PERFORMANCE EVALUATION: A NEW APPROACH FOR INTEGRATED MANAGEMENT SYSTEMS BASED ON THE AS/NZS ISO 14031:2000

Jos_ Flavio Guerra Machado Coelho
PhD student, James Goldston Faculty of Engineering & Physical Systems °V
Gladstone Engineering Centre, Central Queensland University, Gladstone, Australia.
Email: f.coelho@cqu.edu.au

Prof David Moy
James Goldston Faculty of Engineering & Physical Systems °V
Gladstone Engineering Centre, Central Queensland University, Gladstone, Australia.
Email: davidmoy@optushome.com.au

ABSTRACT
Sustainability of organizations is directly linked to the continual improvement of business performance. Many organizations have found a way to improve performance through the establishment of management systems. To maximise benefits of the system, it is necessary also to develop and implement a well-structured performance evaluation process to assist both the business and its interested parties achieve agreed objectives, in a sustainable way. This paper considers a new methodology for performance evaluation of management systems based on the concepts of the AS/NZS ISO 14031:2000, CSA PLUS 1144 and GEMI °V Measuring environmental performance. The methodology is being developed at a time when there is increasing interest in social issues, as one of the three constituent parts of sustainability (social, economic and environment). The material presented is derived in part from PhD studies of Jos_ Fl_vio Coelho.

Keywords: ISO; Sustainable development; Performance evaluation; Performance indicators; Social accountability; Management systems.

1.0 INTRODUCTION

Sustainability [1, 2], inside organizations has to be directly linked with the continual improvement of business performance. Many organizations have found in the establishment of management systems, in particular integrated management systems (IMS), based on the ISO 14001:1996, ISO 9001:2000 and AS/NZS 4801:2001 or OHSAS 18001:1999 or BS 8800:1996, a way to improve many aspects of business performance.

It has been recognised, however, that a management system in itself is not enough to improve performance. Within the management systems, it is necessary also to develop and implement a well-structured performance evaluation methodology if the business and interested parties objectives are to be met in a sustainable way. The management systems standards state that organizations have to measure and monitor key characteristics of their activities to assess their performance. None of these specification

standards provides much information on how to do it. None of them shows how to implement a performance evaluation [3-8] process.

This paper describes work being undertaken on improved methodologies for development and implementation of performance evaluation processes in organizations. The approach uses as a basis the concepts of the AS/NZS ISO 14031:2000, CSA PLUS 1144 and GEMI °V Measuring environmental performance. The aim is to develop a process that can be applied in any size and kind of organizations, but in particular the small and medium sized businesses [9-11].

The need for improved performance evaluation methodologies was identified during evaluation of some Brazilian case studies; from discussions with business and industry associations; and from specific experiences of the authors.

2.0 RESEARCH APPROACH

After an extensive search around the world, the author moved to Australia in January 2001 to develop a new performance evaluation methodology. He has found in Queensland a very good environment to develop his project at a PhD level, at Central Queensland University and in partnership with Central Queesland organizations.

The main steps of the program are:

- the identification and critical evaluation of the existing literature and operational approaches to performance evaluation for management systems;
- review of the role and objectives of performance evaluation as part of the overall management of businesses;
- identification and assessment of the role of performance evaluation within the operations of business organizations;
- examination of the role of objective performance evaluation in the internal and external communication processes of organizations;
- the integration of performance evaluation with external reporting processes through participation in community groups that have been working on the development of sustainable communities;
- continual development of a revised performance evaluation methodology; and
- the assessment and improvement of the revised performance evaluation methodology in conjunction with industry, industry associations; and community organizations.

An extensive literature search and evaluation about performance evaluation was done and many different approaches addressing the subject were found as, Balanced Scorecards[12], the Baldrige Award[13], Intellectual Capital[14], the Triple Bottom Line[15], Executive Dashboards, GRI[16], Systems Thinking[17], AS/NZS ISO 14031:2000, CSA PLUS 1144, GEMI °V Measuring environmental performance[9-11], among others. All of them have a component related to performance evaluation but the ones that address clearly the process of performance evaluation for management systems are the following standards: AS/NZS ISO 14031:2000, CSA PLUS 1144 and GEMI °V Measuring environmental performance.

