition is smooth and effective. This would help the operatives to buy into the process and ensure they are comfortable with it, leading to them being more inclined to raise issues and carry out extra work where necessary. It is often a daunting experience for people when new processes are implemented, it is important that they feel supported and have the correct guidance where possible.

### **How did they respond and did they adopt the changes?**

From respondents, it appeared that field operatives did not particularly buy into the change and were reluctant to adapt their working practices. It is important that the field staff see the outcomes of their work to help them respond

in a positive manner. If they can see their ideas and suggestions being implemented, this will motivate them and ensure they have the knowledge that they are being listened to by senior members of staff.

Management involvement/motivation is a key factor. The main change is that more focus is on preparation of work and to develop staff for higher skills for more comprehensive issues. It is also important to explain what to do by using manuals and uniform entry sheets. Ongoing follow-up was key to ensure that there is not a lapse in implementing new procedures. This is a normal reaction when adopting new tools but it was a positive process, as there will always be some resistance to change. Although some people initially showed negative response to do additional assignments, they understood all they have to do and realized that new tasks were not as difficult as they expected.

One utility answered 'I don't know' to this question, which indicates that there has been no attempt to find out whether field staff are adjusting easily. Another said, 'After having the system about 10 years, there is a divide within field staff. Some people understand the system and how it works, and that if they do not log the issue on the system, it will never be addressed. Others still think that the issue with the asset can be addressed even though it is not in the SAM program. This is an issue that could be addressed by providing a bit more education on the program.' It is interesting to note that the younger generation is considered better able to adapt to new program, since they are not as set in their ways as older staff.

#### **Did you talk to them once the whole SAM program was established? Or did you talk to them while it was being designed?**

The majority of responses have hinted that the field staff were involved during the design and implementation process. This will have ensured their opinions were valued and they were taken into consideration. It is important to let those who will be using the system to give their opinion and to feel as though they have contributed to the design and evolution of the adopted SAM program and procedures. Some respondents said they involved staff in the change process, allowing for suggestions, regular training and sharing of information down through the line process. In the initial stages, one utility

worked mainly with office staff, but also spoke to field staff once the system was designed and specific tasks developed. Also, a few experienced field staff were included in planning to identify key changes, training needs and tools needed.

#### **How did you communicate new tasks so the field staff carried out SAM successfully and understood how important their role is?**

Most utilities provided staff training for all levels so that employees had the best chance of successfully implementing a new process. This helps with the smooth transitional period and would help the field staff grow in confidence if they knew the support was available from their organization. This included the use of software tools for reporting and monitoring, map reading, exchange of experience, and workflows. Some utilities focused training initially on office staff, others said they did not need much training, but focused more on why they were doing asset management. One company did not do training programs, but worked with staff in the field to improve their reporting. A few developed manuals specific to new systems and several did briefings at company and department level.

#### **Did you make any informational material which they could easily read and use?**

Most utilities provided general informational material and manuals on new tools. Analysis documentation would ensure the ability to track progression and help make any amendments to the process, if required. Visual representations make it easier to understand, so this would be recommended. The maintenance/inspection sheets ensure that jobs can be recorded and repetitive issues can be discovered. This allows programs of work to be created which concentrate on similar types of work, grouping such jobs together can help gain efficiencies and reduce capital investment. Useful information that may benefit employees is having the ability to see all of the capital jobs that are in the program and where they rank in terms of risk against other projects. Risk-based prioritization helps ensure the investment is being targeted in the correct locations. One company said verbal training, not more manuals, guides and materials, was the best approach. Materials developed for field staff were produced by the relevant

department, not by the SAM department. This ensured more relevance and usefulness for field staff.

In one utility, documents are provided for field staff to help guide them in the new way of working. This will help them grow in confidence in adopting new processes. This can be a daunting experience for everyone and it always helps if the process is documented so mistakes are not made and everyone is following the same process in an organized manner. This provides a consistent approach between teams.

**Do you return to field staff after a program is going well and tell them how and what they are doing is helping to manage things better? Do you see the results in better management?**

The majority of answers show the management teams have a good working relationship with the field staff. It is a positive decision that the field staff are told about the improvements they are influencing. As described above, this will lead them to take a more proactive approach and will encourage them to get involved with capital projects and express concerns or ideas as they see them. This is a culture shock to field staff as they have not historically been involved in such processes. Going forward, improving feedback mechanisms with field staff will lead to greater success in reaching company investment and management targets.

