BENCHMARKING:
BEST PRACTICE FOR SME OWNER/MANAGERS

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CONTENTS

INTRODUCTION  2
WHAT IS BENCHMARKING?  4
HOW BENCHMARKING EVOLVED  5
TYPES OF BENCHMARKING  6
WORLD CLASS BUSINESS TOOLS & TECHNIQUES  7
LEVEL 1: INTRODUCTION  8
LEVEL 1: PHYSICAL FLOW & PROCESS FLOW  9
   CASE STUDY: BURNSIDE AUTOCYL LTD  11
LEVEL 1: SET-UP TIME REDUCTION  12
LEVEL 1: BASIC MAINTENANCE  13
LEVEL 1: CHECK SHEETS  14
   CASE STUDY: KILLALA PRECISION COMPONENTS LTD  15
   CASE STUDY: C & C SPRINGS  17
LEVEL 1: RUN CHART  18
LEVEL 1: PEOPLE  20
LEVEL 1: TEAMS  21
   CASE STUDY: LAMPAÍ AN DAINGEAN TEO  22
   CASE STUDY: COLOURBOOKS LTD  24
LEVEL 2  26
LEVEL 3  27
APPENDIX 1: SELF ASSESSMENT QUESTIONNAIRE  28
ABOUT THE AUTHORS  31
INTRODUCTION

Benchmarking is a simple approach to help companies to diagnose objectively, efficiently and effectively their current situation and to take steps to improve performance.

This booklet combines the basics of benchmarking and World Class Business (WCB) tools and techniques in a proven, effective form so that small and medium-sized companies can quickly achieve significant performance improvements.

Using a medical analogy, benchmarking can be seen as the diagnosis and the WCB tools and techniques as the medicine. Benchmarking provides an objective look at your business with a view to identifying issues and areas requiring attention and improvement, as well as identifying areas where you may exhibit performance superior to others in your sector. The WCB tools and techniques provide the medicine actions that can be taken to help to solve problems and improve performance.
WHAT IS BENCHMARKING?

Benchmarking is a way of helping organisations to compare themselves against others, in order to learn from them. It thus provides a proven mechanism to help identify and prioritise areas for improvement within a business in an objective manner, as well as providing a simple way to measure progress over time. Benchmark results recorded today will facilitate measuring what progress has been made in a year's time.

In Europe, benchmarking is defined as: “…a continuous, systematic process for comparing performances of organisations, functions or processes against the ‘best in the world’, aiming not only to match those performance levels, but to exceed them.”

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A key strength of the benchmarking approach is that it helps managers to make decisions based on facts, rather than on opinion or intuition. Many management decisions are taken with incomplete data. Using benchmarking, managers can know the performance levels of their peers and competitors and what practices they use to achieve these performance levels.

A further strength is that benchmarking is a continuous, systematic process. Unless a business continues to monitor progress over time, all it will achieve by benchmarking once is a snapshot of how the business compares with others, at that time. By using benchmarking continuously, it can monitor progress – or maybe see none and use this as a stimulus to look for other means of improvement.

By using a systematic approach, the differences and similarities between business and organisations can be accommodated and normalised, ensuring comparability between companies, organisations, regions and countries, as well as repeatability over time. Thus, it is possible to compare and learn from companies across the world, as shown by the two leading small and medium-sized company benchmarking tools: Microscope and Benchmark Index.

To be a success, it is important to learn with, and from, others. Learning by example, by watching others, is one of the most basic forms of learning. From the days of our early childhood, we learned to walk, speak and ride a bicycle from others. This process of learning from others can often help us achieve difficult and demanding goals.

Some years ago, the Ford Motor Company developed a close relationship with Mazda of Japan. Ford had always been proud of its ability in terms of purchasing and materials acquisition and was regarded, by other Western companies, as the leader in these areas. But Ford staff were astounded to find that Mazda used 80% fewer staff per car to acquire parts and components - they were five times more efficient than Ford! Clearly, this revelation led to some serious soul-searching, analysis and improvement within Ford. In time, this practical benchmark exercise led to significant savings for Ford, and a new way of operating.

HOW BENCHMARKING EVOLVED

The evolution of benchmarking can be presented as a series of steps:

- **ANALYSIS OF COMPETING GOODS (REVERSE ENGINEERING):** During this first phase, benchmarking concentrated on comparison of characteristics, functionalities and performance of competing products. Initially, this was only at a technical level, but was later expanded to include competitive evaluation of products from a market perspective.
- **COMPETITIVE BENCHMARKING:** First developed by Rank Xerox when starting to analyse its own manufacturing costs (they found these were as high as its competitors’ sale prices). Now the emphasis is on process efficiency, not just product comparisons.
- **PROCESS BENCHMARKING:** During the 1980s, managers started to realise that they also could learn with organisations from other sectors (benchmarking out of the box). The amount of information and knowledge available amongst non-competing companies was found often to be higher than between competitors.
- **STRATEGIC BENCHMARKING:** A systematic process to evaluate alternative scenarios, to implement strategies and improve performance through the understanding and adaptation of successful strategies by the partners (competitors or not). It differs from process benchmarking because its scope is larger and deeper.
- **GLOBAL BENCHMARKING:** The next generation concept, that it includes and analyses cultural differences between companies at world-wide level. It takes also into account the conditions (legal, administrative, education, social, environment) that affect the localisation of companies.

Decisive factors for the spread of benchmarking also were the quality award models of the American Malcolm Baldridge National Quality Award (1988) and the European Quality Award (1992). In the quality models, comparisons with competitors and/or best practices are repeatedly requested. Thus benchmarking is part of the Quality Management concept, which is about making products or providing services “Quicker, Better and Cheaper … Together”.

The basic requirement to service customers’ needs quicker, better or cheaper is common to all organisations. Benchmarking may have its roots in industry but, today, it is being applied by all types of organisations and businesses - including Government departments and agencies, and non-profit organisations – to help their improvement processes. Although most benchmarking practitioners are companies or organisations employing over 1,000 people, benchmarking can, and should, also be applied to small and medium-sized enterprises because current best practice in benchmarking focuses on processes - when comparing processes, it is of little difference whether an organisation has 100 or 10,000 employees.
Tools and techniques that have been proven to work in Irish companies are presented in this booklet at three levels:

- **LEVEL 1**: Basic tools, proven to be both easy-to-use and effective in operation, which provide a foundation for all businesses, managers and employees, irrespective of sector or size of operation.

