

SECTION II.8

CONDUCTING MEANINGFUL EVALUATION OF PRODUCTS AND PROCESSES

1. THE DIFFERENT SENSES OF EVALUATION RELEVANT TO A CONSTRUCTION PROJECT

There is a great deal of emphasis in many current construction sector initiatives on rigorous evaluation or performance assessment. These are indeed of great importance, but the terms are often used to refer to quite distinct areas of evaluation and purposes for evaluating, measuring or assessing.

Figure 1 below reminds us that in any complex activity, like a construction project, there are usually a number of different purposes and reasons for measuring and evaluating various aspects of what goes on. These need to be linked to relevant and viable evaluation indicators and mechanisms for collecting and analysing data, as a basis for providing feedback to stakeholders. The purposes stem from the key evaluation questions or issues which are posed by different stakeholders in the activity. To various extents, different stakeholders will be interested in evaluating activities because they wish to judge the value of what has been done, or learn from it in order to be more effective in the future.

Evaluating and Improving Performance

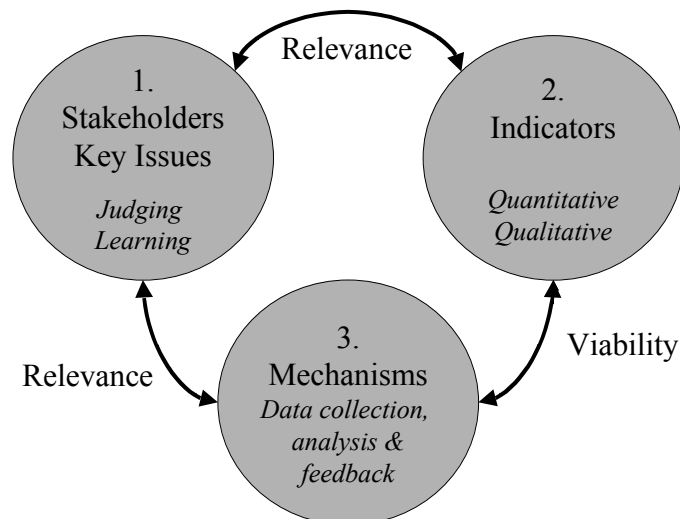


Figure 1

Dealing with the circle marked 1 in the figure first, in a BDB construction project, the typical key evaluation issues for the main stakeholders are likely to be something like the following:

- Clients need to establish they are getting a building that meets their aspirations in terms of its architectural character and its functional performance, and wants to be re-assured that the Prime Contractor is managing processes effectively
- Project level design consultants need to establish that their design concepts meet the client's architectural or design aspirations as well as the client's functional performance needs
- Prime Contractors and Cluster Leaders need to establish that what is being designed and constructed will perform as expected, because of their responsibility for delivering a building that meets the client's functional needs and with a TLC as predicted. They also need to understand how effective their project processes are, to improve them during the current project and make delivery predictable, and to learn for future projects
- Insurers providing cover need to establish that predictions of TLC are sound, particularly with respect to the costs of maintenance and component replacement
- Industry in general wants to learn about best practice.

These evaluation questions and issues in general concern both

- the performance of the construction *product*, i.e. the facility that is being produced, as it develops through various stages of design to construction and use
- the effectiveness of the *processes* used to design and deliver these products.

Once these evaluation purposes and issues have been established, turning to the circle marked 2 in Figure *x*, it is possible to identify a set of evaluation indicators that will provide evidence seen by the stakeholders as relevant to their key evaluation questions or issues. Depending on the nature of these questions, these indicators will generally include not only quantitative or numerical measures but also some qualitative assessments of the construction products or project processes. In Part III of this Handbook, Tools D1 and D2 spell out a range of indicators likely to be relevant to a BDB project. Indicators concerning construction products are likely to include:

- Functional performance:** at Design Strategy stage and for each subsequent stage of design development, designs must meet or exceed functional requirements expressed first in the Strategic Brief, and then in the Project Brief; post-handover, the building or facility itself must meet these functional requirements, including achieving at least a specified level of operational effectiveness
- Design character:** the architectural or design character of the building from the Design Strategy stage onwards must meet or exceed the client's level of aspiration for architectural interest or distinction, without adding unnecessary cost
- Cost of ownership:** delivery of a through-life cost (TLC) performance for the facility, in terms of a net present value of CAPEX and OPEX, improves on the through-life cost baseline. Up to handover, this will be assessed in terms of progressively refined predictions, and subsequently in terms of actual CAPEX and a combination of actual and predicted operating and maintenance costs.

