A new model for compliance and reporting in the minerals industry

by S.V. Rungan*

Synopsis

The modern mining industry is increasingly being tasked to comply with various legal, industry and social prerequisites. In addition to complying with these, the mining industry is further expected to effectively report on their compliance. Although there are many models that aid the mining industry in compliance and reporting, it is perhaps opportune for a new model to be introduced. The Compliance Spindle is postulated as a new and alternative model which is easy to understand and has the possibility of implementation in South Africa and other jurisdictions as well. The Compliance Spindle is also an effective tool to educate future compliance officers. The new model provides for all aspects of compliance and reporting and can be easily modified to take account of new developments in the mining compliance and reporting arena.

Keywords
Compliance and reporting model, model, compliance, reporting, regulation and governance, mineral asset valuation, technical and financial accounting and reporting, technical reporting, environmental and social concerns, enterprise-wide risk management.

Introduction

The mining industry, though a vital industry, is commonly perceived as being dangerous, destructive and distrustful – the 3 Ds of mining. By engaging in compliance and reporting practices, the mining industry can dispel these perceptions, or minimize them. To effectively deal with all the compliance and reporting issues that affect the mining industry, it is imperative that the various aspects of mining compliance and reporting are identified and addressed.

According to Siy: 'the need to deal with risks acts as a strong driver towards the creation of compliance regimes. These are enforceable, semi—legal systems which are evident in technical fields such as banking . . . and accountancy . . . In the case of mining, regulatory systems governing mineral disclosure and financial reporting predominate.'[1]

While he might be correct in certain respects, this does not constitute a holistic description of mining 'compliance' and 'reporting'. This paper considers the various aspects of mining compliance and reporting and postulates a new model.

It seems that there is a Compliance Institute in South Africa,[2] but this institute is more geared to the financial services industry and it does not cater for the mining industry per se. The Compliance Institute will not be considered further, save to say that such an institute for the mining industry would stimulate a specialization in this field and also create a forum for the specialization of mining compliance and reporting officers or inspectors, which would enable the further monitoring of these various issues.

While the issues discussed here are generic in nature and can be applied to the mining industry regardless of jurisdiction, the primary focus of the paper is mining compliance in South Africa from an educational and training perspective.

What is compliance and reporting?

Educators frequently talk of the 'blank slate' when getting students to look at particular subjects from a new, or different, perspective; that is, students are asked to ignore all that they have learned previously in order for them to assimilate the new, or different, perspective. Similarly with mining compliance and reporting, all preconceived notions must be erased and the subject must be looked at anew.

Mining compliance and reporting consists of two important aspects namely, compliance and reporting. Each will be considered individually.

* *School of Mining, University of the Witwatersrand.*

SA ISSN 0038–223X/3.00 + 0.00. Paper received Oct. 2010; revised paper received Oct. 2010.

A new model for compliance and reporting in the minerals industry

The *Concise Oxford Dictionary* defines 'compliance' as: 'action in accordance with request, command, etc.'[3]

From this definition, it can be surmized that mining compliance entails the adherence to principles and rules that govern particular circumstances or issues that are intrinsic to the mining industry; in other words, mining compliance entails the way the mining industry or mining companies have to comply with the various aspects of doing business and conducting operations.

In normal circumstances laws govern compliance, in that, to ensure that people comply with the various laws the State enacts, enforce laws contained in statutes, and also administer the punishment should the laws not be adhered to,[4] as postulated by Siy above.

While statutes may define the crimes and punishments,[5] there are also Common Law crimes which incur liability on the part of the perpetrator; for example, murder is a Common Law crime.[6] However, statutes can also extend the Common Law crimes; for example, the Common Law crime of murder has been extended by the Criminal Procedure Act which provides:

'It shall be sufficient in a charge of murder to allege that the accused unlawfully and intentionally killed the deceased, and it shall be sufficient in a charge of culpable homicide to allege that the accused unlawfully killed the deceased.'[7]

As such, a person can be guilty of a crime in terms of the various statutes that exist or as per the dictates of Common Law (which, in certain instances, may be modified by statute).

Whereas this article is not an exposition on Criminology, nor on the influences on a person to commit a crime, it can be said that the mere presence of a law does not necessarily serve as a guarantee that the law will not be infringed. An individual is vested with qualities that ensure laws, be they formal or rules of society, are followed; that is, the individual has a sense of ethics. However, society cannot teach professionals ethics for their particular professions. This task is assumed by professional bodies that teach their members the relevant ethical considerations by striving to create a uniform set of practices to which all members adhere and aspire.

