(PROBABLY) THE LONGEST RUNNING KM EXPERIMENT IN THE WORLD!

Knoco Ltd's **Nick Milton** and **Tom Young** share their experiences with the 'Bird Island' KM workshop – an experiment that has been running for the past 10 years.

What is the first challenge in a knowledge management implementation?

If our knowledge management (KM) experience is anything to go by, one of the early challenges you need to address is to convince some of your hard-nosed business managers that KM will result in real, tangible, measurable value for the business. You can tell them this as much as you like, but until they see some good hard data, and ideally experience it for themselves, they won't believe you. That's why value stories and solid measurement are really important.

We have been using a practical experiential workshop for the past 10 years, to engage managers and staff in the value of KM. Not only has this workshop helped people 'learn through doing', and enabled them to 'feel the value', it has also resulted in a set of statistics that enables us to tie KM interventions directly in to measurable performance improvements. We call this two-hour KM experience 'Bird Island'[1] and we think that it might well be the longest-running KM experiment in the world.

Background to the workshop

Bird Island comes out of a simulation developed internally in KM training courses for BP. The simulation was adapted from pre-existing team-building games and was given a framework and format specifically designed to test and demonstrate knowledge principles and to illustrate the impact of KM. The simulation has been honed and adapted through 10 years of application around the world and in a portfolio of industries.

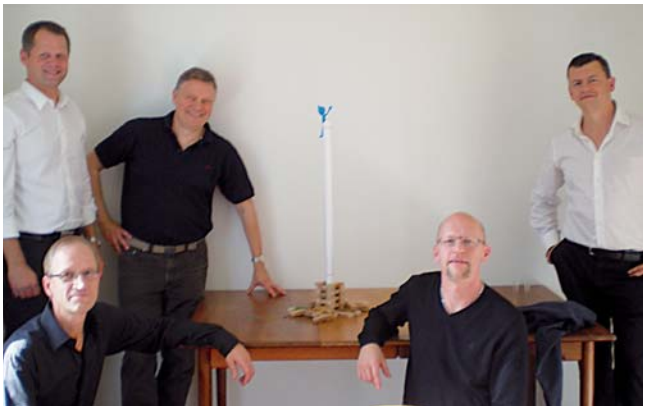
The workshop attendees are briefed and then divided into teams of three or more people, and moved into separate rooms. They are given a task to perform – a task that anyone can participate in – constructing a tower from supplied materials, with the aim of creating the tallest tower possible, provided that it passes a couple of stability tests. This is a task that is new to them, and which requires choosing the best from a number of design options, with a trade-off between height and stability. KM is brought into the simulation through three processes. After each KM intervention, the team is asked to express their added learning in terms of an estimate of how much taller they could build their tower. Finally, armed with much new knowledge and current best practice, they build the tower again. In every case, the second tower is much taller than the first – often three or four times taller. A careful debrief follows.

The fact that performance is easily measurable, and that added knowledge can be 'measured' in terms of added performance, is one of the things that makes Bird Island such a compelling engagement tool. This article explains how the simulation works, and outlines the results data that demonstrate KM value.

How the simulation works

The simulation is in seven main sections – an initial briefing, constructing the first tower, exchanging knowledge in three separate stages, constructing the second tower and the debrief.

During the initial briefing, the delegates are divided into teams and given the scenario for the simulation. Within this, they are inhabitants of Bird Island, and make their living by catching migratory birds. They need to build a tower, using the materials that they will be given, to enable a Bird Island native to reach up as high as possible with their bird-catching net (the native is represented by a small doll). The higher the doll can reach, the more birds will be captured, and the greater



A happy team with their first tower

The same team's second tower

the feast for the tribe. As in real life there are dangers on Bird Island, in the form of earthquakes and hurricanes, and their tower needs to survive a hurricane (a blast from a hairdryer) and an earthquake (a large telephone directory dropped next to the tower). The teams are sent to their separate rooms, each with a facilitator. At this stage there is normally a very lighthearted atmosphere; after all, what could be easier than building a tower with the materials supplied?

