

A NEW APPROACH TO PERFORMANCE MEASUREMENT FOR SMALL AND MEDIUM ENTERPRISES

M. Barnes, L. Coulton, T. Dickinson, S. Dransfield, J. Field, N. Fisher,
I. Saunders, D. Shaw
CSIRO Australia

Abstract

CSIRO Australia is developing an approach for organisational performance measurement to assist small and medium enterprises (SMEs) better manage their business risk. These enterprises, considered vital to economic growth and job provision, are susceptible to business failure, primarily due to poor risk management associated with inadequately informed decision making. Improved performance measurement provides a basis for better informed decisions for both control and improvement. The framework used by CSIRO to assess the status of the measurement system considers all aspects of enterprise performance, including business, organisation, and products, services and processes. It generates specific improvement recommendations appropriate and relevant to the SME sector.

Introduction

Small and medium enterprises (SMEs)¹ comprise 95% of Australian businesses, employ 45% of the workforce, and generate 55% of sales. With significant downsizing of large enterprises over recent years, there has been an increasing interest from both governments and industry bodies in Australia in the growth potential of this sector. It is recognised that there are political, economic and social imperatives for helping SMEs to survive and develop, particularly to support job growth. It is recognised that SMEs are likely to be less financially stable and hence more likely to fail. Financial insecurity reflects the higher levels of risk exposure of SMEs, a consequence of the interactions of many size-related factors, including:

- access to funding
- access to, and influence over, customers and markets, particularly export markets
- access to, and retention of, knowledgeable and competent staff, including managers
- access to, and influence over, both strategic and commodity suppliers
- influence over communities
- product and service mixes and volumes
- access to research and development
- access to technology
- productivity and quality of their value-added outputs

This paper provides a progress report on a project designed to develop and implement an approach to measuring, monitoring and improving organisational performance. The thesis is that a better organisational performance measurement system, which takes account of all of the

¹ The main criteria defining these enterprises are that they have fewer than 500 people employees, less than \$100M in annual revenue, and that they are autonomous in the sense of being economically independent of any other enterprise.

critical factors that contribute to business risk and hence enables more informed decision-making, will provide SMEs with a sounder basis for managing that risk.

Background to Project

A 1994 Federal Government-funded survey of SMEs in Australia indicated that their primary concern was Quality. Subsequently, the Government provided funding to its scientific research arm, CSIRO, to initiate specific projects to help SMEs address this concern. Some of this funding was directed to CSIRO's Quality Improvement Group, a group of statisticians with experience and knowledge gained from working in industry with quality management implementation and evaluations against national quality award guidelines. A project manager with considerable experience in quality management, including organisational assessment, was appointed in mid-1996. Because the area of performance measurement is known to be chronically weak at all levels in Australian enterprises², the project was directed towards establishing a measurement-focussed approach to managing organisational performance, consistent with quality management principles. Critical factors for success of the approach included:

- alignment with the enterprise's goals
- promotion of systems thinking to ensure integration and consistency
- relevance and practicality of measures to real business and organisational needs
- ease of adoption

The objectives are being addressed in three phases:

Phase 1: Develop a methodology for improving measurement of performance that is consistent with quality management principles and relevant to the needs of the SME sector. Validate the approach through a series of case studies with selected SMEs.

Phase 2: Develop ways of making this methodology readily accessible to its intended audience, by identifying and developing delivery mechanisms appropriate to the SME sector, establishing distribution channels appropriate to the target market; and implementing a 'virtual shopfront' to support the initiative.

Phase 3: Maintain ongoing quality assurance on both content and process of the program as delivered, and continue research to ensure that the program remains contemporary.

During 1996/97, the project team (refer author list) focussed on Phase 1 activities. Phases 2 and 3 are currently underway.

Project Design

Phase 1 commenced with a detailed analysis of two major reports (McKinsey,1993; Karpin, 1995) that provided background information concerning why and how SMEs might take a favourable view of quantitative aspects of a Quality-based improvement program. The climate for Quality *per se* was not necessarily positive, as anecdotal evidence suggested that some enterprises had had 'less than good' experiences with quality system certification, which they

² The data- and information-related categories within the Australian Quality Award evaluations consistently score lower than all other categories within the awards framework.

equated to Quality Management. A preliminary assessment of how measurement-based ‘quality management’ might be effectively introduced and adopted in SMEs identified some critical factors. The program would need to:

- gain access to clients through channels familiar to the CEOs of SMEs
- secure commitment to the ‘program’ from the CEO
- recognise the business experience of the CEO
- be relevant to the current needs of the SMEs
- demonstrate that the approach added value to their business
- be time and cost efficient in application

A number of case studies were carried out to inform development of appropriate methodology and also to provide the basis for developing a commercially deliverable ‘product’. The case study program was designed to encompass different industries³, geographical locations and localities; all sizes of SME⁴; differing maturities in terms of markets and products or services; and with prior ‘quality management’ experience ranging from nil to considerable. No account was taken of the educational levels required of staff in the enterprise.