Members who fail to comply with these practices are regarded as having behaved unethically and would then be disciplined according to the established rules of the professional body concerned. The mining industry is comprised of various professions, each governed by a particular professional body; for example, mining engineers belong to the Engineering Council of South Africa (ECSA), mine surveyors belong to the South African Council for Professional and Technical Surveyors (PLATO), geologists belong to the Geological Society of South Africa (GSSA), or they might even be affiliated with the South African Council for Natural Scientific Professionals (SACNASP), and so on. In setting practices, professional bodies seek, not only to protect their members from unscrupulous persons, but also protect the professions they represent. This translates into members behaving in a particular manner not only to protect their colleagues, but also to protect their professions and thereby themselves.

In the same way, compliance does not mean simple adherence for the sake of adhering. It requires a commitment to adhere; that is, you believe it is in your best interests to adhere. Therefore, reference is not made to just obeying laws and professional codes but something more.

A 'report', is defined as 'bring back or give account of, state as ascertained fact, tell as news, narrate or describe or repeat . . .'[8]

In relating this definition to that of 'compliance'; 'reporting' would entail a form of announcement or publication on the level of compliance.

This essentially indicates that, in addition to complying, there has to be a reporting of the level of compliance as well. From the above, it can be seen that both go hand-in-hand; one cannot engage in reporting if there is no compliance and there can be no effective compliance if there is a failure in reporting. Effective compliance therefore is subjected to the adage: 'Justice must not only be done; it must be seen to be done.' For one to be in effective Compliance, one has to report or publicize one's compliance for all to consider. It can be seen, and would become clearer later in this paper, that by engaging in compliance and reporting, the 3 Ds of mining are being dispelled and society could be more appreciative of mining and related activities.

Obedience versus compliance

Although it would seem disingenuous to consider this issue under the subject of 'compliance', 'obedience' or 'adherence' would still have to be discounted in favour of compliance for the importance of compliance to be fully realized.

For mining, there is a lot of commitment required due to the long lead times from exploration to eventual production to the final stages of closure that span from a few years to a few decades. This inherent characteristic of a mining operation is indicative that a bigger commitment, in addition to obedience or adherence, is required. The long lead times also mean that the industry's interactions with local communities, governments and employees are over a longer period of time and hence these interactions need to be properly and carefully managed.

On the other hand, whereas other forms of business have a chance of lasting forever, the nature of mining is such that the mining operation will cease when the resource is finished or when the mining right has expired or is lost. Although the holding company, if applicable, might have been, or continue to be, in existence for years; it does not mean that its operations have lasted, or will last, for as long as the company itself.

If a mining company obeys laws only, it could be obeying for 10 years, 30 years, 90 years, or longer, depending on the life of the project and the continued renewal of its mining rights. Mining companies could find themselves having to continuously adapt their behaviour to ensure proper obedience with the laws, even in the dying days of the project, as the laws change.

By engaging in mining compliance and reporting, something more than mere obedience occurs; in that, mining compliance and reporting lends itself to having greater flexibility and certainty. This does not mean that there are no laws at all; it just means that there are not as large a number of laws to be obeyed by a compliant mining company.

Historically, as soon as minerals were discovered, mining started, for example, Kimberley and the development of the big hole.[9] This practice continued regardless of the people, health, safety and the environment.[10] These and other aspects are now dealt with in laws and must be obeyed.[11]

These issues can be contrasted with the issue of sustainable development (SD) where 9 of the world's largest mining companies started the Mining, Minerals and Sustainable Development Project (MMSD) which has, arguably, become the foundation of SD in mining the world over. To this end, while governments put SD issues in laws, it is, arguably, the mining companies themselves that have decided the extent of SD and its impact on a mining operation. The mining companies have set the standard and governments have followed.

Models of compliance

At present, in SA, there are 2 models for the monitoring of compliance that are frequently referred to—the Venmyn Compliance Triangle and the Venmyn Compliance Puzzle—both of which have proved, and continue, to be very useful tools for the mining industry. These models are briefly considered below.

The Venmyn Compliance Triangle

Figure 1 represents the Venmyn Compliance Triangle (the Triangle) which depicted Venmyn's view of mining compliance and reporting. From the diagram it can be noted that the sides of the triangle comprise the 'compliance and governance reporting rules' and the 'Venmyn valuations and response products' with the base comprising the 'independent technical and financial reporting'. This model identifies the two most important aspects of mining compliance ('independent technical and financial reporting' and 'compliance and governance reporting rules') and the response their tools thereto.