The first tower-building session is generally fairly chaotic! Each team has the same materials, but the people and

their experiences are different. Some spend time designing and testing, some dive straight into tinkering and building, while others will ask if anyone in the team has any relevant experience, but at the end of the time period they all have a tower. The 'first tower height' is measured, then the tower is tested against the 'earthquake' and 'hurricane'. Usually the height of the first tower is between 60 and 100 centimetres, it almost always passes the stability tests, and the teams feel reasonably pleased with their efforts.

After the tower is complete, we explain that although the team originally had no tower-building knowledge at all, they now know a lot more than they did at the beginning of the workshop. If they analyse what they have learned, then this experience can be captured for the benefit of future towers. We lead them through an 'after action review' – a simple facilitated process for knowledge capture. After about 10 minutes, they have had a chance to discuss what they have learned, and you ask them the question: 'If you built the tower again, what would now be a realistic estimate of the height which you feel you could now achieve?' This height is recorded as the 'first estimate'.

We now remind the teams that there are other teams in the same building who have just constructed a tower, and who also have knowledge that might be useful. We ask for a volunteer from each team to visit another team, to transfer some of their knowledge through a Peer Assist (a simple facilitated knowledge exchange process). There can be some interesting dynamics here with the first question being asked being: 'How tall was your tower?' We have noticed that when a team who are proud of their 60cm tower, and who think they could stretch it to 75cm, are visited by someone who has already built to 120cm and is aiming for 150cm, they tend to pay attention! However, when the tower is smaller, frequently they don't pay as much attention. Often the peer assists result in paradigms being challenged, and out-of-the box ideas being generated. After these, we ask them for a revised estimate height – the second estimate.

Then we remind the teams that they are not the first to have been through this workshop, and that over 120 teams have built towers before them. We take them back to the main room and present a 'best-practice knowledge asset' on tower construction. This is a fully illustrated web-based compilation of current best practice from the tallest towers, which provides detailed instructions on how to construct a state-of-the-art tower design. This compilation is updated every time a design improvement is identified. Currently, the record height stands at over 300cm, with a median performance being 290cm. The atmosphere in the room is noticeably different as they come to terms with this benchmark – they had believed their first tower was a good effort, but now know that it could be three or four times higher! We ask them a third time: 'Now you have the complete knowledge, what would be a realistic estimate height for a second build?' This is the 'third estimate'.

Metric	When captured
First tower height	After first tower build
First estimate	After the after action review
Second estimate	After the peer assist
Third estimate	After viewing the best-practice knowledge asset
Final tower height	After second tower build

Table 1: The statistics gathered at the workshop

Now they have the distilled knowledge of the world population of Bird Island tower builders at their disposal, and we give them a chance to put this knowledge into operation, to build a second tower. The second build is usually, slick, fast and coordinated. Everybody knows what to do. And generally, the final tower height for each team exceeds their third estimate height. Photographs are taken, everybody smiles! The sense of achievement is profound. The power of re-using knowledge, knowledge created by someone you have never met, has been powerfully illustrated.

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Performance statistics

Five results are gathered for every team in each training workshop (see Table 1).

These numbers enable us to demonstrate how each knowledge step (knowledge from the individual, the team, the group, the world) adds value within a single workshop, but also how the carry-over of knowledge from one workshop to the next enables continuous improvement over time.

Figure 1 shows typical data from individual workshops, held for clients in four different sectors. For each team on each workshop, the five heights from Table 1 are plotted as bars on the graph.