Indicators relevant to project processes are likely to include:

- A) Comprehensive cost management:** costs and prices are optimised in parallel with design development, based on bottom-up understanding of labour, plant and materials content and the use of some form of continuous improvement to reduce waste in construction processes.
- B) Effective management of design activities:** including early identification of interfaces, production of information required schedules, and monitoring of progress against a programme.
- C) Effective management of construction activities:** including utilisation of labour, plant and materials.
- D) Application of industry norms in QA, H&S, CDM**

Tools D1 and D2 also describe in some detail how data relevant to these indicators can be collected during the course of a BDB project and utilised by the stakeholders to address their evaluation concerns

BENCHMARKING AND ASSESSING IMPROVEMENT FROM PROJECT TO PROJECT

Particularly since the publication of the Construction Task Force Report “Rethinking Construction” (1977), the construction sector has been concerned to find meaningful ways of setting performance benchmarks. The aim is to define standards which can be used to assess performance improvements from project to project, implementing the philosophy of continuous improvement in a co-ordinated way across the whole industry. Whilst the BDB approach emphasises developing a set of evaluation purposes and indicators to meet the specific purposes of each project, it is also important to relate these indicators to naturally recognised performance indicators or benchmarks. The achievements of BDB projects can then be assessed by some form of common standard and contribute to a general industry drive for performance improvements.

Currently, two widely used frameworks need to be considered as sources of performance indicators that may be relevant to the evaluation needs of a particular project. Use of indicators from either of these frameworks will permit comparison on performance data from a BDB project with data being collected on other projects that have also adopted either of these frameworks. They are:

- The construction Key Performance Indicators (KPIs) developed for the Construction Best Practice Programme (CBPP)
- The European Foundation for Quality Management (EFQM) Excellence Model.

The CBPP KPIs include eight measures of project performance:

- client satisfaction - product
- client satisfaction - service
- defects at handover
- safety

- predictability - cost
- predictability - time
- construction time
- construction cost

There are also two measures of individual company performance, to be assessed annually:

- Productivity, in terms of value added per employee
- Profitability, in terms of profits as a percentage of sales.

Detailed guidance on how to measure performance against the KPIs can be obtained from the CBPP.

The EFQM Excellence Model has been developed for assessing any kind of business activity from whichever sector. It identifies four areas for assessing the performance results of a company or an inter-organisational project:

- People results,
 - Customer results,
 - Society results,
- and overall,
- Key performance results.

It also identifies five kinds of “enablers” which are likely to determine the performance results achieved, but which can also usefully be assessed in their own right. These are:

- Leadership
- People
- Policy and strategy
- Partnerships and resources
- Processing

Figure y shows how the model relates these 9 areas for assessing, and the relative weight assigned to each one. The EFQM provides a detailed methodology for gathering and analysing data for each of the nine areas. This can be self-administered or carried out by external assessors. The EQFM maintains records of results by companies that have undergone assessments, which it makes available for those wishing to compare themselves against sector averages as a form of benchmarking.

The EQFM Excellence Model also provides a useful inclusive framework for summarising all the evaluation indicators chosen for a particular project. Figure z shows how the typical BDB project evaluation indicators set out in Tools D1 and D2 as well as the CBPP KPIs relate to the four “results” areas of the Excellence Model, and one of its “enabler” areas, i.e. processing.