However, in addition the Triangle consists of triangles within a triangle; there are three mini-triangles that are right side up and one other that is upside down. The two base mini-triangles consist of 'technical due diligence' and 'financial valuation' respectively; they are separated by the upside down triangle of 'compliance and public domain reporting'. At the apex of the Triangle is a mini-triangle on 'fair and reasonable reporting'.

As one moves from the base of the Triangle to the apex, one moves from the various technical aspects towards fair and reasonable reporting. The major arrow from the base of the Triangle to the apex indicates that the process is a continuous one.

It goes without saying that the Triangle is fairly complicated. Although it is a useful tool for the experienced to utilize, it is not so for someone new to mining compliance and reporting. To such a person, it would seem much easier to delegate the responsibility of ensuring Compliance and Reporting to people who understand the model than to learn what is contained in it and what the requirements are.

The Venmyn Compliance Puzzle

A much easier model is the Venmyn Compliance Puzzle (the Puzzle) which is reproduced in Figure 2.

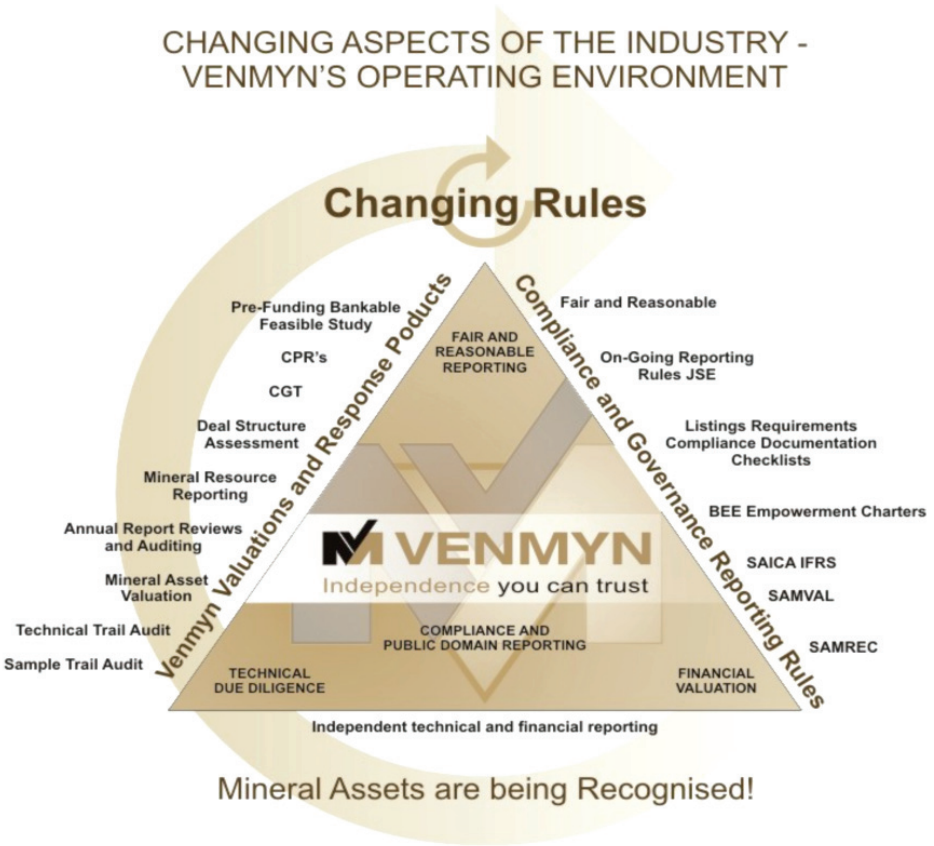

Figure 1—The Venmyn Compliance Triangle

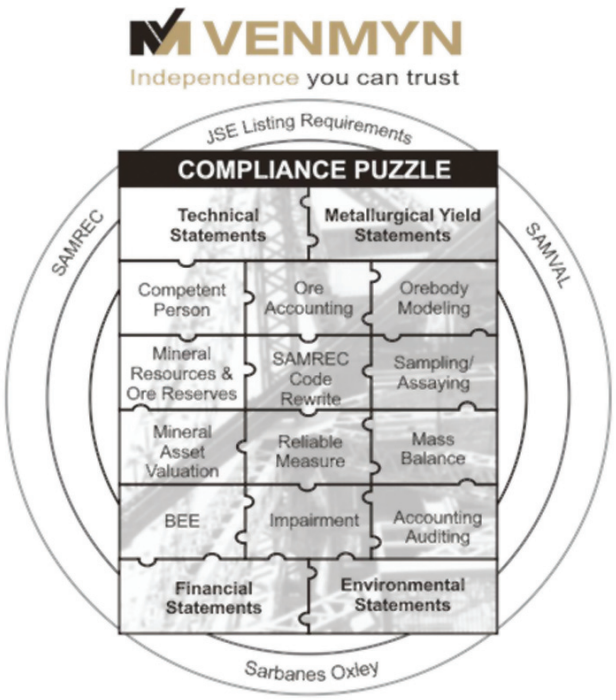

Figure 2—The Venmyn Compliance Puzzle

Figure 2 depicts the Puzzle which covers more aspects of mining compliance than the Triangle. It also goes further to indicate how the various aspects of mining compliance and reporting interact (for lack of a better word) with each other to lead to proper mining compliance and reporting. The Puzzle deals with mining activities; it is divided into four major sections—'technical statements', 'metallurgical yield statements', 'financial statements' and 'environmental statements'.

The various aspects of mining compliance and reporting are identified and the design of the Puzzle clearly depicts how each aspect interacts with another; for example, the Puzzle shows that the 'competent person' is responsible for the drafting of 'technical statements'. In this process, the competent person is responsible for 'ore accounting' and the classification of 'mineral resources and ore reserves' which, in turn, are dependent on the 'SAMREC Code'.

Encapsulating the Puzzle and completing it are concentric rings that depict the reporting and valuations aspects of mining compliance as per the 'JSE listing requirements', the 'SAMREC' and 'SAMVAL' codes, and corporate governance issues as envisaged by the 'Sarbanes Oxley Act' of the United States.

The Puzzle is clearer than the Triangle and, at a glance, enables a person to identify the various aspects of mining compliance. Having said that, it seems that statutes are not included in the Puzzle. Although it does refer to some statutory requirements, such as 'BEE' and the 'JSE listing requirements' it does not provide for the Minerals and Petroleum Resources Development Act and the Royalty legislation such as the Mineral and Petroleum Resources Royalty Act .