In almost every case, these heights are in increasing order. In other words, the more knowledge that becomes available to the team, the greater the team's confidence in their ability to build a tall, stable tower. For each team, this graph represents a learning curve. The only additional 'material' that the team had at the finish that they did not have at the start, was knowledge. They had the same people, the same building

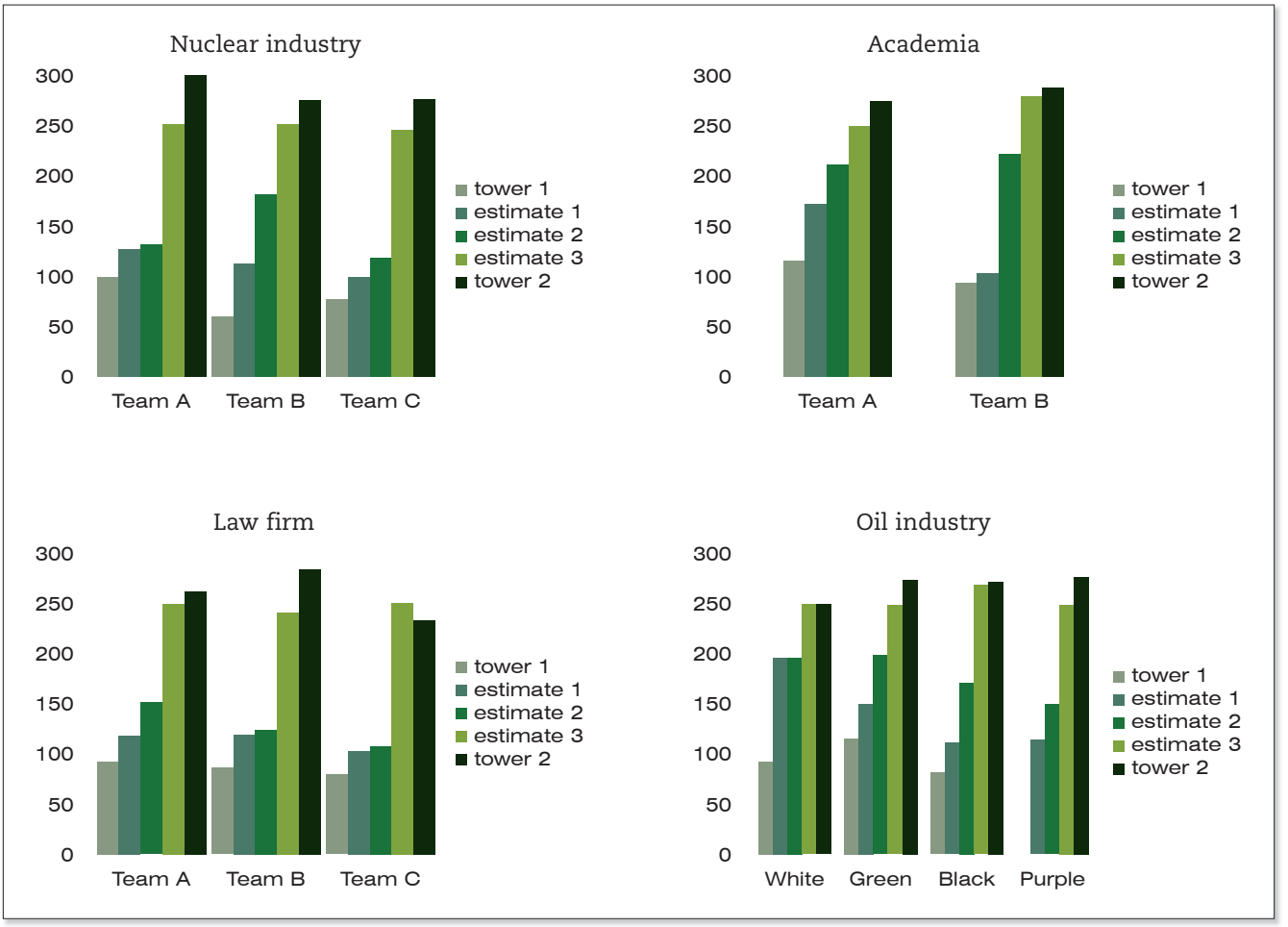

Figure 1: Performance data from single teams, showing the performance as each team gains more knowledge

materials, the same time to build, and the same constraints, but they had increased knowledge, and that knowledge resulted in a three or four-fold performance increase.