- **LEVEL 2**: Intermediate tools, suited to businesses that are interested in improving their performance, probably those interested in selling overseas, willing to face the challenge of open competition. These tools and techniques will help managers and staff to work together in identifying areas for improvement. They will help also to focus attention on future possibilities for superior performance.

- **LEVEL 3**: Advanced tools, identified as being those suited to the needs of businesses that need to perform at the highest international level. These tools are demanding of a business but are equally rewarding.

At each level, the appropriate type of benchmarking is presented and explained:

- **Self Assessment** is introduced at Level 1 – metrics for performance, based on Island of Ireland statistics, are available at www.irishbenchmarkingforum.com.
- **Facilitated Assessment** benchmarking is introduced at Level 2, along with some international insights into the leading benchmarking tools of Microscope (www.comparisoninternational.com) and BenchmarkIndex (www.benchmarkindex.com).
- **Process Benchmarking** is used at Level 3.

Each of these types of benchmarking can be useful and helpful to a small business:

- Self Assessment is very appropriate for companies starting out on the improvement process.
- Facilitated Assessment benchmarking is helpful to businesses when they have some experience in improving their operations. These businesses can, and do, benefit from the input of an objective viewpoint provided by an outside facilitator.
- Process benchmarking is often demanding of people, money and commitment and is therefore best suited to businesses when they are truly dedicated to improving performance and competing on the open global market.

Practical experience has shown that, if a business wants to perform at a high level, then the basics of good operational performance need to be secure, throughout all areas of the business, from first customer contact, through design, manufacturing, administration and finance to final servicing of the product.

**LOOK, SEE, UNDERSTAND, DO**

The tools and techniques of World Class Business are designed to help a business and its people to:

Look, See, Understand, Do.

Much of people’s time in business is spent handling the “day job”, doing what needs to be done. WCB techniques ask the question “What are we trying to achieve here?” and then help the questioner to see what is actually being done – the difference between the question and the answer is the gap that needs to be bridged.

It is not enough to improve things once. Innovation and change needs to be seen as a continuous effort. The challenge is to move a business operation up the Spiral of Performance (Figure 2), looking, seeing and understanding processes before acting to improve them – time after time. As an organisation moves up the spiral, it builds the capability to address ever more important and demanding issues and challenges. It moves to be truly World Class and able to compete on the highest playing fields.

**FIGURE 2: SPIRAL OF PERFORMANCE**
Self Assessment is the easiest and simplest form of benchmarking. It is the first step in a business’ diagnostic of the performance level of a business in an effort to prioritise improvement activities. This type of benchmarking is easy to do. All that is needed are your own performance figures and those of your competitors or sectoral averages/norms. For non-quantitative areas, one can answer a set of questions on the practices employed in the business.

The difficulty with Self Assessment is the “self” part. How many people can recognise their own failings? International experience shows that, where companies use Self Assessment, they tend to be overly positive in how they see their own performance. However, as a means to find ways to improve a business, Self Assessment can be a useful first step on the road to improved performance.

How do materials move through the production department? How many people work on each piece or job? How many different work areas does each job pass through? Why? These fundamental questions can be applied as easily to the office area as the manufacturing floor – the only real difference is usually found in the distances travelled. These questions suggest the need for Physical Flow analysis, which, in simple terms, means looking at the physical movement of things within an operation.

The first step in using the tool is to sketch the general layout of the area under investigation. The second step is to sketch the physical movements of materials through the process. These sketches are known as “spaghetti diagrams”, for obvious reasons. Most operations are laid out in an efficient way when they are first installed. However, over time, and with changes of equipment or new people arriving, the physical layout of manufacturing and office areas can move away from the optimum.

A feature of most spaghetti diagrams is that, at the end of each movement line, there is a build-up of work-in-progress (WIP) – a bundle of invoices to be processed, a batch of orders to be entered or a box of parts to be machined. In any case, there is a build up, which provides the people working there with a degree of comfort that they have work to do. However, these piles of WIP are costly, in terms of time to process jobs as well as in terms of cash.

The key objective of the physical process flow exercise is to find ways to remove, or at least reduce, movements from the operation. A useful measure in an industrial environment can be how many tonne-kilometres of material are moved around the factory each year? In the office environment, how many kilometres is paper moved each year? Obviously, no customer willingly pays for these movements, so who is paying for them? The business is, because it is willingly pays for these movements, so who is paying for them? The business is, because it is willing to do the job. Back in the 1950s and 1960s, most managers came from the shop floor, from having “done the job”. They understood the details of the work their staff were doing because they had done it themselves. Nowadays, however, managers frequently do not have the practical experience held by their staff – we have come to rely more on education rather than experience.

This knowledge gap is important, if you are trying to improve a process. Before you can identify areas for improvement, you need to know exactly what is happening. This is an ideal task for a newly-created team, which can map the process in their own areas and, together, build a complete map of the process. At this stage, this exercise should be carried out without judging whether a particular step is adding value – the aim is to capture the true facts of what is happening in the operation.
In this particular business, the joinery operation had grown over the years, new machines and new processes had been added, often wherever a small bit of space could be found. The business was under extreme pressure to produce more product, as its customers were very happy with the high quality. However, the layout had come to impose severe restrictions on the business’ ability to produce. The physical and process flow diagrams immediately made clear wastes that could, and needed to, be tackled and removed. Working as a team of owner-manager, production manager, lead hand and machine operators, the joinery devised a revised layout, shown in Figure 5.

The second part of the exercise is to determine the theoretical optimum process – what should be happening. The team can brainstorm this part of the exercise.

The real challenge is to make the actual process used as close as possible to the theoretical optimum. Once the actual steps of the process have been captured and the theoretical optimum has been determined, the team can move towards identifying and reducing the wasteful, non-value-added steps.

The close links between the Physical Flow and Process Flow tools should be clear now. Together, they can help highlight improvement opportunities.

The new layout allowed the joinery to use the feed-out of one machine as the feed-in to the next. Movements of people and materials was significantly reduced – and output increased.

This arrangement, where activity for a given product or component is centred in a single area, is known as Cellular Manufacturing, since machines are organised in cells and work pieces flow naturally from one machine to the next, with the objective of completing a finished part or product within each cell.

Burnside is a 25-year-old engineering company involved in the production of hydraulic cylinders, primarily for the automotive sector, with its main customer base in Germany.

Two years ago, prior to the implementation of WCB, the company suffered from high raw material stock levels, a traditional clock in time recording system, WIP stocks booked through only one location, and all staff were hired by the managing director.