Accordingly, the Puzzle also does not cover all aspects of mining compliance and reporting.

Motivation for a new model

The two most frequently used models, as outlined above, are most efficient where people are already engaged in compliance and reporting practices.

As far as the Triangle is concerned, whereas the model is simple and easy to follow and implement, it does not seem to cater for all aspects of mining compliance and reporting; such as, the various statutes [companies Act[14], the Mineral and Petroleum Resources Development Act (MPRDA)[15] and the Mineral and Petroleum Resources Royalty Act[16] (the Royalty Act) and corporate governance.

For training and educational purposes, and for those new to mining compliance and reporting, it is unduly complicated to understand and may be even more difficult to implement.

While the Venmyn Compliance Puzzle refers to black economic empowerment ('BEE'), as far as the Broad-Based Socio-Economic Empowerment Charter for the Mining Industry (Mining Charter)[17] is concerned, the responsibility of mining companies extends beyond BEE to include other more socially responsible practices such as housing, beneficiation and procurement.[18] At present, on consulting the Venmyn Compliance Puzzle, it appears as though that BEE would only have an impact on the 'financial statements' and 'impairment'. To date, the writer is unaware of an impairment resulting from BEE and vice versa. Further, BEE does not affect the financial statements only but extends to the manner a mining company conducts its business as well as the manner in which it manages its business.

Further, the Puzzle refers to the Sarbanes Oxley Act, with which mining companies operating in the US comply. However, this specific reference seems to exclude SA, which is not bound by the Sarbanes Oxley Act but by the corporate governance principles of the King Commission on Corporate Governance.

The Puzzle also appears to be fixed and any new development would require a substantial change in its structure. This change would make the Puzzle bigger and perhaps more complicated.

As such, a tool that would be simple to understand and to follow would be appropriate. Whereas this would entail users being au fait with all or most of the aspects of compliance and reporting, they would be provided with the 'big picture' of compliance and reporting at a glance without being daunted by the complexity of the issues. A simple model should also provide for continuous expansion as the case may be. A person looking at the model will not be left with any doubt about the complexity of issues but would be able to easily follow the processes that would ensure effective compliance and reporting. After all, if a model is as difficult or more difficult to understand than the subject itself, then mining compliance and reporting would remain the purview of the few privileged experts.

The Compliance Spindle comes close to these requirements.

The new Compliance Spindle

Figure 3, though dated, indicates how the spindle looked in reality, when it was used to spin cotton into thread and popularized by Mahatma Gandhi.

