

13 ways to turn people on

Past experience at Sasol Mining provides thirteen lessons on how to turn on the people energy to drive sustainable excellence in your internal operations.

by Marinda Swart and Johan Louw

Sustainable operations excellence is pursued by many businesses nowadays. Many of the famous success stories in industry can be linked to internal drives to improve operational processes, for example those of General Electric and Toyota. Moreover, sustainable operations excellence is increasingly seen as the blueprint for maintaining competitive advantage. And the recent global economic downturn has accentuated the dangers of non-sustainable business practices.

Competing in the commodity market is especially tough because there is not much scope for difference in the way competitors can strategically position high-volume, low-cost commodity products. The ability of a commodity business to differentiate itself, and build competitive advantage, often lies in the capacity to perform similar activities better than competitors do.

Since 1998 Sasol Mining, which operates in a commodity-type market, has introduced several

initiatives to improve its operational processes and models, culminating in its more recent and ongoing drive for operations excellence.

To capture the essential lessons from past experience within Sasol Mining – provided by its own successes and failures – an MBA research project was conducted at the University of Stellenbosch Business School (USB). It took the form of a case study, and the main aim was to develop a better insight into the factors that could give

THE JOURNEY OF IMPROVEMENT AT SASOL MINING – 1998 to 2008

- The first improvement programme, known as the *Renewal* project, was launched in 1998. Ambitious improvement goals were set in the areas of quality, cost, delivery productivity, safety and morale. After targets had been set by executive management, they were contracted with each unit leader in the business – typically the shift bosses and foremen of production and maintenance sections underground. All units had to come up with their own plans on how to close performance gaps and reach the set targets. A rigorous tracking system and a reward scheme for achieving certain performance milestones were implemented.

The results of this project silenced many critics at the time. Operating profit increased dramatically, productivity rose, cost increases were contained below the PPI, and employee morale improved.

- During the *Renewal* project, it was recognised that maintenance practices in Sasol Mining would also need improvement in order to decrease equipment downtime. This led to the implementation of the *Vuselela* project in 2002. Again, challenging targets were given to maintenance and production teams. Full-time trackers were put in place to track action plans and improvement results.

The results of the *Vuselela* project were positive. Equipment downtime decreased more than 50%, operating profit continued to rise and costs were contained below PPI. Although productivity improved, it did not come close to the improvement targets set, and declined again after an initial upward response.

- In 2005, *Project 2010* started. This initiative was motivated further by changes in the business environment such as the introduction of the Mining Charter and the prospect of lower future sales volumes for Sasol Mining. *Project 2010* had six focus areas, which covered Continuous Improvement (CI), Mining Charter compliance, safety and health, overhead cost optimisation, logistics, and the role of people.

Although this project produced some pertinent benefits in terms of operating profit, the productivity improvements could not be sustained. Various labour actions during this time further contributed to declining productivity. High demand for skilled labour in the mining industry worsened the situation as employee turnover started to rise, largely in the sought-after artisan and miner categories.

management teams an advance indication of the sustainability of an improvement initiative or of operations excellence as a whole. The outcomes of the research were consolidated into a single

Sustainable operations excellence is increasingly seen as the blueprint for maintaining competitive advantage

lead indicator model that was successfully tested and adopted for future use. This newly developed sustainability model covers three aspects: busi-

ness practices, improvement methodology and people.

Among the many messages that were extracted from the research, one was particularly strong, namely: it is easy to overlook the role of people in a company that is associated with world-class technology and engineering skills. This article reports specifically on the people-related aspect of this USB research.

Prospecting for improvement

In 1998, Sasol Mining found itself at the crossroads. Having shown declining operating profits for five years in a row, it faced the possibility that its operations could be outsourced to another mining house by the Sasol Group. Extensive investigations showed that the company was operating far below its productivity capacity. To energise its operations,

the company embarked on a major renewal project. This was the start of the improvement journey undertaken by Sasol Mining since 1998 which included two other initiatives before the current Operations Excellence initiative (see box on the **left**).

The results of the improvement journey from 1998 to 2008 speak for themselves. Sasol Mining turned around a declining business, barely making R250m profit in 1998, to a valuable cash generator in the Sasol Group, reporting R1.4b operating profit in 2008. Although there were mixed results from an improvement initiative point of view, the culture which was established in Sasol Mining during this time was one of continuous improvement, excellence and people involvement on all levels.