These three standards focus primarily on environmental performance. The concepts encompassed within the three standards were expanded to encompass aspects related to other activities and areas of influence including: economic, production (quality), occupational health & safety; social, cultural aspects. Direct consultation with senior management of some of Gladstone°¶s largest industry organizations has been

undertaken. It is recognised that these large organizations have sufficient resources and internal capacity to develop and implement their own systems. They are also currently reporting, or at least considering the implementation of extended external reporting, to the requirements of Triple Bottom Line initiatives. It was therefore considered that their experience could be drawn on in the development of improved evaluation and reporting processes applicable to a wide range of organizations.

The identification and evaluation of the existing industry key performance indicators used for operational management is accompanied by the tracing of their utilisation through the reporting chains to external and internal stakeholders. This part of the study is continuing with a number of major business organizations.

To help ensure that performance indicators and the reports based on them are meaningful in the community context, community consultation was considered essential. To this end, participation in a community group, called °ßGladstone Region Sustainable Group°® (GRSG), in Gladstone is being organised. The GRSG, which was established in January 2000, compromises local councils, educational institutions, industrial conglomerates, tourism providers and community groups within the region. It has the responsibility to develop a report, with indicators, and a plan to transform Gladstone into a sustainable city. The draft of the report, called °ßBetter Gladstone °V Better World°®, is already developed. In the near future a plan will be developed based on the final version of the report.

To support the GRSG, the main industries of the region formed the °ßGladstone Area Industry Network°® (GAIN). This group has the following objectives, among others:

- to contribute to the development of the report and the plan for a sustainable Gladstone;
- to develop plans to improve their activities to comply with the community requirements;
- to assist their suppliers to comply with the same requirements; and,
- to translate their performance reports into readable documents for the community. Readable means reliable information that can be understood by the community. Also information that can°¶t be negatively interpreted by the same community and consequently affect the companies°¶ reputation.

The authors of this paper are also working with this GAIN group as part of the research project. This involvement provides the opportunity to collect information on social attitudes and community reporting requirements that will help improve performance evaluation processes so that outputs can be better reported within, and external to, the organization.

In addition, agreement has been reached for industry organizations to make available their current methodologies of performance evaluation. This information has undergone preliminary evaluation and relevant concepts / conclusions have been incorporated into the performance evaluation methodology being developed within the Ph D project at CQU. The commitment of the research group to collaborating organizations is to make available the new performance evaluation methodology for use by the chain of suppliers of the companies involved in the GAIN group.

3.0 RESULTS AND DISCUSSION

The methodology adopted follows the systems approach used in the ISO standards is the °ßPlan °V Do °V Check °V Act°® (PDCA) approach.

Figure 1 shows the steps of the proposed (draft) performance evaluation methodology and its integration with management systems