The core competencies of the Project team that are relevant to the project are statistical thinking and statistical practice, supporting a deep understanding of quantitative aspects of performance improvement. On the other hand, the team’s ‘business’ experience is limited. Accordingly, the strategy has been to develop a statistical approach that is consistent with the innate business acumen, industry knowledge and entrepreneurial skills that potential SME clients are expected to possess. The first goal was to develop a diagnostic instrument that used a gap analysis to inform clients about how they currently used measurement to manage their enterprise, and hence provide a basis for identifying opportunities for performance measurement improvement. Particular emphasis was placed on ensuring that the approach was readily communicable, and unlikely to deter clients by being overly technical in its language and implementation.

The case studies were funded from the Government grant. In return, the SMEs agreed to fairly open use of the case study materials in future training and consulting, and to active promotion of the CSIRO methodology in various public seminars, articles and papers.

Case Study Program

The team for each case study comprised two scientists from the Project team plus the SME Project Manager. The presence of two scientists ensured that adequate attention was paid to exploring both content (measurement focus) and process (communication and information focus). Key aspects of the case study process design included:

- (i) initial contacts through third parties and networks associated with SMEs
- (ii) structured pre-assessment phase with all potential clients to ensure readiness

³ Industries represented to date include: pathology services, chemical manufacturing, consulting services, hospitals, home building, information technology, automotive components, sportswear manufacturing, food distribution, labour outsourcing, local government, restaurants, legal services

⁴ Locations ranged across three States of Australia and included both city and regional enterprises, with sizes from 6 to 400 people.

- (iii) introduction of potential clients to the process, including the framework
- (iv) examination of existing planning and reporting documentation
- (v) interviews with representatives of all levels of management
- (vi) feedback of assessment report to the management team
- (vii) selection of specific recommendations for improvement projects
- (viii) carrying out of selected improvements

The assessment diagnostic, which has been refined with experience, helps an enterprise to measure gaps at all levels of its performance measurement system, by providing a structured basis (framework) for evaluation and communication. The framework addresses all facets of organisational performance: as a business, as an organisation, and as a producer of value-added products and services for customers.

The diagnostic is designed to help an enterprise develop an understanding of its current status in the use of measurement and data for decision-making, including both planning and day-to-day control. The diagnostic is both broadly scoped (*i.e.* all functions and core processes) and in-depth (all senior managers, most middle managers, some supervisors and operators). The process examines the client's approach to measurement in the three basic *zones* of management: Strategic, Tactical Enterprise-level and Tactical Operational. Materials requested for study in advance of the assessment include copies of strategic, business and operational plans, annual and monthly reports, and job descriptions. The output from the diagnostic is a formal report to the management of the enterprise. The report details specific issues, identifies the evidence that brought each issue to light, and provides recommendations and potential benefits. Clients selected their preferred recommendations for specific improvement activities (in collaboration with CSIRO). Examples of the types of improvement activities jointly selected are given in the next section. Specific improvement choices are then implemented by the Project team in collaboration with the enterprise.

Early experience with two enterprises considered to be 'advanced' quality management practitioners provided challenging tests of the methodology. The approach and framework were validated by the clients' positive feedback concerning both the process and content.

As the case study program progressed, the Project team met on a regular basis to review the methodology leading to enhancements and refinements. The status of each case study has been maintained in an on-line database, updated monthly.

An analysis of the case study recommendations to clients provides the basis for the preliminary research findings. The framework was used to guide and structure the analysis and to provide structured feedback to the client. As each diagnostic was completed and analysed, a formal Commercial-in-Confidence assessment report was provided to each client.

Research Progress To Date

The case study program has now been running for 18 months and has included 20 enterprises, covering the manufacturing and service sectors. To date, nine have been completed and are being monitored, five have improvement activities proceeding, five have completed the diagnostic and reporting back steps, and one is waiting assessment. Eight general themes have emerged from the set of case studies with each theme providing opportunities for improvement of measurement.

- 1. Design of an overall performance measurement system.** Among the case study enterprises, only those enterprises with some track record in quality management had some structure to their measurement system. All enterprises were able to demonstrate some degree of financial measurement but this did not necessarily mean that the financial information was well structured. For example, a number of small enterprises did not analyse cash flows on a regular basis, relying on occasional ‘back of the envelope’ calculations. Financial summaries provided by accountants were supplied for mandatory reporting purposes rather than for financial management. Few of the measurement systems were structured to provide management with clearly differentiated strategic, tactical and operational information. Where structure existed, it tended to reflect simple aggregation rather than differing levels of management accountability. Only those enterprises with some history of quality management had any quantitative information about what their stakeholders thought of them, how their management system was working, and whether their products and services were satisfactory.

Sample Recommendation: Implementation of a structured measurement system will provide managers with an increased understanding of their business through both the discipline of development and the availability of relevant information.