In 2006 the Sasol Group embarked on an operations excellence drive for all its operating companies. As part of the group-wide endeavour, an Operations Excellence Management System (OEMS) was developed to serve as a guideline to all businesses in the group. Sasol Mining introduced Operations Excellence (OE) as a continuous improvement programme by the end of 2008. OE was positioned as part of the strategic journey to double the company's business by 2020. The OEMS served as the governing framework for the OE implementation in Sasol Mining.

What did OE bring to Sasol Mining? How does it differ from *Renewal*, *Vuselela* and *CI*?

- A data management system (DMS) was installed on the continuous miner machines underground to collect real-time, accurate data from the machine regarding production time. The data were then analysed and reported per production section, per shift. This formed the foundation of the improvement process, reflecting real-time performance gaps.
- Each operation in Sasol Mining was reviewed according to the Sasol Group OEMS. Performance gaps and improvement opportunities were identified through this diagnostic exercise.
- The internationally accepted Lean Six Sigma (LSS) process improvement methodology was implemented on different levels in the business.
- Strong focus was placed on training and coaching. Management teams were coached on the use of the OEMS, full-time facilitators were trained in the Lean methodology, full-time black belt facilitators were trained in the Lean Six Sigma methodology, and all production teams were trained in the basics of the mining process (as measured by the DMS).



Although OE was still being rolled out at the various operations in Sasol Mining at the time of this study, preliminary improvement results for productivity and cost were very positive.

Back to the future

Given the history of improvement projects described above, Sasol Mining wanted to ensure that sustainability factors were built into the OE programme. Past lessons learnt from initiatives had to be formally captured and the OEMS had to be evaluated as a diagnostic tool to predict ongoing sustainability of operations excellence. These needs gave rise to the USB research. The research involved three steps: a series of comprehensive interviews with 13 people who had been deeply involved in the improvement projects over the preceding ten years (see box **at top**); a comparison of the OEMS as a diagnostic tool with the most