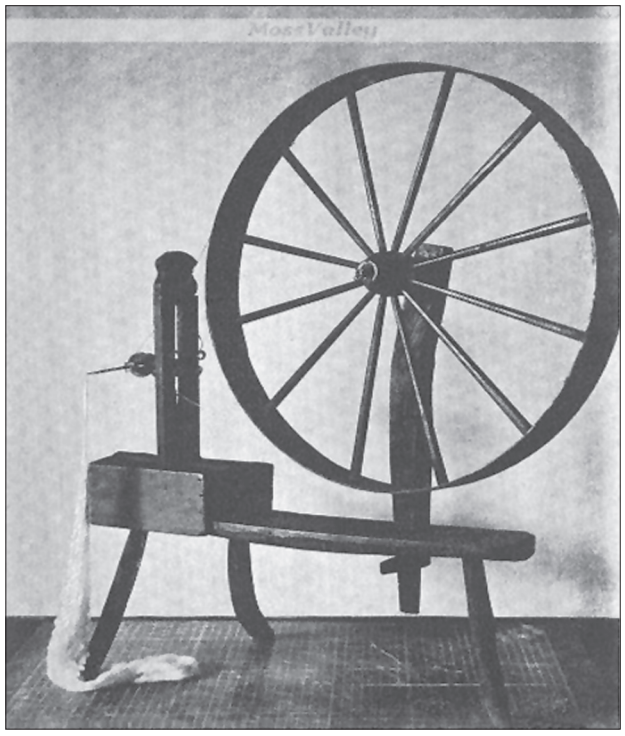

Figure 3—The new Compliance Spindle

In translating this picture into a model for compliance and reporting, one needs to understand how the spindle operates. The spindle comprises two wheels of different sizes connected to each other and resting on a base. Wool is placed at the smaller wheel and by turning the bigger wheel the wool is spun into thread. The connection between the big wheel and the small wheel ensures that the system is always operational and that the thread is properly spun.

The Compliance Spindle is represented in Figure 4.

At first glance, it appears that the Compliance Spindle does not identify all aspects of mining compliance. Although the other models discussed show that there are many issues, it does not seem so with the Compliance Spindle. However, on closer examination it is clear that the Compliance Spindle identifies and makes use of the subject categories that comprise mining compliance and reporting, thereby ensuring that it is not unduly complicated by excessive information.

Explaining the Compliance Spindle

Essentially, 'technical information' enters the Compliance Spindle and once it goes through the processes, results in 'proper compliance and reporting'. 'Technical information' comprises any information that is required by the mining company and is not limited to any particular process or stage of mining or mineral.

The Compliance Spindle starts when 'technical information' enters the system at the 'small wheel'. The 'technical information' then must pass the 'regulation and governance' portion of the Compliance Spindle to ensure that the information is sufficient to meet these requirements. If insufficient or inadequate, then more or better information is required—just as more cotton would be needed if there is insufficient cotton to spin. 'Regulation and governance' forms the base of the Compliance Spindle without which the Compliance Spindle cannot operate and would collapse. Being the first consideration, non-compliance would render the entire operation unworkable and an inability to proceed to the other aspects of mining compliance and reporting.

For example, in SA, if the miner does not comply with the requirements of the MPRDA then it would not receive the reconnaissance permit, prospecting right or mining right or any other right that was applied for. Further assessment of the project would thus be unnecessary as the requisite permit or right has not been attained

Thereafter, the 'technical information' goes to the bigger wheel where there is a continuous consideration of the 'technical and financial accounting', 'mineral ssset valuation' and 'environmental and social concerns'. None of these carry any priority over the other and must always be assessed. These issues keep the Compliance Spindle in motion.

At the hub of the big wheel is 'enterprise-wide risk management' (EWRM) which needs to be considered at all levels of operation as identified by the big wheel. The big wheel would be rendered inoperative should EWRM not be considered. If the big wheel fails then the system fails, as was mentioned above, by turning the big wheel the spindle becomes operative.

Due to the connection between the wheels, to cater for all the aspects identified by the big wheel, there has to be a continuous stream of information from the small wheel, passing the 'regulation and governance' aspect and then feeding into the big wheel. Once the aspects identified in the big wheel have been addressed then there is 'proper compliance and reporting'.