The management structure is now flat, with team leaders reporting directly to the managing director and being responsible for their own customer base. Team leaders take orders directly from customers and deal with issues and problems as they arise. There is no production manager in the business. Cell leaders (all former operators) have developed to the point where they are all equivalent to production managers in their own areas, with the power to hire staff as needed. The managing director has worked hard to develop the abilities he saw in his staff and has created a young vibrant management team.

At the start of its World Class process, Burnside had very little benchmarking in place at cell level. Now, staff use charts and check sheets in the cells to monitor progress and to identify key areas requiring improvement. Burnside has also widened its search for best practice using benchmarking:

- All staff on the production floor have participated in visits to Irish factories, some customers, suppliers and outside industry.
- Burnside now benchmarks with a large US company, in Texas. Visits to and from the US have led to a strategic alliance with them, with both sides learning from each other.
- Future plans include swapping people to build capabilities in both businesses.

The benefits of the process to the company were:

- Raw materials reduced by 50%.
- WIP down by 25%.
- WIP accuracy in cells up by 50%.
- Stock turnover up from 3 times a year to 5.
- Stock now booked to cells.
- Have 5 cell leaders, who run cells as separate businesses.
- Staff hired, trained and fired by cell leaders.
- People check in, not using time clocks, with the cell leader recording times and costs.

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The close links between the Physical Flow and Process Flow tools should be clear now. Together, they can help highlight improvement opportunities.
LEVEL 1: SET-UP TIME REDUCTION

In order to process single unit orders, change-over from one job to another must be accomplished with a minimum of fuss, just as one switches from a wordprocessor to a spreadsheet on a PC. However, in a manufacturing environment, change-over is often time-consuming and always causes production. Thus, it is often easier for production staff to produce long runs of the same item, input them into storage and draw from the stores as needed.

Although convenient for production staff, the downside to this approach is that it is very demanding of production time and invariably leads to long lead times, high levels of stock and, often, to obsolescence of that stock due to market changes or to waste due to deterioration of products while in storage. In addition, the marketplace increasingly demands greater variety, which increases the need to be able to produce small quantities – even individual products.

To meet these demands, set-up times must be reduced to the level where time lost on change-over is negligible.

The task of reducing set-up time can be tackled like other WCB tasks. First, it is essential to know what is actually involved in the change-over before beginning to find ways of improving it. Recording on video what happens during a change-over provides a permanent record, ensuring that all steps in the process are captured.

The fundamentals of reducing set-up time are based on the identification of internal and external tasks (see Figure 6).

- **INTERNAL TASKS**: Those that can only be performed when the machine or process is stopped - replacement of tooling, moulds, etc.
- **EXTERNAL TASKS**: Those that can be performed while the machine is still running - getting parts and tools ready, locating materials, initial settings, general preparations, etc.

**Figure 6: Change-over time**

1. Analyse the set-up and identify what steps are **internal** and what are **external**.
2. Move work from being **internal** to being **external**.
3. Reduce, simplify and remove **internal** work. Improve attachment methods, reduce settings, reduce parts...
4. Reduce, simplify and remove **external** steps, as above. Reducing overall set-up time.

Once what happens during the change-over has been recorded, the set-up improvement team can identify wastes and areas for improvement. The use of standardised tooling, quick release mechanical and electrical connectors, standardised datum points and many other points of detailing can have a significant impact in reducing overall set-up-time. Industry journals and sales brochures for the latest machinery can often be used to help the team see new ways of achieving their objective.

When a better, shorter and simpler way of performing the set-up has been arrived at, record it. Train all relevant staff on the new way of working and ensure that this approach is followed.

But remember, the quickest and best change-over, and the easiest one to perform, is the set-up that is not done at all. If product design can remove the need for a component, then it is not necessary to make it or change-over from making another part to make it. Or, if planning can plan efficiently, and sales can sell a relatively standardised product range, then the need for change-overs is minimised.

LEVEL 1: BASIC MAINTENANCE

How can we expect machines or processes to produce high quality goods as required, if the production machinery is not maintained properly?

The Total Productive Maintenance (TPM) concept takes the pragmatic approach that, to make good products, one needs to be able to rely on one’s machines. When you start a job, you want to be able to finish it, without having to fix a machine during the job.

TPM uses check sheets and run charts to help identify where, and why, machines break down. The next step is to use teams to develop the machines to the point where they no longer break down. Since the cost/benefit of being able to run a shift unattended is high it is worth having machines capable of running, unattended, in unit factories, where materials are fed in at one end and products arrive out the other. And much of the effort required to achieve this is basic, using well-proven ideas and concepts.

A striking feature of walking through Japanese factories is that much of their equipment is 10 to 20 years old, but very well maintained and sporting much of the latest measuring equipment, digital controls and early warning systems, all retrofitted. The effort and the cash have gone into developing capability rather than buying shiny new machines.

After operators have been trained in the basics of maintenance, it is often useful to train maintenance staff in the operation of machines. Through this exercise, both teams can understand the challenges facing the other and can begin to develop innovative solutions to problems.

There are a number of types of maintenance:

- **Fixed time maintenance**
- **Condition-based maintenance**
- **Opportunity maintenance**
- **Operate to failure**
- **Design out maintenance**.

Which type of maintenance approach a business chooses to follow will depend on its particular circumstances, what type of equipment it has and what resources it can allocate to the maintenance area. At Level 1 of ABC, we focus on fixed time maintenance.

**Fixed time maintenance**

As the name implies, this maintenance takes place based on time. Daily, weekly, monthly or yearly checks, adjustments and replacements are made, to ensure that the machine performs at its optimum. Parts are changed before they reach the end of their service life. By doing this, there is a high probability that the machine will operate faultlessly between services. The time between changing components and parts is based on design information and experience. The system is best known in the automotive world where oil, filters and plugs are changed according to time or mileage criteria.
CASE STUDY: KILLALA PRECISION COMPONENTS LTD

Killala Precision Components Limited is an industrial sub-contract machining company. Formed in 1981, it now occupies a 20,000 sq. ft. plant and employs 60 staff. It produces high quality precision-turned components in many different materials and has shown a continuous record of growth and achievement.

It operates up to 40 machines, with management reports providing high levels of information on individual machine efficiencies. Management identified the need to increase productivity in the face of increasing competition.

CHECK SHEETS

The company introduced check sheets to capture information that could be used to reduce losses and improve efficiency. The check sheets allowed operators and management to identify the root causes of losses. Management, machine operators, maintenance and engineering design staff then moved to address the issues identified. Productivity increased significantly as a result.