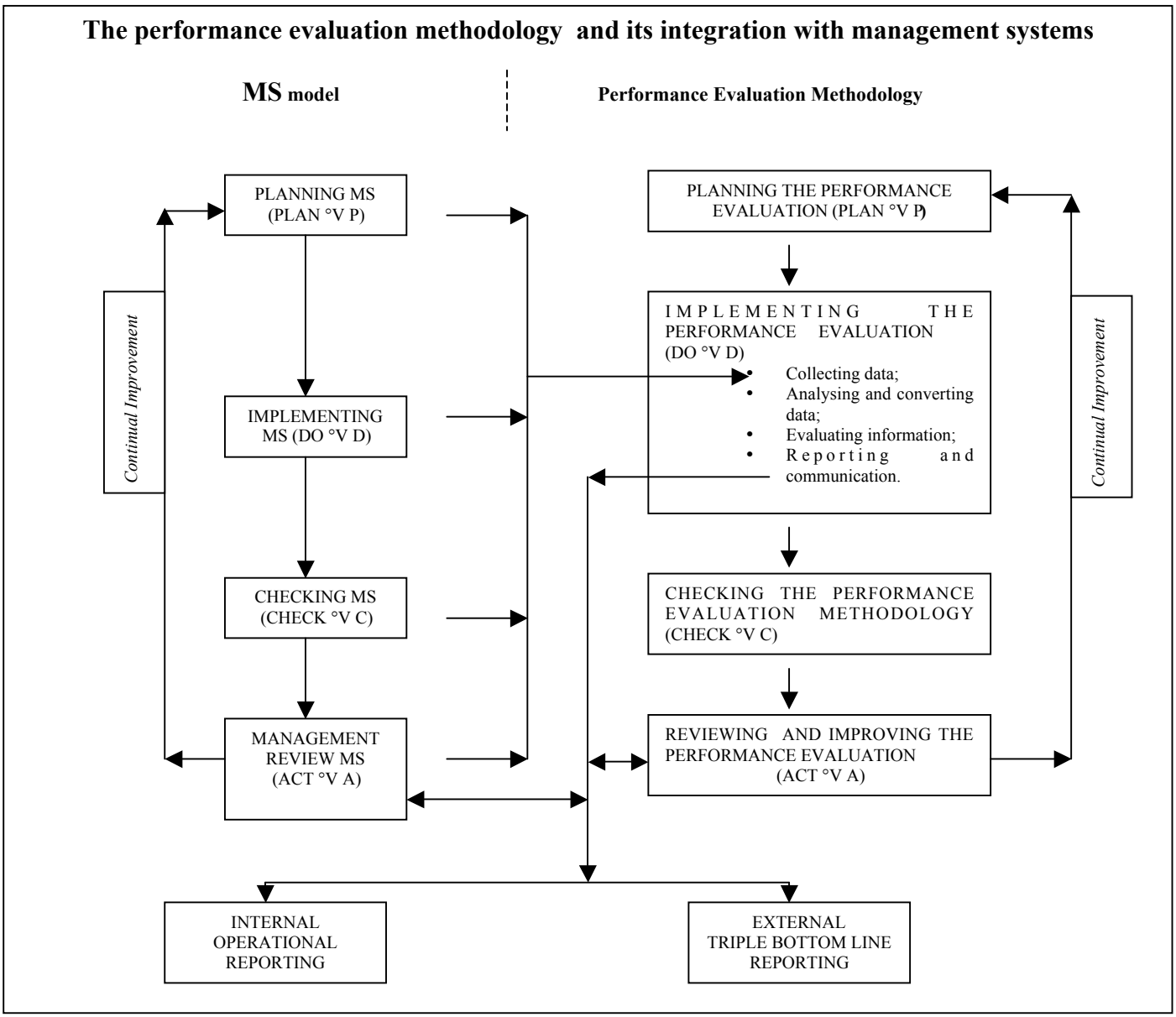

Figure 1: The performance evaluation methodology and its integration with management systems

Other aspects of the methodology are:

- it is designed to provide management with reliable and verifiable information on an ongoing basis to determine whether an organization°¶s performance is meeting the criteria set by the management of the organization;
- it can be applied in any size and kind of organizations, but in particular the small and medium sized ones;

- it can also be applied in organizations irrespective of whether they have or do not have management systems in place because the methodology is also a system;

- the results of the performance evaluation can be used as a source of data to report the organization°¶s performance for its interested parties;

Use of this approach and the AS/NZS 4360:1999 Risk Management Standard [18] allows for the analysis of the Company°¶s activities in high risk situations as well as for normal day by day activities. It also allows for social and cultural issues to be assessed and analysed by groups formed from the employers, employees and the community;

To be effective, the methodology also requires the use of a range of well-selected indicators (social, economic, environmental, cultural, quality and occupational health &safety) to provide information about the key characteristics of the organization°¶s activities, management systems and area of influence. Preferable indicators are the ones that can be used today and in the future so as to permit long term analyses.

