

PROCESS BENCHMARKING IN DUBBO CITY COUNCIL

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Abstract

"Preconstruction Activities" was identified during a management review of the Works Services Branch of Dubbo City Council as an issue that manifested itself in the delivery of construction projects. The paper examines a process benchmarking exercise conducted across seven comparable councils to identify the best practices in preconstruction activities amongst them and present opportunities for process improvement.

The approach taken identified and ranked processes that can only be measured through qualitative indicators, such as the clarity of responsibility and feedback loops. It allowed each of the participants to better map and understand their own preconstruction activities process. The relative importance of key performance indicators and the participant's performance against them were ranked and improvement opportunities identified at minimum cost and inconvenience to the participants.

Key Words: preconstruction activities, process benchmarking, process improvement, benchmarking, construction, engineering

Introduction

An operational review was conducted of Dubbo City Council's (DCC) Works Services Branch (WSB) in early 2006. The brief required an evaluation of the WSB against seven key parameters. Its purpose was to identify barriers to efficient performance and overcome perceived operational deficiencies.

Resulting from this review an Operational Improvement Plan together with an Implementation Plan were developed, which contained in excess of 100 recommendations and associated actions that were ordered into an achievable timeframe.

The Improvement Plan identified that completion of designs and preconstruction activities was one of the major contributors to

uneven workflow and lack of defined quality of outputs

The Improvement Plan recommendations were broken down into 14 Improvement Areas, such as "Communication of Documented Procedures", "Defining Responsibilities" and "Whole of Project Planning".

One of the Improvement Areas, "Defining Competitiveness" contains recommendations relating to the conduct of benchmarking with other comparable organisations so as to monitor and measure changes in the WSB performance over time.

Client Perspective

It is appropriate to give the perspective of the client organisation resulting from the benchmarking project. In order to do this properly, it is necessary to explain a little of the background leading to the benchmarking project.

In 2006 the Works Services Branch was selected for the development of an improvement plan because it was felt within the organisation it could do better, both in terms of organisational procedures and the human resources culture of the Branch.

The process of the review was for Phil Hawley and his associate Steve O'Rourke to spend a few days observing and interviewing a good cross section of the Council organisation as well as external parties such as the NSW Roads & Traffic Authority (RTA). The purpose was to get a reasonable appreciation of how the Works Services Branch operated, and hence determine where improvements could be made.

The deliverable was an Improvement Plan. The resultant actions were progressively worked on over a period of about two years, to establish and embed the desired improvements.

The Plan was followed and one outcome was this benchmarking project. An identified shortcoming for improvement was effectively the project supply chain upstream of the WSB in the preparation of plans, specifications, and environmental approvals etc. before the physical start of projects on site. It was clear for instance that too many projects were being commenced without full documentation and preplanning work. The rush to get started on one project was sometimes driven by the completion of earlier projects, or simply because of the ever present skills shortage making the design section chronically understaffed. The result was that sometimes work had to be redone, designs were changed during construction, and there was always a backlog of extra work towards the end of the financial year, coupled with a drought at the beginning.

There had to be a better way, and this process benchmarking study aimed at finding

out how other people do their preconstruction planning, so that we could pick up their good ideas and apply them to our organisation. The other Councils who participated would also have benefitted, since the agreement we collectively made was that each Council was willing to share any findings with all the others.

Defining the Issue

One of the key parameters of the original Operational Improvement Plan brief was "Work Scheduling". It was found that many projects were commencing with inadequate or incomplete documentation and that there were work scheduling conflicts. Too many projects had to be completed in a rush near the end of the year and there was a drought of projects at the commencement of the year that saw the WSB working mostly on maintenance activities until projects were ready to proceed. This was largely because the workflow of the preconstruction phase was mostly based on annual funding allocations.

It became clear then that "Preconstruction Activities" was an issue that although relatively remote from the WSB activities was manifesting itself in the delivery of construction projects and the overall efficiency of the WSB and was therefore a high priority for investigation. It was also felt that this could be potentially an issue for other Councils and that DCC could benefit from learning about the Preconstruction Activities process as used by others.

Process Vs Performance Benchmarking

As a precursor to benchmarking, a paper (Hawley, 2007) was prepared for the consideration of the WSB that drew comparisons between the 2 major approaches to benchmarking, Process and Performance.

Performance benchmarking seeks to gauge performance e.g. production output of an organisation against other comparable organisations e.g. production outputs such as pothole patching or grading of gravel roads,

whereas process benchmarking looks at the one process and seeks to improve its robustness and efficiency for all participants.

There have been many attempts at performance benchmarking in local government over the last two decades. These have generally sought to benchmark parameters such as the cost or unit rate of output or rate of output per unit of input e.g. plant, labour and materials. However, there are difficulties in effectively establishing these benchmarks due to the large number of variables (inputs) that can influence outputs and in many cases these benchmarking projects have been abandoned due to the effort and expense involved in extracting useful and meaningful data.