Only two utilities reported that staff received feedback on how their work is helping to prioritize investment. However, for one that reported this, others from the same utility said there was little feedback. This is a need to strengthen field staff knowledge, to identify any implementation issues and to give recognition to employees, strengthening their commitment. One utility shared evaluation indicators for SAM programs with staff at all levels. Certainly, if field staff can see investment into an asset they are responsible for, they are more likely to report maintenance issues. They feel satisfied that the employer is taking their findings into account and providing the necessary resources to solve the issue.

### Recommendations

As a result of this survey, some general recommendations can be made about engaging field staff in adopting SAM programs and are given below.

- Engage all employees on the principles and purpose of SAM: This helps to gain a consistent approach to the asset-management process and helps ensure that all employees are aligned.
- Train the management with a focus on analysis, evaluation and defining targets: Setting targets helps to work towards the desired goals and maximise outputs throughout. Analysis and evaluation helps to look for improvements which will lead to an improved process.
- Establish working groups and process councils: Having a designated group of people looking after the process will ensure ideas are shared throughout the utility. A good approach is having one representative from each department and staff from different levels, including, of course, field staff. Departmental representation means better two-way communication to address all needs. This helps to resolve issues and improve the system where necessary.
- Support field activity inspections, working one on one and provided capital project feedback: Job satisfaction for the field staff as feedback lets them know the impact they have had on the project due to their experience and recommendations.
- Establish clear processes to show the starting point, then introduce opportunities for improvement: The evolution of the process is of the utmost importance. The finished product will not be perfect and will require further improvements which will eventually lead to a stronger strategy and better decision making.
- Engage field staff throughout the process: Get their involvement and receive their feedback regarding the tools that they need to use. Their feedback to the designers will help to improve the efficiency and accuracy of information collected.
- Match the performance evaluation with staff work on SAM: This helps the operatives understand the positive things about their work. It may also make them think about improvements they need to make to increase their performance. Talking about it and looking at their involvement will help them to understand the process and the role they play.
- Send some planning division staff to various fields and sent some field staff to planning division: This principle is carried out in other utility processes and can be very

successful also with SAM program. It ensures that everyone knows what their colleague's role is in the process and the difficulties they may face. This helps broaden knowledge and personally develop if they are involved in a role they would not usually be. Field staff are often looked down on by others and this will help with morale and deliver many other lasting benefits.

If necessary, review the organizational structure, work system and work flow on site. Changing the structure of the organisation is a big decision to make. Thoughts are to implement the SAM process and to improve that via small changes before looking at the bigger picture.

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## CONCLUSIONS

The experience of the utilities and colleagues working in SAM shows that there can be an improvement in the engagement of field staff in all stages of SAM planning, adoption and implementation. The specific recommendations are noted above, and summarized below. The authors intend to continue their investigation on this topic through discussions with additional SAM specialists and more in-depth discussions with utility field staff.

Successful SAM cannot be achieved without field staff. Respect should be shown for knowledge built up over a long career and expertise in a specific area. Cheaper solutions may be reached that provide the same outcome. Field staff have often seen the same issue on numerous occasions and their expertise needs to be utilised.

Engage field staff in the planning stages of SAM, including when looking at new technologies for reporting. Staff can often provide good feedback about whether a solution is viable or whether it would be beneficial to the process.

Share successes: make communication a two-way process so that field staff can see how the result of their

improved reporting helps to improve utility management. Better yet, give credit for their role – employee recognition is shown worldwide to count more than a higher salary for employee motivation. For example, in the UK, utilities provide a small incentive payment to an employee who makes a recommendation that is successfully implemented. This ensures employees are always looking at new methods.

Communication in terms that field staff can understand is key to ensuring staff know what is needed, when, how, why, and in giving feedback. Target communication materials directly to the field staff. Do not just provide big handbooks. Many people do not have the time or the interest to read in-depth documents. Also, in some countries, field staff are not highly literate, so would find detailed handbooks difficult to use.

Document the process and conduct further research on field-staff engagement. Utilities themselves can build on this initial survey by conducting interviews with field staff on their roles, responsibilities and levels of engagement with SAM planning, implementation and evaluation.

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First received 5 March 2018; accepted in revised form 6 July 2018. Available online 23 July 2018