There might be an argument that the 'Regulations and Governance' aspect would be a risk and might be wrongly placed in the Compliance Spindle, but it should be noted that the consideration of regulation and governance as a risk is usually taken prior to the start of operations. If a mining company believes that the regulations and governance requirements of a particular country is not conducive to business or investment or are too cumbersome to implement then it would not invest. As such, this decision is taken

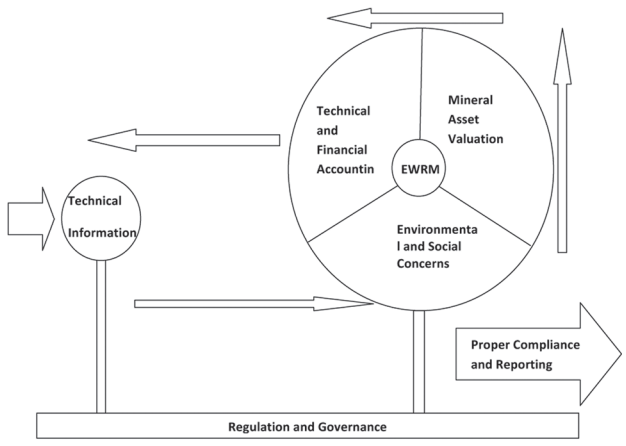

Figure 4—Compliance Spindle

before the system operates. In the same way, for example, if exploration is being conducted and the information cannot meet the requirements of 'regulation and governance', then the Compliance Spindle cannot operate and proper compliance and reporting are not possible.

It should be borne in mind that just as the spinning of cotton is a continuous process, so is the processing of information. Should more information be needed, then the process reverts to the small wheel for additional information and the process then begins *de novo*. Each aspect is needed for effective mining compliance and no component can be ignored without affecting on the other components of the Compliance Spindle.

The components of the Compliance Spindle

Now that the Compliance Spindle is operating, it is appropriate to consider the details of the various subject categories (components) in greater detail. Understanding the components creates an understanding of what might also form part of the component even though not specifically mentioned here.

Regulation and governance

As mentioned, this forms the base of the Compliance Spindle and if ignored would result in the collapsing of the structure.

Regulation

Regulation is split up into legal and industry regulation. This is because that it is not only the legislature that would affect mining compliance but also the mining industry itself by, for example, the institution of the various industry Codes.

Legal regulation

This comprises the laws that are passed by a government (local law) and which apply in a particular country, in this instance, SA. In addition, legal regulation also incorporates laws that are passed by an organization that has the effect of applying to many countries (international law); for example, the United Nations and the European Union.

Examples of legal regulations include:

- MPRDA
- Health and Safety Act[19]
- United Nations Convention on the Law of the Sea[20]
- The Universal Declaration of Human Rights.[21]

Industry regulation

As mentioned above, the industry, via the various professional bodies, also places certain rules and regulations on its members.

Each industry has rules and regulations unique to that industry due to the specialized nature of the industry and/or the specialized skills that are required. This would ensure uniformity of practices, uniformity of standards and uniformity of qualifications.

In the mining industry, uniformity of practices would ensure that one mining company does not gain an unfair advantage over another company by, for example, classifying resources and reserves differently from the other companies.

If there is a uniformity of standards, then companies are on an equal footing and can be properly compared. For example, if a mining company claims to be the best but comparison with another company is not possible, it is not possible to judge it to be the best. We cannot say it has the best product nor that it is worthwhile to invest in it as there is no basis for comparison.

Uniformity of qualifications would ensure that only suitably qualified persons perform certain functions. For example, asking a lawyer to design the ventilation system of a mine would not be sensible considering the qualifications possessed and required.

Examples of industry regulations include:

- Rules of Statutory Professional Bodies (SACNASP, PLATO, ECSA)
- Classification Codes (SAMREC Code, Canadian National Instrument – NI 43 101, the Australasian Joint Ore Reserves Committee (JORC) Code and so on).

Governance

Governance entails a proper monitoring of practices to ensure that there is effective compliance with all matters affecting the industry. 'Practices' would have to be considered in its broadest sense to include the way the company does its business (running a company) and also the way it conducts its operations (mining the ore).

Examples of governance monitoring systems include:

- Resource Reserve Classification
- Corporate governance
- Global Reporting Initiative.

Mineral asset valuation

Valuation of minerals is the cornerstone of any mineral operation as there can be no successful operation if there is no value in the minerals. If valuations are done incorrectly, shareholders would seek redress or, worse, a viable operation might be ignored. Apart from having a lot of litigation to deal with it would also affect the company's reputation and the reputations of those that control it.[22]

Technical and financial accounting and reporting

Funding, accounting and effective reporting ensure that the operation remains financially viable and effective.

Important considerations include:

- Taxation regime (s) such as the Income Tax Act and other revenue laws
- Banking issues and project finance
- Annual report reviews and auditing
- Annual technical statements
- Impairment of assets.