Figure 2

The EFQM Excellence Model

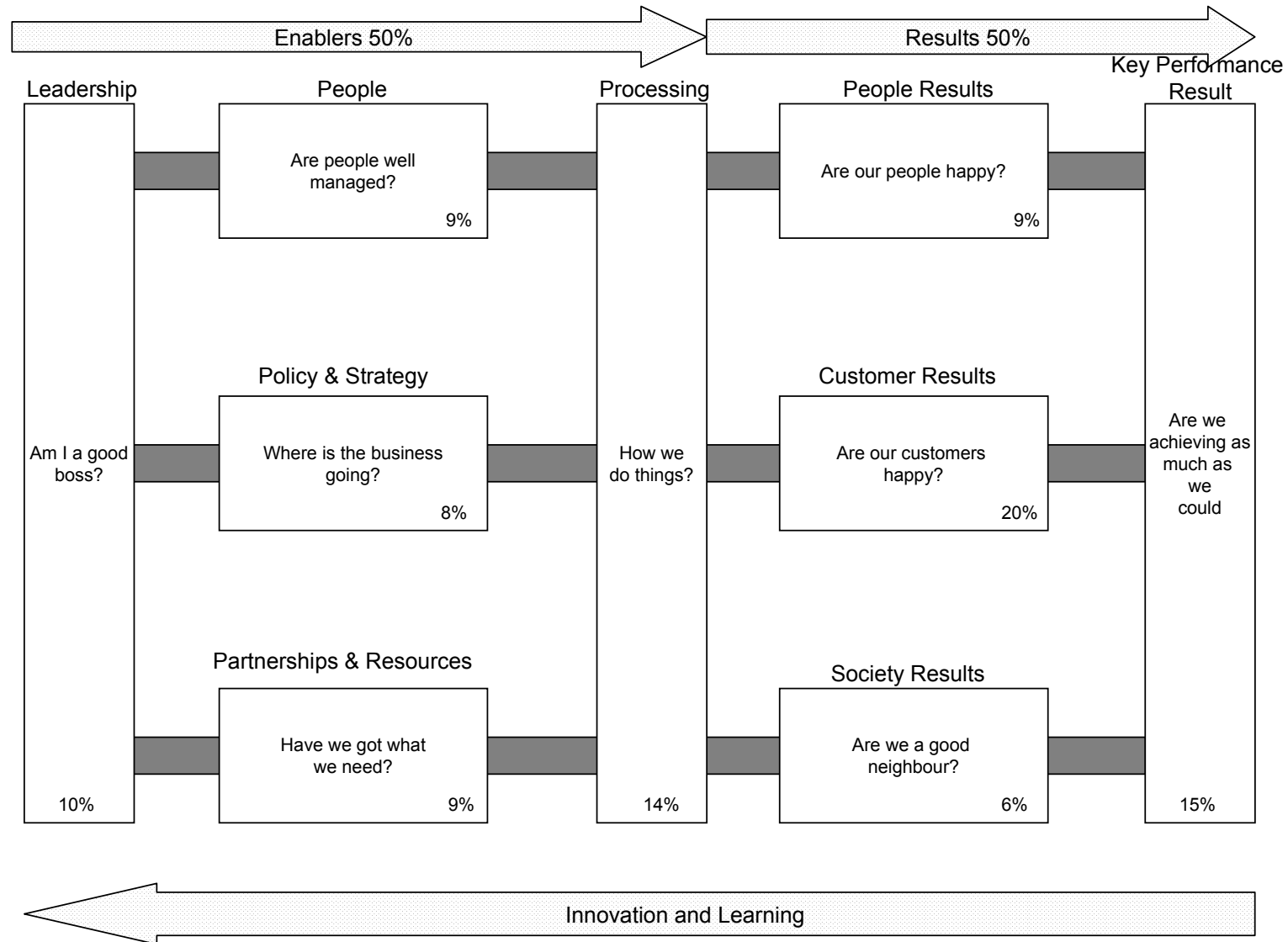
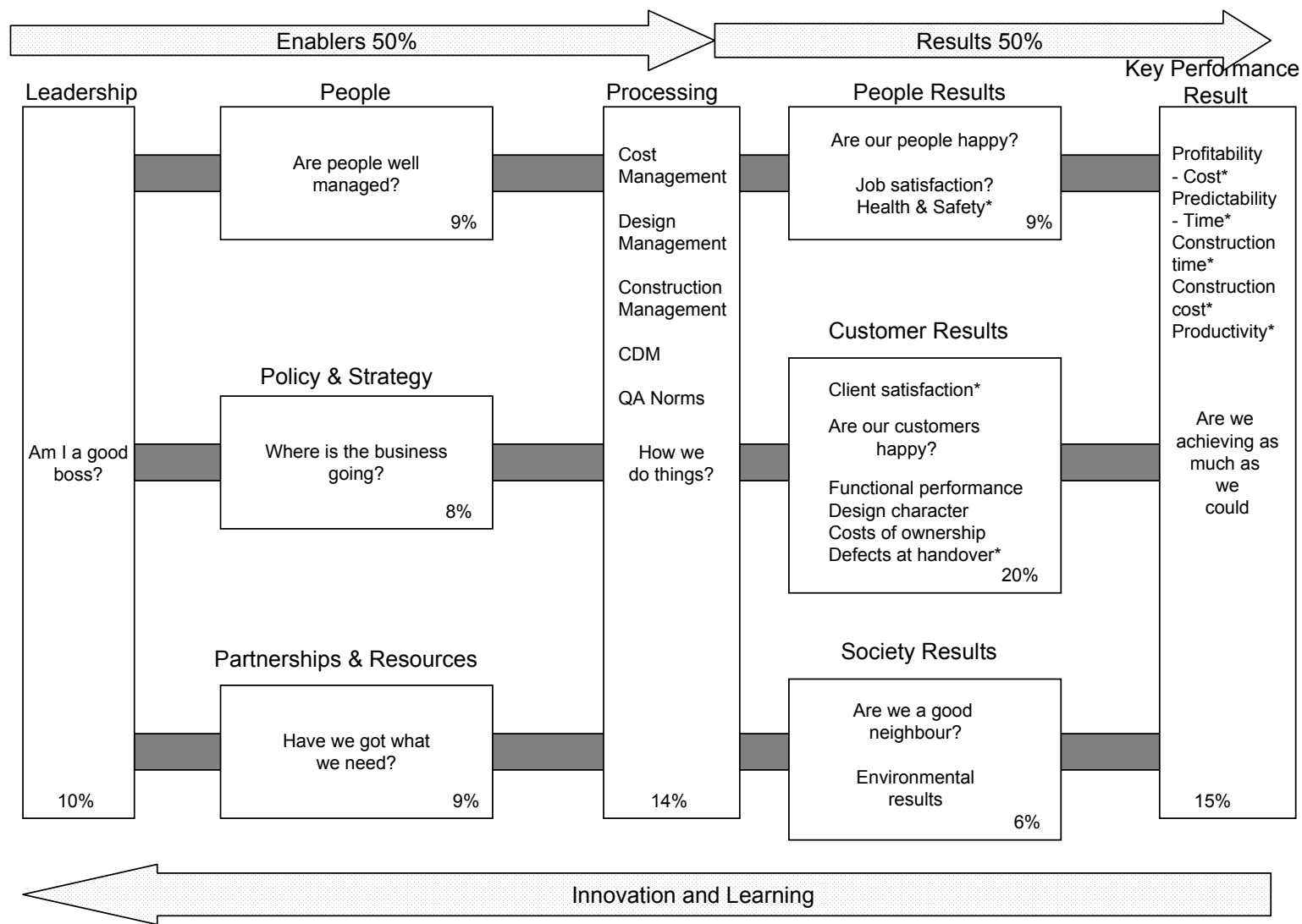


Figure 3 Summary of how possible project evaluation indicators relate to the EFQM Excellence Model



* CBPP KPI

Collaborating for the Built Environment (Be) – www.beonline.co.uk

Be is an independent body formed from a merger of the Reading Construction Forum and the Design Build Foundation in 2002. Its 100 member organisations come from the demand and supply chains of the ‘industry formerly known as construction’, ranging from public sector and private sector clients and developers to contractors, designers, consultants, specialists and suppliers. It leads research and implementation activities in support of a vision of delivering integrated built environment solutions through collaborative working.

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Collaborative Working Centre – www.collaborativeworking.co.uk

The Collaborative Working Centre of Be is a not-for-profit organisation set up from members of the team that facilitated *Building Down Barriers* to provide consultancy, training and other continuous improvement services to support the development and implementation of collaborative working.

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