Value provided by the Institute

This year the SAIMM will celebrate its 130th 'birthday'. In this commentary I would like to focus on the value and service that the Institute has provided to the mining and metallurgical industries.

The SAIMM is a very valuable medium through which members in industry, academics, and researchers can interact with others in seminars and conferences, and through publication in the *Journal*. These conferences and publications have often focused on Southern African conditions and operations, but numerous international conferences have also been hosted. Such conferences provide opportunity for informal exchange of information between delegates, which adds value beyond that of the published proceedings. The proceedings of the more recent conferences (in the electronic era) are all open access, and it is expected that soon they will be searchable online by keywords. This will make many practical papers readily available. The *Journal* is also open access, and papers can be easily retrieved through an online search. The *Journal* has recently been attracting a significant number of contributions from other countries. In the current era in which access to international journals is costly, and many open access journals charge authors for publication, the Institute can be very proud of the fact that it provides the free, open access service to all, and hence value to the mining and metallurgical industries. I would now like to focus further on publication 'value'.

In his paper '*Journal impact factors – the good, the bad and the ugly*' in the September 2022 issue of the SAIMM Journal, Professor Francois Malan questioned the value of journal impact factors and numbers of citations as a measure of research excellence. He indicated that there is a growing movement towards an alternative approach. Numbers of citations, and thus impact factors, are open to manipulation by researchers and research organizations to 'demonstrate' research excellence. However, there is a significant difference between numbers of citations (often manipulated) and numbers of *influential* citations. As an example, an academic colleague of mine was invited to co-author a paper to which he had provided editing input. Based on some 200 citations, this proved to be his 'best' paper, but it only achieved a single 'influential' citation. A citation in a paper that deals with the cited information in some detail is an influential one, rather than a citation that just appears, with no further 'use' of its content. I suggest that the *value* created by a paper would be a significantly better measure of research excellence than citations or impact factors.

In engineering, and particularly in the mining and metallurgical sphere, operators will frequently make use of published information for the benefit of their operation but will rarely prepare any paper in which they would cite that information. Therefore, they have gained value from the published information, and perhaps this is a much better measure of research excellence than citations. In this context 'value' has many meanings. It can be financial: for example, a student of mine described a case in which additional geotechnical investigation yielded a projected financial benefit of 70 times the cost of the investigations; but perhaps more importantly it will include 'benefit to the world values' such as health and safety, social, environmental, humanitarian, and ecological values.

In the mining and metallurgical industries there are regular examples of significant achievements and problems. Publication of the bases of the achievements, and the causes of the problems, could be of considerable value to other companies in the broader mining sphere and thus create value in general. By way of contrast, an academic publication in an area of scientific interest may achieve many academic citations but provide no real value to the mining and metallurgical industries.

Both industry and research personnel are therefore encouraged to publish solutions to problems and explanations of problems, and thus *create value* for the benefit of the industry at large. Perhaps mining companies should quantify the value that they aim for in relative terms – for example, to be in the upper quartile regarding safety, to be in the upper quartile regarding environmental control, or to be in the lower quartile of the cost curve. This would give researchers and operators guidelines against which to measure the value of their publications.

There are relatively few mining-related journals published in the world, and the Institute and its members can be proud that our *Journal*, which has now been in publication for 70 years, is one of those and is internationally recognized. The SAIMM Journal grew out of that of the Chemical Metallurgical and Mining Society of South Africa, which began publication in about 1900. Thus, we can also be proud that the SAIMM has been providing service and value to our own industries and those in other countries for 130 years now. I trust it will continue to do so for many years in the future.

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