Environmental and social concerns

In this day and age, where SD and corporate social responsibility have become the dominant discourse, the environment and the local communities play an important part in any mining operation. In addition to environmental legislation (such as the National Water Act[23] and the National Environment Management Act)[24], this aspect is important to secure the site of the mining operation. If there is damage to

the environment or the lives of the local communities, there are various non-governmental organizations (NGOs) and the media that do not hesitate to vilify the mining company. For example, it was reported that Action Aid recently attacked AngloPlatinum for their treatment of local communities.[25] This elicited a speedy and strong response from Anglo Platinum:

'Anglo Platinum always strives to be a responsible corporate citizen and is concerned by the allegations made by ActionAid, which it believes to be inaccurate and to contain many distortions'.

This example indicates that mining companies have to often engage in public relations exercises to ensure that current and future operations are not jeopardized by NGO and media reports.

Enterprise-wide risk management

It is imperative that risk is considered and risk assessments are conducted during the entire operation. Failure to consider risks would not enable the company to determine its risk appetite and/or take effective corrective measures to mitigate the risks.

From the above, it can be seen that the Compliance Spindle covers most, if not all, aspects of mining compliance and reporting. Lists of the various components are provided, but these are by no means closed lists. Practitioners and newcomers could insert their particular circumstances into any of the appropriate components and thereby tailor the Compliance Spindle to their unique needs without affecting the operation of the Compliance Spindle. As such, it is not necessary to spell out each and every component in detail to the exclusion of all other issues.

Should there be a new consideration that needs to be included, the 'technical information' aspect would still be the point of entry with the 'regulation and governance' aspect remaining as the basis of the model. This would necessitate an amendment in the components of the 'Big Wheel'; only the 'Big Wheel' need be amended to provide for an additional consideration.

Conclusion

Compliance and reporting is a major concern for a mining company due to its nature and extent. Coupled with the long lead times inherent in a mining operation, mere adherence would be insufficient and mining companies would need to have a commitment to engage in an operation and to ensure that the operation is viable and effective. Although there are various models dealing with mining compliance and reporting, the Compliance Spindle considers all aspects of it and is easily adaptable without massive changes to its structure should there be a need to amend it.

This article is not aimed at condemning any other model. It is reiterated that they are extremely useful for compliance officials with experience in mining compliance and reporting. It should be noted that, individually, the Triangle and the Puzzle do not cover all aspects of mining compliance. Yet, together they provide a comprehensive assessment of mining compliance. Further, the models are generic to any operation in any country, whereas the Compliance Spindle was designed with a particular South African educational and training focus. As such, the other models have international application and can also be used in SA; the Compliance Spindle has a South African focus but would have international application as well.

Although the Compliance Spindle might appear not to identify all aspects of mining compliance, by considering the subject components in the model itself, the Compliance Spindle provides a snap-shot of mining compliance and reporting in a simple manner and does not contain a massive amount of information.

However, it cannot be said to be the definitive model of mining compliance and reporting. In fact, so versatile is the Compliance Spindle, it can be adapted to any other industry which requires a monitoring of compliance issues.

This model highlights the fact that those wishing to use the Compliance Spindle must have the requisite knowledge of the various aspects of mining compliance and reporting to be able to implement the Compliance Spindle. A 'competent person in training' would be able to use the model to familiarize himself or herself with the various aspects of mining compliance, and a competent person would be able to implement it properly. Further, by reference to the Compliance Spindle, a 'competent person in training' would easily be able to judge whether he/she is capable of signing the Competent Person's Report or not. In this way, the competent person himself or herself would be fully apprised of mining compliance and reporting.

The Compliance Spindle makes it possible for all persons to engage in compliance and reporting practices and so help to avoid the 3 Ds of mining. It also makes it possible for compliance and reporting practitioners to develop faster thereby necessitating the formation of a Mining Compliance and Reporting Institute—to enable a greater specialization of mining compliance and reporting and the development of more effective standards and practices.

However, it should be noted that, regardless of the sophistication and simplicity of any model, only a strong commitment to engage in mining compliance and reporting would ensure a successful implementation of the Compliance Spindle.