LEVEL 1: CHECK SHEETS

We need to improve. We want to improve. What is holding us back? If one asks staff for the cause of lost production, or delays in providing service to customers, or the reasons for defects, quite often the reason given is not, in fact, the real reason for poor performance. It is an “opinion”, not a “fact”.

The Check Sheet is one of the simplest quality tools – and one of the most powerful. When faced with the task of improving a process, the challenge is often in knowing what is actually happening as the process runs – what are the facts of the situation rather than people’s opinions, since opinions and instinct can be wrong. The check sheet provides a simple way to record the facts of the situation.

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If faced with improving a sales operation, some basic facts are needed:
- Who is buying what?
- When?
- In what quantities?
- From which sales people?

If one’s focus is on improving an administration group’s effectiveness and efficiency, it is probably important to know:
- Who is accurate in their work and who is not?
- What types of interruptions occur?
- At what frequency?

If one’s focus is on the performance of a manufacturing area, it may be necessary to know:
- Why machines stop?
- How often does this happen?
- How long do the interruptions last?

These and many other questions are easily captured using check sheets. A check sheet captures facts without imposing a significant workload, by recording, using a simple mark on the sheet, of the number and types of errors in a process or in a product.

When developing a check sheet, consider:
- What is to be recorded?
- Over what time period?
- Who will record the data?
- Who will act on the data to improve the process?

The fourth step is probably the most important. If time and energy are spent in capturing and recording data, then action to improve the process afterwards is necessary. Otherwise, the exercise is simply an additional waste.

As an example, let’s look at an administration case in Figure 7, where a check sheet captures data on the process.

**FIGURE 7: ADMINISTRATION CHECK SHEET**

<table>
<thead>
<tr>
<th>Source of Work</th>
<th>Telephone</th>
<th>Visitor</th>
<th>E-mail</th>
<th>New Query</th>
<th>Rework</th>
<th>Other</th>
<th>Person</th>
<th>Date</th>
</tr>
</thead>
</table>

By looking at the check sheets for all staff in the group, one can determine whether there are problems with telephone-answering or the handling of visitors. Any improvements would then be based on facts.

Experience has shown that six to seven items per check sheet – one of which should be “Other” – is an optimum. Obviously, if “Other” has many marks recorded against it, the list needs to be developed further to capture more useful information.

In analysing the data from a check sheet, do not assume that, because something happens most frequently, it is merely the most frequent and certainly, because of that, deserving of attention. But one must gauge the impact of each fault to determine what, in fact, are the key issues identified by the check sheet.

As part of the company’s WCB process, a simple check sheet was developed, to capture data from the process without asking the operators to spend time writing (see Figure 8).

**FIGURE 8: SAMPLE CHECK SHEET**

<table>
<thead>
<tr>
<th>Check Sheet</th>
<th>Misfeed</th>
<th>Cut-Off</th>
<th>Footgap</th>
<th>Straightener</th>
<th>Burr</th>
<th>Angle</th>
<th>Length</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The tick marks represent each time the problem occurred. After a week’s use, the data recorded was examined by the team, to see whether it was a true picture of the types of problems they had been encountering.

Remembering the point made earlier about check sheet analysis, the team checked the level of impact of each occurrence by looking at the time lost for each problem, and entered this information into its analysis of the check sheet, as shown in Figure 9.

**FIGURE 9: ANALYSIS OF CHECK SHEET DATA 1**

<table>
<thead>
<tr>
<th>Fault</th>
<th>No. of Occurrences</th>
<th>Time Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misfeed</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Cut-Off</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Footgap</td>
<td>18</td>
<td>52</td>
</tr>
<tr>
<td>Straightener</td>
<td>03</td>
<td>90</td>
</tr>
<tr>
<td>Burr</td>
<td>04</td>
<td>130</td>
</tr>
<tr>
<td>Angle</td>
<td>02</td>
<td>42</td>
</tr>
<tr>
<td>Length</td>
<td>03</td>
<td>17</td>
</tr>
<tr>
<td>Other</td>
<td>01</td>
<td>05</td>
</tr>
</tbody>
</table>

When analysing check sheets, one tends to rank the data in terms of number of occurrences. One should also look at the impact of individual occurrences, as in Figure 10.

**FIGURE 10: ANALYSIS OF CHECK SHEET DATA 2**

<table>
<thead>
<tr>
<th>Ordered by Time Lost:</th>
<th>Time Lost</th>
<th>Ordered by Number of Occurrences:</th>
<th>No. of Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burr</td>
<td>130</td>
<td>Footgap</td>
<td>18</td>
</tr>
<tr>
<td>Straightener</td>
<td>90</td>
<td>Cut-Off</td>
<td>11</td>
</tr>
<tr>
<td>Footgap</td>
<td>52</td>
<td>Misfeed</td>
<td>10</td>
</tr>
<tr>
<td>Misfeed</td>
<td>50</td>
<td>Burr</td>
<td>4</td>
</tr>
<tr>
<td>Angle</td>
<td>42</td>
<td>Straightener</td>
<td>3</td>
</tr>
<tr>
<td>Cut-Off</td>
<td>20</td>
<td>Length</td>
<td>3</td>
</tr>
<tr>
<td>Length</td>
<td>17</td>
<td>Angle</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>Other</td>
<td>1</td>
</tr>
</tbody>
</table>

If the company had simply ordered the data by occurrence, it would have failed to prioritise the “Burr” issue for attention. Care needs to be exercised when using these tools to ensure that people “see” what they are “looking” at when trying to “understand” the data, and what the data is saying about the process.

**CASE STUDY: C & C SPRINGS**

The company, based in Walkinstown, Dublin, had entered the computer business, using its expertise in spring materials and tooling design to make the spring steel shutters of 3.5” floppy disks.

The process was being run over two shifts and operators were using a diary as a logbook to capture information on problems encountered. The supervisor checked the diary each morning but tended to make little use of the data recorded. The operators and toolmakers, skilled people, tended to focus on fire-fighting and responding to problems as they arose.

As part of the company’s WCB process, a simple check sheet was developed to capture data from the process without asking the operators to spend time writing (see Figure 8).

**FIGURE 7: ADMINISTRATION CHECK SHEET**

<table>
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</table>

The company, based in Walkinstown, Dublin, had entered the computer business, using its expertise in spring materials and tooling design to make the spring steel shutters of 3.5” floppy disks.
LEVEL 1: RUN CHART

The Run Chart presents trends over time. If an improvement process is underway, one hopes to see improvement over time, either in increased productivity or sales or in reduced defects and complaints.