- 2. Planning and decision-making based on information.** Again with the exception of those enterprises with some quality management history, the SMEs lacked formal planning, both strategic and business / operational. Where planning existed, it tended to be at the business / operational level and was not necessarily related to ongoing performance measures nor, generally, to explicit long-term goals. Performance indicators tended to be discrete events (e.g. ‘The training program will be completed by July 1’) rather than continuous measures. The quality-oriented enterprises were not necessarily good at ‘relevant’ measurement even when their planning was comparatively advanced.

Sample recommendation: Formal planning provides a forum for key people to develop a better understanding of the enterprises’ purpose and objectives. Developing an understanding of the enterprise’s capabilities to set and achieve targets, in response to objectives, provides a significant learning experience. The impact of lack of measurement structure will become clear to people.

- 3. Scope of information for decision-making.** For those SMEs having a measurement system, lack of understanding of the requirements of the system at the design stage meant that the system had limited scope and depth. Availability of data across functions and core processes is patchy, presumably reflecting historical needs and reporting. Some functional managers in medium enterprises were clearly lacking appropriate data to do their jobs.

Sample recommendation: Measurement needs to cover all the information necessary for planning and control (e.g. markets, customers, staff, products, services, in-process variables, suppliers, inventories, system capabilities, etc)

- 4. Design of the management system.** Small enterprises see little need for a formal approach to design of their management system. Medium enterprises realise the need for explicit management, but the system tends to grow reactively and spontaneously rather than as a result of planning and anticipation. It might be expected that ‘fixing’ the measurement

system would largely address the issues to do with the management system. For example, accountabilities and responsibilities for functions, teams and individuals would be aligned through the measurement-related work.

Sample recommendation: Identify and address those aspects of the management system required to promote development of the performance measurement structure.

- 5. Data collection.** The total amount of data available to the enterprise varies greatly. It may have some internal data (e.g. operational processes) but usually very little external (e.g. competitor's performance). Such data as are collected tend not to be operationally defined. In-process and supplier control standards are poorly defined and understood. Data quality is largely unknown. Measures are not checked for accuracy, repeatability and reproducibility. Management data tend to be collected after the fact, for trouble-shooting, rather than for prognostic purposes. Medium enterprises are likely to be collecting some operational data and aggregating them for management purposes. Enterprises with some quality management experience are likely to be superior in terms of data availability and reliability.

Sample recommendation: As recommendations 1 to 4 are carried out, implement measurement and start collecting data. Validate quality of data.

- 6. Data analysis.** SMEs tend to lack resources required for good analysis and interpretation of data: competencies, tools, techniques. Enterprises with some quality management experience are likely to have developed some limited capability to turn data into information. Effectiveness is likely to be limited by the previously identified measurement-related constraints.

Sample recommendation: Identify and develop resources appropriate to the ongoing needs of the enterprise for performance measurement and analysis.

- 7. Data presentation.** Data tend to be presented in simple tabular form. Financial data may include some comparisons (e.g. vs last month, last year) and may include some aggregation (e.g. YTD). Enterprises with quality management experience may have started to develop graphical presentation of the information in the data. Reports such as monthly summaries are likely to be very limited in their scope and depth. It is unlikely, except in enterprises with quality management experience, that any non-trivial statistical work will have been done in regard to data collection, analysis and presentation.

Sample recommendation: Implement appropriate presentation of data.

- 8. Review of the overall performance measurement system.** Except in enterprises with quality management experience, there is no structure for a review of measurement. Even within this group, measurement will only be reviewed as part of the bigger scheme of a general quality review. The fact that development of measurement is lagging may be noted but will only be acted upon in advanced quality-oriented enterprises that actually understand the implications of failure to adequately measure, analyse, report and act.

Sample recommendation: Implement mechanisms to ensure that the measurement system is itself subjected to regular assessment and review

Interim Conclusions

The CSIRO organisational performance measurement (OPM) methodology has demonstrated its relevance to a significant number of SMEs in its case study program. For all cases in which a need for performance measurement was identified by the SME's CEO, the methodology was considered effective in terms of outcomes and efficient in terms of resources, specifically time and cost. For those SMEs for which performance measurement was not an issue of specific interest to the CEO, the outputs of the assessment were considered relevant but secondary to more pressing issues. In all instances, the methodology was considered as resource-efficient and the results to be of interest. A Workshop showcasing many of the case studies in November 1997 received enthusiastic support from the SMEs' CEOs and senior managers, demonstrating their interest in the program. CEOs publicly expressed the view that the program added value to their businesses.

The case study program confirmed the benefits of using third parties and networks to gain access to appropriate SMEs. In particular, the program was successful in developing a joint approach through local Quality Networks such as the Illawarra Quality Improvement Network in NSW. Four very successful case studies (as judged both by the SME and by CSIRO) originated through this contact. A joint seminar in March 1998 at which these case studies were presented was well attended and generated considerable interest in the CSIRO program. The heightened awareness and level of interest will be used in mid-1998 to launch Phase 2 (alternative delivery options) of the program.

References

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