Performance Benchmarking has been defined as the collection of (generally numerical) performance information and making comparisons with other compatible organisations.

It answers the question:

What are the most important performance yardsticks and where do we rank, compared with others in our industry and other analogous industries? (Benchmarking PLUS)

Process Benchmarking has been defined as the comparison of practices, procedures and performance, with specially selected benchmarking partners, studying one business process at a time.

It answers the question:

What is the best practice in this topic, where are the best practitioners and what can we learn from them? (Benchmarking PLUS)

The advantages of Process Benchmarking in this case are that it:

- Allows a wide range of performance indicators to be studied;
- Allows assessment of qualitative indicators;
- Protects the confidentiality of the partners if they so choose;
- Allows comparisons with competitors or partners;

- Assists in identifying priorities for improvement;
- Allows performance shortfalls to be clearly seen, and;
- Can use performance indicators at a variety of levels.

It was clear from this assessment that Process Benchmarking would be an effective way to understand, compare and improve the processes utilised by DCC and the partner councils.

Process Benchmarking Methodology

The benchmarking workshops were facilitated by Phil Hawley & Associates, who also undertook the data analysis and prepared the benchmarking report.

The steps involved in the benchmarking study were to:

1. select the benchmarking partners
2. define the process bounds
3. identify analysis parameters, including key performance indicators
4. identify stakeholders
5. workshop the process initially with the staff of DCC to “discover” and map the process
6. analyse the process
7. document the analysis findings

When these 5 steps were completed, they were then repeated with each of the other 6 benchmarking partners. The process belonging to each was documented and the data obtained subjected to a multi-criteria analysis to assess DCC’s comparative performance.

A report was then prepared in which the process belonging to each of the benchmarking partners was described, opportunities for process improvement were highlighted and strategies to integrate them were discussed.

A key component of process benchmarking is honesty and integrity. Each of the partner councils agreed that the results relating to

their particular process could be shared around the partners and a copy of the final report was accordingly provided to each of them.

This report was then available as a tool for each of the partners to review their own processes against those of the others and to identify and determine what improvements they may wish to make.

Bearing in mind that the benchmarking was undertaken on behalf of and at cost to DCC with the aim of improving their process, this was a good outcome that benefits all partners.

Benchmarking Partners

The six partner councils were Ballina Shire, Tamworth Regional, Orange City, Bathurst Regional, Wingecarribee Shire and Queanbeyan City. These are all regional councils within NSW.

The councils were chosen on the basis that they are identified in the Department of Local Government Comparative Data Report (DLG, 2007) as having similar populations and infrastructure requirements.

All but Ballina Shire are inland councils. Ballina was deliberately chosen as a representative coastal council with high development pressures to see if this had resulted in any particularly good preconstruction processes. It also has a substantially differing climate to the other councils which would impact design requirements and construction practices.

Bathurst and Orange Regional Councils have previously collaborated with DCC in performance benchmarking.

The workshops were designed to be multi-disciplinary, i.e. with representatives from each of the major stakeholders and not just the design engineers. Throughout the course of the various workshops attendees included designers, draftsmen, surveyors, town planners, development assessment engineers and finance staff, as well as construction engineers and departmental managers.

This enabled a wide cross-section of views to be obtained and highlighted interdependencies that were a revelation to some of the staff.

Key Performance Indicators

During the workshops participants completed a brief survey designed to ascertain both the importance they accorded to each of six key performance indicators (KPI) in the preconstruction process and an assessment of their council's performance against each of them. These indicators are:

- Time deviation from agreed preconstruction programme;
- Fitness for purpose (completeness, buildability, quality, consideration of impacts);
- Technical adequacy of design;
- Cost (preconstruction cost as a % of total project cost);
- Preconstruction cost performance relative to agreed budget, and;
- Feedback from Clients

Analysis of the KPIs showed when graphed that there was remarkable consistency in the shape of the data for all councils, despite individual council differences in the actual scores for importance and performance.

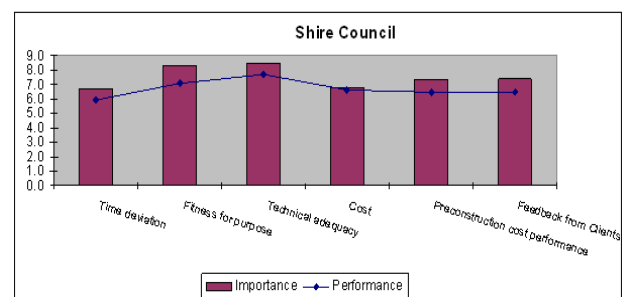


Figure 1: typical KPI analysis

With the exception of cost, participants ranked the importance of the KPIs higher than they did their performance against them, which is interesting given that only 1 of the participants actually knew the cost of its preconstruction activities with some certainty.

Data Analysis

The process mapping was recorded in both flowchart and tabular forms, the latter describing the flowchart elements with additional information including who is responsible, who actually actions the activity, the inputs and outputs for each step in the preconstruction process and comments.