Many companies do not record their performance over time - in effect, every day is another day in the mines for their staff. There is no means of knowing whether their performance is getting better, staying the same, or even deteriorating.

Run charts can be used to monitor performance on areas that are important to the business. If customers value on-time deliveries, then use a run chart to measure performance in this key area. If customers value response time, or accuracy in paperwork, performance in these areas should be measured over time. These measures should then be made available to the people who can affect change.

There is no harm in letting people see what they have done - and what they have to do.

DENIS KEEGAN

With the simple inclusion of a target line, the run chart is not only a record of what performance has been achieved but also a challenge to all to reach the target. It is now a simple, but effective, motivator.

A run chart displays trends over time. It can be difficult to remember last week's performance, never mind performance two months ago. The run chart is most often used to record sales levels, production outputs or complaints received but can be used for any measure that can change over time. As an exercise, see whether you can visualise what the numbers in Figure 11 show.

FIGURE 11: MILES PER GALLON - TABLE

<table>
<thead>
<tr>
<th>Fill No</th>
<th>Date</th>
<th>Km Sum</th>
<th>Litres</th>
<th>Station</th>
<th>£</th>
<th>MPG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30-Oct</td>
<td>21.7</td>
<td>ST</td>
<td></td>
<td></td>
<td>11.98</td>
</tr>
<tr>
<td>2</td>
<td>02-Nov</td>
<td>20.8</td>
<td>E</td>
<td>11.42</td>
<td>37.8</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>05-Nov</td>
<td>21.0</td>
<td>T</td>
<td>12.53</td>
<td>38.5</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>09-Nov</td>
<td>20.2</td>
<td>ST</td>
<td>11.77</td>
<td>35.2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>11-Nov</td>
<td>19.2</td>
<td>E</td>
<td>11.36</td>
<td>39.5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>14-Nov</td>
<td>20.8</td>
<td>ST</td>
<td>12.67</td>
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<tr>
<td>7</td>
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<td>21.6</td>
<td>E</td>
<td>11.57</td>
<td>29.5</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>25-Nov</td>
<td>20.0</td>
<td>T</td>
<td>11.99</td>
<td>41.8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>03-Dec</td>
<td>19.5</td>
<td>SH</td>
<td>11.51</td>
<td>35.6</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>04-Dec</td>
<td>16.4</td>
<td>E</td>
<td>10.14</td>
<td>43.7</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>04-Dec</td>
<td>21.8</td>
<td>E</td>
<td>12.08</td>
<td>44.3</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>09-Dec</td>
<td>20.7</td>
<td>ST</td>
<td>12.05</td>
<td>37.3</td>
<td></td>
</tr>
<tr>
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<td>17-Dec</td>
<td>21.6</td>
<td>E</td>
<td>11.72</td>
<td>35.2</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>22-Dec</td>
<td>19.4</td>
<td>ST</td>
<td>12.56</td>
<td>29.0</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>02-Feb</td>
<td>20.9</td>
<td>E</td>
<td>11.26</td>
<td>30.1</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>03-Feb</td>
<td>20.3</td>
<td>E</td>
<td>10.77</td>
<td>40.7</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>03-Mar</td>
<td>20.0</td>
<td>ST</td>
<td>10.55</td>
<td>29.6</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>16-Mar</td>
<td>19.3</td>
<td>E</td>
<td>10.38</td>
<td>32.0</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>23-Mar</td>
<td>20.2</td>
<td>E</td>
<td>10.98</td>
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<tr>
<td>20</td>
<td>25-Mar</td>
<td>19.7</td>
<td>SH</td>
<td>10.78</td>
<td>38.7</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>13-Apr</td>
<td>21.0</td>
<td>E</td>
<td>12.40</td>
<td>32.8</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>15-Apr</td>
<td>20.0</td>
<td>T</td>
<td>12.07</td>
<td>36.7</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>15-Apr</td>
<td>19.4</td>
<td>T</td>
<td>11.07</td>
<td>39.6</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>16-Apr</td>
<td>19.8</td>
<td>M</td>
<td>10.90</td>
<td>36.0</td>
<td></td>
</tr>
</tbody>
</table>

Then, look at the same data presented in a run chart, in Figure 12. Now, changes in performance can be seen clearly. If performance deteriorates, then questions can be asked to find out why.

On a more positive note, if people have been working to improve a process, they will be able to see an improvement in performance on the run chart. This can act as a very positive reinforcement for the team.

FIGURE 12: MILES PER GALLON - RUN CHART 1

The run chart can be further developed as a challenge to the team. The addition of a target line will give the team an objective, and also the means to measure progress towards this objective, as in Figure 13.

FIGURE 13: MILES PER GALLON - RUN CHART 2

Using run charts with target lines, and highlighting key actions taken to secure improvement, may also help to develop an innovation culture in the business. The ever present challenge is to ask what can be done next to bridge the gap between present and potential performance.
LEVEL 1: PEOPLE

Tools and techniques are important but, if they are to benefit an operation, they need to be used and implemented by people. Business depends on people. People work the systems, processes and machines that deliver customer needs. The skills, experiences and expertise of the people in a business will define the quality of product offering. But how can a business develop its people to allow it to operate at the highest levels of performance?

It can be very difficult to identify individuals’ abilities objectively. The WCB approach provides a tool known as the “Skills Register” to help with this process. An example of a skills register for administration and customer support is presented in Figure 14.

FIGURE 14: SKILLS REGISTER
Job Area: Administration and Customer Support

<table>
<thead>
<tr>
<th>Job Details</th>
<th>Telephone</th>
<th>Computer Skills</th>
<th>Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paddy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>John</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each staff member has a four-box square under each of the key job skill areas. The skill level of each staff member is represented by the number of filled boxes. The standard interpretation of the skills register is shown in Figure 15.

FIGURE 15: INTERPRETATION OF SKILLS REGISTER

- **NO BOXES:** Staff-member is untrained or unskilled.
- **ONE BOX:** A basic introduction to the topic has been given.
- **TWO BOXES:** Staff-member is able to perform the task, under supervision and with support.
- **THREE BOXES:** Staff-member is largely capable of performing the task, although they may require some support and light supervision.
- **FOUR BOXES:** Staff-member is fully capable.

The system is very simple: gaps in skills are easily seen and recognised and can be addressed.

The skills register is often used on an individual basis as part of personal development plans and can also be used in a more general way where the register is displayed in team meeting areas. This approach can be helpful where team members realise they have gaps in their skills that they can take training for.

LEVEL 1: TEAMS

The WCB approach places an emphasis on teams and team-working, which is essential in today’s highly competitive working environment, where the power of a well-functioning team can be the difference between success and failure.