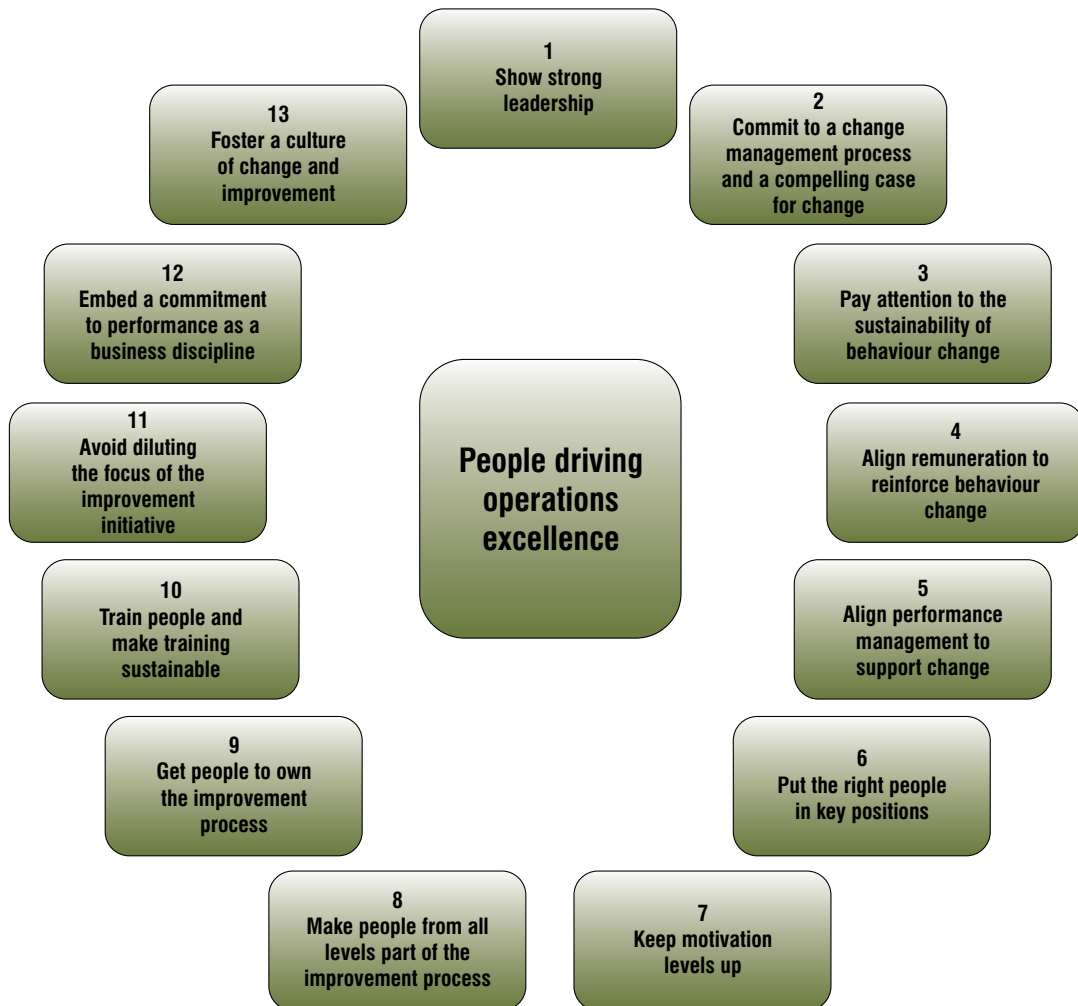
PROFILE OF SASOL MINING INTERVIEWEES

- The three managing directors of Sasol Mining since 1998
- Two general managers
- Three senior line managers (one mine manager and two shaft managers)
- The manager of operations improvement
- The manager of technical training
- An internal senior consultant
- Two LSS black belt trainees

current operations excellence literature; and the development and testing of a revised diagnostic framework.

How to generate the energy to sustain operations excellence

This article reports on the practical lessons learnt concerning the role that people play in sustaining a process of continuous process improvement. These lessons were then compared to and aligned with findings from literature in this field. The study came up with 13 people-management dimensions that proved to be influential in the past and that had to be added or strengthened in the OEMS diagnostic tool in use at that time. These dimensions can be translated into 13 guidelines that should direct an organisation when it launches a major improvement initiative (graphic **below**). Furthermore, they should be part of the ongoing process of monitoring and diagnosing in order to ensure sustainability of the improvement effort in the organisation. Each guideline is explained in more detail in the sections that follow.



1 Show strong leadership

Visible leadership emerged repeatedly from the study as a vital element in building a sustainable operations improvement programme. Executive commitment and leadership were sensed to be strong during the Renewal project and were key to its success. In particular, leadership language must be aligned to prevent confusing messages being sent through the company.

The current MD of Sasol Mining demonstrated practically the value of visible commitment to the OE programme. He invited individual shaft managers to do personal presentations to him on the OE performance of their shafts. Clear targets on problem areas were contracted between the MD and the shaft manager and a follow-up presentation on the delivery of the contracted improvements was held. This sent a clear message to all that success in OE was non-negotiable.

Many other case studies and practical examples support this guideline, which is arguably the cornerstone of a successful and sustainable operations improvement initiative.

2 Commit to a change management process backed by a compelling case for change

The process of change management must be strong, starting with a powerful case for change that is communicated upfront. At the start of Renewal, Sasol Mining had a particularly strong case for change which was communicated and understood down to the coalface. This created a strong pulling power for people to commit to the change initiative. In 2002 Sasol Mining achieved the Global Coal Company of the Year award. Although this was very positive from an operations excellence point of view, it created a specific challenge in terms of creating a compelling case for change during Vuselela and particularly CI, since it was natural for people to feel content. The economic crisis in 2008/2009 again presented a burning platform to the company to improve productivity, cut costs and increase operating profits. This was used with great success in the OE roll-out.

A proper change management process needs to be integrated into the implementation plan of an improvement initiative. During the OE roll-out, full-time change management agents were part of the roll-out team. Specific change management practices were implemented to help people through the typical 'valley of despair' period

after the roll-out, such as pre- and post-roll-out assessments, communication through various media, and celebration of early successes.

3 Pay attention to the sustainability of behaviour change

The successful establishment of new behaviours through the change management process of an improvement initiative gives an indication of the sustainability and long-term success of the overall initiative. Firstly, the required new behaviours need to be explicitly identified. People need to be coached in the new behaviours and leaders need to demonstrate these visibly. Ongoing monitoring of the new behaviours is a vital driver of sustainable improved behaviour. Sasol Mining utilises formal structures such as steering committees to monitor and govern changed behaviours.

4 Align remuneration to reinforce behaviour change

In the Renewal project, carefully designed remuneration incentives created a strong pull effect towards goal achievement. Similarly, the redesign and implementation of the production bonus system during the OE initiative created the energy and motivation of the workforce to utilise the OE improvement methodology to reach their improvement targets.

Carefully designed remuneration incentives created a strong pull effect towards goal achievement

It is critical to ensure that alignment is created between improvement targets and the recognition system. This will prevent dissonance among the workforce and ensure sustained energy and pull towards improvement targets.

5 Align performance management to support change

In line with building appropriate incentives into the programme, it is necessary to devise a performance management system that is aligned with the desired change in behaviour and goal

achievement. It was experienced through all the projects at Sasol Mining that whenever there was uncertainty about the importance of targets, or monitoring was relaxed, behaviour change and improvement started to collapse. However, the opposite was also observed. The performance targets laid down on organisation level must be cascaded to individual level to reflect the area of responsibility and control that the specific individual has.