A table of Identified Issues was then prepared together with relevant comments.

This data was then evaluated against five comparative indicators (CI), being;

- Understanding of client's requirements;
- Measurement and reporting of performance;
- Understanding of end user's requirements;
- Clarity of responsibilities/decision making processes, and;
- Effectiveness of process review system.

Each was rated against defined performance measures being Poor – Fair – Satisfactory – Good – Excellent.

The report included narrative and a rating against each of the CI for each of the councils.

A numeric scoring system was developed for the CI performance measures. This made it possible to conduct a mathematical assessment of the relative performance of individual councils against the performance criteria, an overall assessment of the performance of each of the councils, and also allowed the setting of performance benchmarks for all of the councils as well as for the six councils other than DCC. This then enabled a comparison of the performance of DCC against these benchmarks.

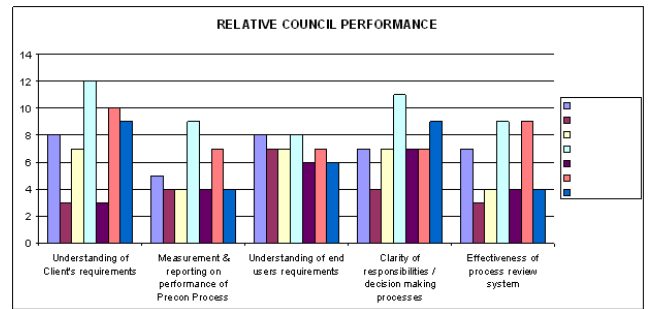


Figure 2: relative performance of all councils against the performance measures

A table was then produced that discussed the various CI used for the assessment and how DCC performed relative to other councils.

This table included opportunities for improvement, potential strategies, and approaches being used by other councils.

From Figure 3 below it can be seen that DCC generally performed at or just below the benchmark of all councils in the study.

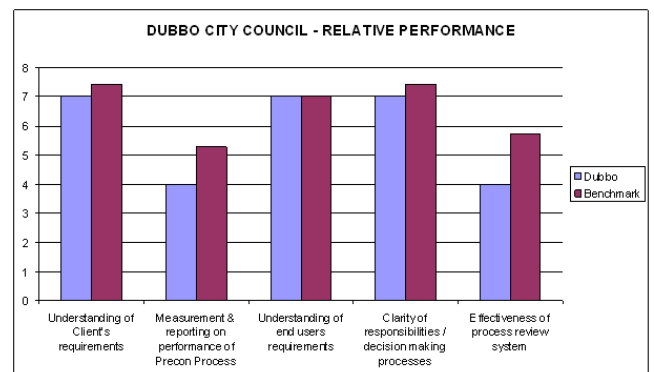


Figure 3: DCC – relative performance against all councils

Finally, a series of suggested improvement recommendations were produced against each CI, together with actions and responsibilities for their improvement.

General Observations

It was clear from the workshops that very few of the councils actually understood their own process well. None of them had the overall process well documented although in one case there were well documented procedures available to guide staff.

As the average experience level of Engineers within local government (and everywhere else) is falling, and with the current trend of high staff turnover, it is important to have documented procedures as in many cases there just isn't the experience to rely on. This situation will only be exacerbated with the retirement of the experienced "baby boomers" over the next several years.

Other recommended improvements included the development of a rolling project development programme around which the construction programme could be built, better specification of desired outcomes in design briefs, better definition of the preconstruction budget and allocation of responsibilities throughout the preconstruction phase, with a project manager appointed with specific accountability for the preconstruction phase of the project.

Despite the differences in structure and operating environments across the participating Councils, focussing on the process enabled meaningful measurements of performance to be determined.

Focussing on the process also meant that there was something meaningful that each of the participants could learn and use to improve their own processes, which after all was the point of the whole exercise.

Using experienced professionals external to any of the benchmarked organisations to undertake the benchmarking study isn't essential, but it assisted in delivering an unbiased and objective assessment across each of the participating councils.

Conclusion

Process benchmarking has been an effective tool for understanding the preconstruction process at DCC, and in assessing it against the process as used by comparable organisations. It has led to opportunities being identified to improve the process and actions being put in place to achieve them.

The use of external consultants to facilitate the process, although at cost to the host council, enabled the other participants to be involved with no expectation as to outcomes

and their only expense being staff time for the workshops. It would also have proved cost effective in the long term as the benchmarking was conducted without the need for teams from the various participants to be taken off-line to visit each other's premises.

All parties benefited from the exercise and a network has now been established that will enable other processes to be benchmarked in the future.

This benchmarking exercise although applied in a relatively defined area provides a template that can be extended throughout local government to improve public works processes for the betterment of our communities.

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Author Biography



Phil Hawley is the principal consultant for Phil Hawley & Associates, a practice he commenced in 1999 after a local government career spanning 30 years in various Sydney councils as well as in Wollongong and the Shoalhaven.

Phil's consulting experience includes project management, management consulting and he specialises in the management of solid waste.

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