Most companies can afford to buy or lease good equipment and machines. The difference between successful and unsuccessful companies often lies in how well they use these assets. The people working in a business or organisation add the value to its products or services. In the developing knowledge-based economic environment, those businesses that harness the potential of their people will thrive, those that do not will find it difficult to survive.

We know this harnessing of individuals as building teams. There are clear and effective ways of bringing people together, to work together, for a common objective. This is the central point in relation to team building – people need to have a common objective, a reason to work as a team, a goal. One can often see volunteers doing work, for free, that they would never do if they were being paid, because they are working to achieve an objective, a shared goal.
Louis Mulcahy, initially operating from premises in Dublin, founded the company in 1974. He subsequently moved to Ballyferriter, Co Kerry, from where he continued to grow the business.

The business has managed to retain its craft ethos, despite its growth. Its products are hand-thrown with a particular emphasis on large pieces. These are particularly difficult to master and the operation has earned a good reputation for its expertise in this area. The company employed 35 staff at the start of its World Class initiative, and now employs over 60, with both throwing and sales operations on the one site.

KEY ISSUES
The level of formal supervisory skill and training within the business was low, and certainly not at a self-sustaining level. The level of systems in both administration and manufacturing areas was not sufficient to manage the business without the advantage of years of experience. And finally, the need existed to augment the management team with complementary skills to the owner/manager.

The starting point for this stage of the company's development efforts was to look at current and future management structures, with a view to identifying key staff for key positions. It became clear that:

- There were clear gaps in the structure, in particular at the administration and production management levels
- The supervisory level was untrained and had not had the opportunity to develop capability in this area.

In addition to these structural difficulties, the management clearly identified the need to continue to develop the business’ manufacturing capability as well as its sales efforts.

STRUCTURAL DEVELOPMENT
Louis Mulcahy developed a list of priorities or action points to form the basis for his action plan. An off-site two-day session was arranged for the supervisory and senior level of management. At this session, the strategic plan developed by the MD was presented for discussion.

Three clear discussion themes were presented to the supervisors under the headings of quality, productivity and reject levels. The supervisors broke into discussion groups and identified specific actions they needed to adopt in their own specific areas to meet the demands of the overall strategic plan. Within months, as a team, the supervisors developed an agreed company plan, broken down by production areas, setting targets and rates of production for their respective areas. They had analysed the sales by volume and value and were moving to address issues and problems identified. They had also classified the product range according to difficulty to make and had examined the relative skills of the throwers against the product range classification system. This ensured that unskilled staff were not allocated to work they were unsuited to do, while also giving the throwers a progression ladder for advancement. Effectively, the supervisors developed operational plans to meet the objectives of the overall business plan, and they now had a common goal and an objective to achieve.

RESULTS ACHIEVED
The company achieved its objectives of securing and developing a core of capable supervisors, managing professionally, improving profitability and growing sales and jobs.

Sales were increased by circa 7%, with a heightened focus on profitable lines and customers. And finally, staff numbers increased.

The same point applies in business. For people to work together as a team, there needs to be a reason to do so. Just bringing people together and calling them a team will not deliver teamwork. It is essential that a real reason exists, or is created, for them to work together. Without this reason, they will continue to work as they had before - as individuals. The introduction of a shared objective, one that cannot be achieved by individual action, is useful to get the attention of all concerned.

A key factor for success, when trying to form a team in a business environment, is that management show an ongoing interest in the activities of the team, as well as in the progress and results of the team. Unless people see that their efforts are both significant and important, they are unlikely to put much effort into developing this alien form of working. On the other hand, if management show an interest in the effort, if they monitor progress and introduce measures to ensure team working is happening, people will respond and deliver on the benefits of team-working.

There is a lot known about the detail of team-building. People in general fall into a number of categories:

- **Type A**: Those who are inherently positive, who will try to deliver, who will take on new challenges and new ideas. These account for about 10% of a workforce.
- **Type B**: The main body of people in a workforce, at both management and operational levels, accounting for about 85% of the workforce. These people want to see how things will work out before they commit to a new way of working. When, and if, they see the new way working, they are usually happy to join in.
- **Type C**: The negative group, those who always seem to say “That won’t work!” Quite often these are experienced people, with lots of skill and ability. Maybe they are right, maybe the new way won’t work, because they have seen a serious flaw. Maybe they also see a solution to the flaw! This can be a hard group to win over but also a very rewarding one. Unfortunately, experience has shown that while many within this group can and do change to be positive contributors, some of these people find it impossible to embrace change and generally tend to pursue alternative careers.

SO, WHERE TO START?
It is important to identify a problem or issue for the team that will be both challenging and achievable. It needs to be challenging enough to allow people to feel that they have contributed to its solution and also needs to be achievable within a reasonable timescale. If the problem or issue is too big or too difficult, then the team may fail, with ongoing negative repercussions on future improvement activities.

Once the issue or problem has been identified, it is time to identify who should be on the team. Practical experience has shown that the first efforts at team-building are the most important. If introducing team-working to help an improvement initiative, it is probably best to pick positive, Type A people, with some Type B “wait and see” people in the early teams.

Some experts suggest including Type C people, the “nay sayers”, in early teams. We believe that this is not the most effective approach. It is usually better to achieve success with a positive or neutral group of people rather than trying to convince the “nay sayers” to change their attitude.

CASE STUDY: LAMPAÍ ÍN DAINGEAN

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In addition to these structural difficulties, the management clearly identified the need to continue to develop the business’ manufacturing capability as well as its sales efforts.

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THE FACILITATOR

Team-working can be a new way of working for many people. How do they do it? How is it different from what went before? These and many more questions can - and do - arise.

A facilitator can be very helpful when introducing team-working, providing answers to many questions and helping people to come to terms with the new approach. The facilitator can successfully be a member of staff, many companies and organisations choose to use an external facilitator in the early stages, taking the opportunity to learn from experienced people and also maybe to benefit from somebody outside the organisation “breaking the ice.” The outsider can often raise issues and questions that would be difficult for someone within the operation.

Once the general objective and goals of the team have been identified and the team members selected, typically the facilitator’s role involves:

• Leading the first team meeting
• Helping the team select detailed projects to deliver on the objectives
• Starting the process of open discussion
• Ensuring that all team members get the opportunity to contribute
• Letting the team set its own priorities
• Moving away by devolving power and authority to the team
• Monitoring the progress of the team towards its objectives
• Praising and reinforcing achievements
• Identifying areas where additional effort are required
• Withdrawing, leaving a functioning team in place.