6 Put the right people in key positions

The importance of having suitable people in key positions to drive the change was emphasised in many of the interviews that were conducted. The right person with the right leadership skills, passion and energy to drive the improvement initiative has proved to be invaluable in more than one instance at Sasol Mining. Another example of the importance of having the right internal person in a key position was where certain key processes were driven by external consultants. When they withdrew without suitably trained process specialists ready to replace them, the sustainability of the initiative was jeopardised. The skill of leaders to correctly match a person's potential and ability with the need in the company is critical to unlocking people's potential energy.

7 Keep motivation levels up

The level of motivation of the workforce to perform beyond expectation and to sustain the performance is another sustainability indicator for operations excellence. Leaders need to understand what is inherently driving their workforce's motivation to perform. The giving of incentives during Renewal is merely one example of such a motivational factor. There are other factors which need to be understood in order that leaders may create an environment where people are content and motivated to perform at their best. Motivated people will automatically sustain high levels of performance, injecting a critical energy element into the operations excellence mix.

8 Make people from all levels part of improvement plans

People involvement was very important during the Renewal project. Employees from the lowest levels had the opportunity to be part of a team and to develop their own improvement plans. This is a lesson learned thoroughly by Sasol Mining in the »



past ten years: the more involved people are in creating their own improvement plans, the better their level of buy-in will be, and therefore the greater the likelihood of successful implementation. This holds for people on all tiers of the organisation: from operators at the coalface, to middle management and executive managers.

Involving people in the improvement process creates ownership

9 Get people to own the improvement process

Involving people in the improvement process creates ownership, which was shown as crucial to gain the right momentum. In the Renewal project there was substantial buy-in, which was reflected in the results. But to an extent it was also seen as 'the consultants' process'. If consultants are used to help with the design of the process, the business needs to have full ownership of the

implementation, operation and management of the process in order for it to be successful when the consultants leave the site.

10 Train people and make training sustainable

Training, and especially ongoing training, was indicated as a major precondition for sustainable improvement. In Vuselela, a two-week training programme was held for leaders, but it was only a once-off event. Moreover, the training focused mainly on problem-solving and not on the improvement methodology, which posed further problems for the sustainability of the improvement methodology.

Training programmes should be aligned with the long-term goals of the improvement initiative. The continuation of training after the implementation phase is a critical success factor which was learned the hard way by Sasol Mining. If training programmes are stopped, or are not properly integrated in the standard training suite of a company, the momentum for operations excellence is directly influenced.

11 Avoid diluting the focus of the improvement initiative

The amount of undivided attention and focus which the improvement initiative receives in the business can give an indication of the sustainability of the initiative. This lesson was learned with both Vuselela and CI in Sasol Mining. People should not see the initiative as 'just another project to be completed', but rather as the 'way we conduct our business from now onwards'. This mindset provides a powerful focus and driving force for the sustainability of operations excellence.

12 Embed a commitment to performance as a business discipline

The case study highlighted the need for strict discipline and a commitment to performance throughout the organisation. Managers must take responsibility for their teams' performance. Performance targets should be seen as non-negotiable, and poor performance should have consequences. Only with this attitude in place does operations excellence have a chance to be sustainable. Numerous examples of experiences during the improvement projects have made this point clear.

13 Foster a culture of change and improvement

Finally, all the people-related forces set out above should work together to create an organisational culture of embracing change and performance improvement. This culture should be transferred to all new employees as 'the way we work here in our organisation' in order to enable sustainable operations excellence.

Sasol Mining is fortunate to have a history of improvement initiatives. Although some initiatives have been more successful than others, this history has created a culture of change and improvement within Sasol Mining which is unique in the Sasol Group. The findings of this study have revealed that it is possible to define the elements of a diagnostic tool to indicate what the probable sustainability of an improvement initiative might be. The newly developed sustainability lead indicator diagnostic tool is currently being used in Sasol Mining and the OE initiative is adjusted according to the results flowing from it.

Sasol Mining reported excellent results during 2010, evidence that OE is delivering value and that OE is gearing the company for even better results in years to come. ■



Marinda Swart

This study was conducted by Marinda Swart as her MBA research project at the University of Stellenbosch Business School (USB), under the supervision of Prof Johan Louw, subject head of Logistics Management at Stellenbosch University. The research report, *Sustainability of operations excellence in Sasol Mining: A case study*, was presented in March 2010.