References

1. Siy, J.S.C. Compliance Regimes in Publicly—Listed Mining Firms: Mineral Resources and Financial Reporting Issues, *European Journal of Scientific Research*, vol. 27, no. 3, 2009 p. 372.
2. Compliance Institute of South Africa, www.compliancesa.com
3. Sykes, J.B. (ed.). *The Concise Oxford Dictionary*, 7th edition, Oxford University Press, 1983, Oxford: UK, p. 192.
4. Criminal Procedure Act 51 of 1977.
5. For example, S 36 of the Customs and Excise Act 91 of 1964, provides for the labelling of beer and the violation of this requirement.
6. Common Law is the basic system of legal principles and practices that are applicable in SA based on the country's legal history; that is, it consists of Roman-Dutch Law with English Law influence.
7. S 98; Act 51 of 1977.
8. Sykes, J.B. (ed.). *The Concise Oxford Dictionary*, 7th edition, Oxford University Press, 1983, Oxford: UK, p. 882.
9. The Big Hole: The Kimberley Mine—Kimberley Mine Museum, www.showcaves.com/english/za/mines/Kimberley.html.
10. Early Coal Mining History, www.dmm-pitwork.org.uk/html/history1.htm.
11. Mine Health and Safety Act 29 of 1996; National Environment Management Act 107 of 1998; Mineral and Petroleum Resources Development Act 28 of 2002.
12. Act 28 of 2002.
13. Act 28 of 2008.

14. Act 61 of 1973. A new Companies Act 71 of 2008 has been assented by the President but has yet to be made effective.
15. Act 28 of 2002.
16. Act 28 of 2008.
17. Broad–Based Socio–Economic Empowerment Charter for the South African Mining Industry, http://www.thedti.gov.za/bee/beecharters/MiningCharter.pdf.
18. Article 4; Broad–Based Socio–Economic Empowerment Charter for the South African Mining Industry, http://www.thedti.gov.za/bee/beecharters/MiningCharter.pdf.
19. Act 29 of 1996.
20. UN Convention on the Law of the Sea, http://www.un.org/Depts/los/convention_agreements/texts/unclos/closindx.htm.
21. The Universal Declaration of Human rights, www.un.org/en/documents/udhr/index.shtml.
22. See for example: 'Controversies Surrounding Royal Dutch Shell', http://en.wikipedia.org/wiki/Controversies_surrounding_Royal_Dutch_Shell.
23. Act 36 of 1998.
24. Act 107 of 1998.
25. Action Aid, 'Precious Metal: The impact of Anglo Platinum on poor communities in Limpopo, South Africa', www.actionaid.org/assets/pdf/ActionAid.AngloPlats.45dpi.pdf.
26. Anglo Platinum, 'The Facts: Anglo Platinum's response to ActionAid allegations', Second edition, http://www.angloplatinum.com/investor_media/im_latest_news/Anglo_ActionAid.pdf p. 4 (18/09/08). ◆

OBITUARY

John Keith Elers Douglas*

1918–2010

President of the SAIMM 1969–1970

Keith Douglas was born in the shadow of the great E.R.P.M. mine in Boksburg, Transvaal on 3rd April 1918. His father was a Mining Commissioner in the Government Mines Department and Keith used to accompany his father on his school holidays on visits to many small mines, particularly in the Eastern Transvaal. It is not surprising therefore that he developed an interest in mining at an early age. He was educated at the Pretoria Christian Brothers College and at the University of the Witwatersrand, Johannesburg, graduating in 1939 with a degree in Mining and Metallurgy.

In his year he was awarded the Chamber of Mines gold medal and a scholarship to study in the USA. World war II intervened so in 1940 he enlisted in the South African Engineering Corps and served for the next 5½ years in Abyssinia, Egypt, Libya, Lebanon and Italy.

After the war he travelled the USA. on the Chamber of Mines scholarship with the Colorado School of Mines for a year of post-graduate study for his master's degree. After returning to South Africa in 1947 he worked on various mines of the Rand Mines Group, including the first pilot uranium plant, extracting uranium from the residue slimes of the gold mines.

In 1950 he managed the Taung Lime Mine and thereafter managed the start of the Limeacres Mine near Silverstreams, Northern Cape. In 1955 he was recalled to the Johannesburg head office of the Rand Mines Group as Consulting Metallurgist and became involved in various development projects, which included ferrochrome and stainless steel production.

He was also involved in a major expansion of the lime product use, as high quality lime is an essential ingredient in the production of gold, uranium and steel, apart from many other applications.

In 1965 he was appointed chairman and managing director of the Northern Lime Company, a position he held until he retired to live in Plettenberg Bay in 1979.

His association with the Institute of Mining and Metallurgy started in his student days. He became a Member in 1951, served as President of the Institute in 1969, and was made an Honorary Life Fellow in 1978.

He was married to Frieda who predeceased him in 1992. They had 3 sons, 7 grandchildren and great grandchildren.

He was keen on golf and then bowls; he was an enthusiastic fisherman, loved to hike and to travel; and dabbled in oil and watercolour painting and astronomy. He was a founder member of the Plettenberg Bay Rotarian Society. He died peacefully in Plettenberg Bay on 1 September 2010. ◆

*Chris Douglas, son of John Douglas, wrote the obituary.