As people become confident in the team-working environment, the power of the team develops, as they begin to see the success of their efforts, and the results of their teamwork. People can often be surprised at their team’s effectiveness, as they find solutions to issues and problems that have often been worked around or ignored for a long time.

The role of the facilitator is a delicate and important one, demanding a high level of interpersonal skills and judgement. A key task for the facilitator is to withdraw from the team, leaving the team with the skill, understanding and ability to be self-sustaining.

CASE STUDY: COLOURBOOKS LTD

Colour Books started operations in 1990 because the managing director and his chairman believed there was a need to print books in Ireland.

At the time, the commonly-held belief was that it was impossible to print books profitably in Ireland. The drive and vision of the management team helped them to identify a way that they could compete with book printers from overseas. Effectively, they re-designed the process of printing books and designed their operations to meet the full requirements of publishers in an effective and efficient way. Based on this effort at Business Process Re-engineering, the company was a leader from the beginning!

Over the following seven years, the competition in Ireland came to realise that the book-printing business could be profitable and took their own steps to move into the market. The management team decided, therefore, that they needed to look at the basics of their operation, if they were to secure the future of the business in the face of this increasing competition.

One of the projects launched was in the Print Room area, focussing on maintenance and effectiveness of machinery using teamwork.

PRINT ROOM

• Put in place Kanban for inks.
• Tool chests with marked shadow boards.
• Painted floor.
• Upgraded housekeeping.
• Set up a team, focused on equipment and downtime.
• A Continuous Improvement board was located behind each machine. Printers and assistants could put problems on the board as they occurred.
• Bought a second set of rollers/machine, allowing machines to run while the first set was being cleaned.
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RESULTS OF WCB FOR THE COMPANY

After the implementation of the WCB programme, the following changes were in place:

• Downtime reduced from 15 hours to 5 hours per week.
• Overall performance at 50% better than PIRA industry standard.
• €20,000+ savings in pre-press costs.
• Regular team meeting held.
• Suggestions acted upon and monitored - Continuous Improvement board.
• Kanban system in place.
• Everything in its place and a place for everything - All tools have a home.
• Housekeeping to a very high standard.
• Problems quantified, analysed and addressed.
• Proper training plan put in place.
• Working with the customer to identify their needs.
• Greater control over work.

It took some time for all printers to join the process. The company started with two machines first, as the continuous improvement process went on, other machine operators became disgruntled and wanted to get involved. So, the rest of the printers were taken on board.

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LEVEL 2

The fundamentals underpinning WCB are about providing a service or making a product: Quicker, Better, Cheaper ...Together. Often we see that where businesses work quicker, they are also better and, consequently, are cheaper. The key elements of WCB all work together to deliver improved performance.

In Level 1, we looked at some basic, fundamentally important tools to help achieve effectiveness and efficiency. By now, people in the operation should be comfortable with working in a team, using quality tools such as check sheets and run charts to identify issues and monitor performance and they should have experience looking at the realities of processes.

At Level 2, we move to the next level of complexity. Many of the techniques used at this stage are natural developments of the Level 1 tools. Others are new and will demand effort to understand them and to make effective use of them.

The tools and techniques of Level 2 include:

- Development of the Physical Flow and Process Flow tools
- Different types of production control systems
  - Simple time-saving approaches
  - Maintenance
- Quality tools for the effective starting, running and improvement of processes
- Supply chains and stock management
- Clusters
- Team-building and structural development

For businesses to be truly effective, they need to be able to sell their products or services. In the book *Applied Benchmarking for Competitiveness*, Level 2 includes a straightforward approach to developing sales, addressing forecasting and targeting and capturing new customers and sales.

Understanding finance and some core measures and how they may help managers to understand and manage their operations is important. Equally, it is important to understand how bankers and potential investors view an operation, therefore the section provides some insights into financing ratios.

Strategy is presented at the end of Level 2, because most businesses are already in a chosen sector, with products, processes and customers.

LEVEL 3

The business has now mastered the fundamental tools and techniques of Levels 1 and 2. It is competing well at national level and has started to sell in the world market. So, what comes next?

By this point, both managers and staff should be aware that, although they have achieved significant improvements within their operations through their own efforts, there are some really strong operators on the world stage and that the real challenge has just begun. They will be running with the big dogs now!

At Level 3, a business should be seeking to make Continuous Improvement a bedrock of the operation. Management and staff must realise that they have two jobs to do:

- The "day job"
- To find ways to improve the effectiveness of the operation.

Managers can realise real benefits for all by building this realisation and fostering the enthusiasm of all concerned with the business. This includes both suppliers and customers.

In *Applied Benchmarking for Competitiveness*, Level 3 does not try to give comprehensive information on the more advanced WCB techniques but provides insight into some of the more useful tools and techniques as a taster, including:

- Process Benchmarking
- The 5 S system
- Total Productive Maintenance (TPM)
- Overall Equipment Efficiency
- Six Sigma
- Business Excellence Model
- Value Management, Analysis, Engineering
- Lean Production

And finally, it is no surprise or coincidence that the best businesses in the world use or have used one or several of these approaches to achieve superior performance over the years.

Excellence is no accident, it is the result of strong leadership identifying a goal and harnessing the combined strengths and abilities of other people and the available assets to achieve that goal. By focusing people’s attention on stretch targets, the world’s best companies build their people through constant innovation. These tools and techniques support this effort. It is not magic - it is hard work - but it is rewarding for all.
APPENDIX I: SELF ASSESSMENT QUESTIONNAIRE

Introscope is a simple benchmarking tool, designed to introduce people working in a wide variety of businesses and organisations to the power of benchmarking.

Using a sample of questions drawn from some of the best available benchmarking tools, Introscope invites you (perhaps with a few colleagues) to assess some of your organisation’s key practices and performance aspects against a model of “best practice”, and to discover how your assessments compare to those of hundreds of other organisations. Start by confirming the scope of your assessment, which could be a department, site or the whole organisation - it will work at any of these levels, so long as you are consistent.

If you find Introscope and its outputs useful, ask about the range of more sophisticated benchmarking tools from which you can select one suitable for your needs. You will have to invest a little more effort, but you are likely to find this well worthwhile as benchmarking results help you to shape your improvement plans with confidence.

HOW TO SCORE

You choose the statement most appropriate to your organisation/site and this gives you a score - the number in the grey band above, 1, 3, or 5. Sometimes, you may feel that your organisation is between two statements. In this case you choose the number between the two statements, 2 or 4.