It is expected that indicators related to different issues may have to be converted / manipulated to form ratio indicators. These ratio indicators can help in general analysis. Work on the identification and development of sustainability indicators to be used in conjunction with processes outlined in this study is continuing.

4.0 CONCLUSIONS

For the organizations that want to continue to survive and compete in the competitive national and global market it is necessary for them to continually improve performance in a sustainable way. They must take into consideration the requirements and needs of the interested parties.

The new performance evaluation methodology has the intention to clarify and to facilitate the process of performance evaluation for companies so as to help them to attain their objectives in a more efficient and sustainable way.

The material presented is derived in part from PhD studies of Jos_ Fl_vio Coelho.

References

1. British Telecom, *A Question of Balance: A report on sustainable development and telecommunications, <http://www.bt.com/corpinfo/enviro/bal/ethical.html> (assessed in 28 October 2001)*. 1997, British Telecom.
2. World Commission on Environment and Development, *Our Common Future - World Commission on Environment and Development - the Brundtland Report*. 1987, Oxford University Press: New York, USA.
3. International Organization for Standardization, *ISO 14001:1996 - Environmental management systems - Specifications with guidance for use*. 1996, International Organization for Standardization: Geneva, Switzerland.

4. International Organization for Standardization, *ISO 9001:2000 - Quality management systems - Requirements*. 2000, International Organization for Standardization: Geneva, Switzerland.
5. Standards Australia and Standards New Zealand, *AS/NZS 4801:2001- Occupational health and safety management systems - Specification with guidance for use*. 2001, Standards Australia: Sydney, Australia.
6. British Standards Institution, *OHSAS 18001 : 1999 - Occupational health and safety management systems - Specification*. 1999, British Standards Institution: London, UK.
7. British Standards Institution, *BS 8800:1996 - Guide to Occupational health and safety management systems*. 1996, British Standards Institution: London, UK.
8. International Organization for Standardization, *ISO 9001:1994 - Quality systems - Model for quality assurance in design, development, production, international and servicing*. 1994, International Organization for Standardization: Geneva, Switzerland.
9. Standards Australia and Standards New Zealand, *AS/NZS ISO 14031:2000 - Australian and New Zealand Standard: Environmental management - Environmental performance evaluation - Guidelines*. 2000, Standards Australia: Sydney, Australia.
10. Canadian Standards Association, *CSA PLUS 1144:1998 - Evaluating Environmental Performance: Indicators and Measures - A Small Business Guide*. 1998, Canadian Standards Association: Etobicoke, Canada.
11. Global Environmental Management Initiative - GEMI, *Measuring Environmental Performance - A Primer and Survey of Metrics In Use*. 1998, Washington, USA: Global Environmental Management Initiative.
12. Kaplan, R.S. and D.P. Norton, *The balanced scorecard: translating strategy into action*. 1996, Massachusetts: HBS Press.
13. Hart, C.W.L. and C.E. Bogan, *The Baldrige: what it is, how it's won, how to use it to improve quality in your company*. 1992, New York: McGraw-Hill.
14. Hudson, W.J., *Intellectual capital: how to build it, enhance it, use it*. 1993, New York: J. Wiley.
15. Elkington, J., *Cannibals with forks: the triple bottom line of 21st century business*. 1997, Capstone: Oxford.
16. Global Reporting Initiative, *GRI - Sustainability reporting guidelines on economic, environmental, and social performance*. 2000, Boston: Global Reporting Initiative.
17. Sterman, J.D., *Business dynamics: systems thinking and modelling for a complex world*. 2000, Boston: McGraw-Hill.
18. Standards Australia and Standards New Zealand, *AS/NZS 4360:1999 - Australian and New Zealand Standard: Risk management*. 1999, Standards Australia: Strathfield, Australia.