If you see differences across the organisation, where some areas are more advanced than others, it is best to assess an average position. For example, a pilot implementation does not warrant the maximum score of five. We seek to assess your position TODAY, not where it will be when current plans and projects deliver the results you expect. Benchmarking will only ever be of value to you if assessments are true reflections of the practices and performance of the organisation as it is NOW.

THE INTROSPECTIVE QUESTIONS

INTROScope questions are drawn from the longer questionnaire scripts used by five of the best available benchmarking tools:

• Manufacturing Microscope
• Service Microscope
• The Micro Business Review
• Manufacturing PROBE
• Service PROBE

<table>
<thead>
<tr>
<th>1</th>
<th>3</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Role of leadership in developing customer-focused culture</strong></td>
<td>Little attention paid by top management</td>
<td>Supported by top management, delegated down</td>
</tr>
<tr>
<td><strong>2. Service/product meeting customer needs</strong></td>
<td>Service/product does not consistently meet the customer needs</td>
<td>Service/product generally meets customer needs</td>
</tr>
<tr>
<td><strong>3. Quality performance, relative to industry</strong></td>
<td>Poor overall quality record, compared to industry</td>
<td>Achieved levels about equal to the industry standard</td>
</tr>
<tr>
<td><strong>4. The time it takes</strong></td>
<td>We lose some business because it takes longer than customers want to wait/to make/ deliver our products/services</td>
<td>Our speed is neither a strength nor a weakness for us in gaining business</td>
</tr>
<tr>
<td><strong>5. Quality mind-set</strong></td>
<td>Problems will happen; deal with customer complaints</td>
<td>Inspection and control with some data collection</td>
</tr>
<tr>
<td><strong>6. Training and education</strong></td>
<td>Ad hoc, no plan</td>
<td>Some skills and development training for all employees</td>
</tr>
<tr>
<td><strong>7. Problem-solving</strong></td>
<td>Crisis mindset, confusion, finger-pointing</td>
<td>System for recognizing and responding to problems, emphasis on process not people, teamwork</td>
</tr>
<tr>
<td><strong>8. Employee morale</strong></td>
<td>Pressure and stress, anxiety about future, cynicism</td>
<td>Stability, status quo or moderate progress, occasional stress situations</td>
</tr>
<tr>
<td><strong>9. Innovation</strong></td>
<td>No recent innovations in service/product concept and process</td>
<td>Regular innovations in service/product and an occasional major breakthrough innovation</td>
</tr>
<tr>
<td><strong>10. New service/product design and development process</strong></td>
<td>No identifiable process for improving existing services/products or for new service development</td>
<td>Ad hoc basis; services/products developed and improved regularly but no set process</td>
</tr>
<tr>
<td><strong>11. Management of business processes</strong></td>
<td>No attention to business processes (for example, customer billing process)</td>
<td>Key processes defined and mapped, initial steps taken toward redesigning and improving these processes</td>
</tr>
<tr>
<td><strong>12. Reliability of equipment and machinery</strong></td>
<td>We only maintain things when they break down. Perhaps this is why we have frequent problems with equipment (computers; equipment used in delivery of our products/services)</td>
<td>Maintenance is carried out to the maker’s instructions. We plan time for this in order to reduce the risk of failure. We have adequate data security and back-up procedures</td>
</tr>
<tr>
<td><strong>13. Housekeeping</strong></td>
<td>Cluttered and disorganized</td>
<td>Organised</td>
</tr>
<tr>
<td><strong>14. Relationships with Suppliers</strong></td>
<td>Many vendors, seek low bid, no certification programme</td>
<td>A few certified suppliers, Just-in-Time for hardware and consumables</td>
</tr>
</tbody>
</table>
# ABOUT THE AUTHORS

**DR RICHARD KEEGAN** is a senior specialist at Enterprise Ireland, in the areas of World Class Business and Benchmarking. He has written extensively in the area of benchmarking and World Class Manufacturing/Business, and is the author of World Class Manufacturing ... in an Irish Context (with John J Lynch), An Introduction to World Class Manufacturing, and Benchmarking Facts (all published by Oak Tree Press). He is a staff member at University of Dublin, Trinity College.

**EDDIE O’KELLY** is the first Chairperson of EirGrid plc, the company that is being set up to become the Transmission System Operator in Ireland, and is Emeritus Professor of Industrial Engineering, National University of Ireland, Galway. With qualifications in the fields of electrical, mechanical, industrial and management engineering, he was previously a Board member and Deputy Chairman of the Electricity Supply Board (ESB) and a Director of ESB International (ESBI). Director of a number of private companies and, until 1998, acted as Chairperson of the FÁS Retail Advisory Committee. He has wide experience of working with State bodies and private companies as a consultant.

**PETER MCCARRON** is an Executive in the Business Improvement Service at Invest NI and has spent 20 years of his career in industry, laterally focussing on productivity improvement through people and world class productivity techniques, such as:
- Total quality management
- Total productive maintenance/Lean manufacturing
- Theory of Constraints
- Six Sigma
- Balanced Score Card

Peter favours a structured approach to company improvement using the EFQM or Microscope model plus the Quantitative Benchmark Index. He also feels that there is no substitute for companies benchmarking and sharing knowledge and experience to enhance their competitiveness.

**ACKNOWLEDGEMENTS**


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**Organisation’s name:**

**Unit or Site name:**

**Type of Organisation:**

**Number of people working in the organisation:**

**Address (full postal):**

**Telephone (and code):**

**Fax (and code):**

**e-mail address:**

**Name and position of person responding:**

**Date:**

**Name of adviser & organisation:**

ALL INFORMATION IN THIS QUESTIONNAIRE IS CONFIDENTIAL.

Your answers will be used by your advisor/advisory organisation to give you confidential feedback, which should help you to develop an action plan. The information about your organisation’s practices/performance will also be used as an anonymous contribution to future benchmarking analysis.

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www.cbe.unn.ac.uk www.comparisoninternational.com
The Irish Best Practice Forum has made significant progress over the last few years in promoting the benefits of benchmarking and best practice to Irish SMEs north and south.

The Forum is made up of experts from each of the main development agencies on the island who work together to share knowledge and expertise through the publication of self help manuals for companies.

This is the latest in a series of manuals designed to encourage owner managers to look at how benchmarking and best practice techniques can help their company improve. The Forum also organises best practice visits to world class manufacturing plants where small companies can benefit from seeing tools and techniques in action.

For more information on the work of the Forum please contact Paddy Savage on 00 34 28 3083 4110 or email paddy.savage@intertradeireland.com