If we aggregate the data from many workshops, we can also look at the average increases in estimated performance after each step in the workshop. At the time of writing, 222 teams had been through this exercise, over a period of 10 years. However, the exercise is often constrained by ceiling height, and the dataset shown below is from the 120 teams who were lucky enough to work in a room tall enough to allow the final tower to be free-standing and complete[2].

Figure 2 shows a histogram, or frequency plot, of the percentage difference between the first tower height and the first estimate. This represents an estimate of the performance increase they see as a result of learning from the first build through the after action review. The increase is somewhere between nought and 120 per cent, with a mode of 40 per cent. This represents the performance increase a team thinks they could gain, by learning only from themselves. As we will see, this is a very modest estimate compared with the actual increase possible, and suggests that teams who only learn from their own performance may be missing out on massive 'learnings' and performance improvement.

The next graph (Figure 3) shows the percentage increase between the first tower and the post-peer assist estimate. Although the mode is still a 40 per cent increase, the mean is now closer to an 86 per cent increase. The reason why the mode does not shift from 40 per cent is that the team with the highest tower rarely believes they gain any knowledge from the peer assist. They think 'we have the tallest tower – we have nothing to learn'. So, one team almost always does not improve their estimate. The other teams, however, do gain knowledge. That's why the frequency distribution in this graph has more than one peak. So sharing knowledge between teams is valuable to all except the high performers, but as we will see, still does not deliver the full value of KM as the final tower heights are far higher than the second estimate.

The third graph (Figure 4) shows the percentage increase between the first and second towers – between a state of no knowledge, and a state of fully-up-to-date knowledge. The increase they achieve is now between 140 per cent and

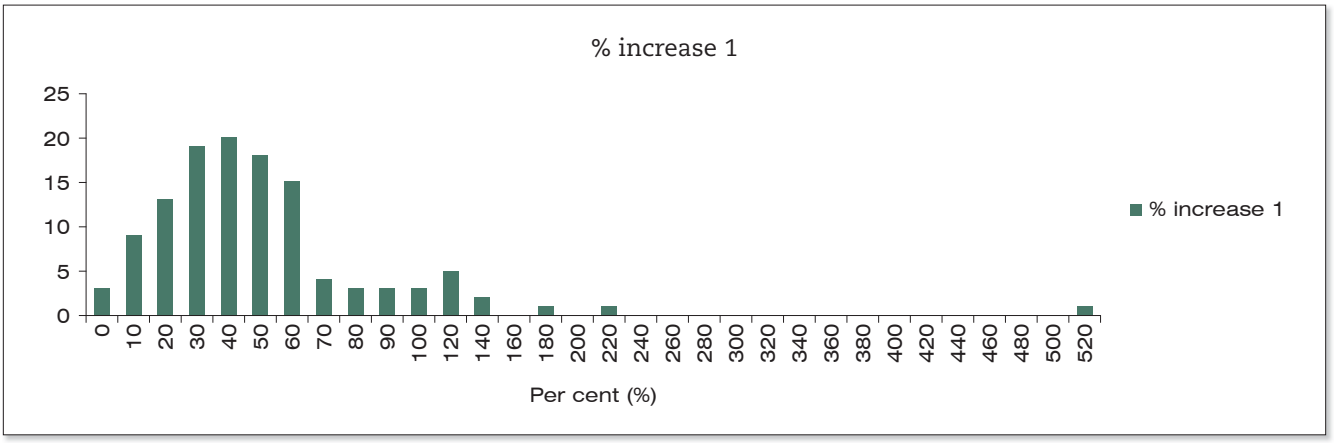

Figure 2: A distribution of the percentage difference between the first tower height and the first estimate.

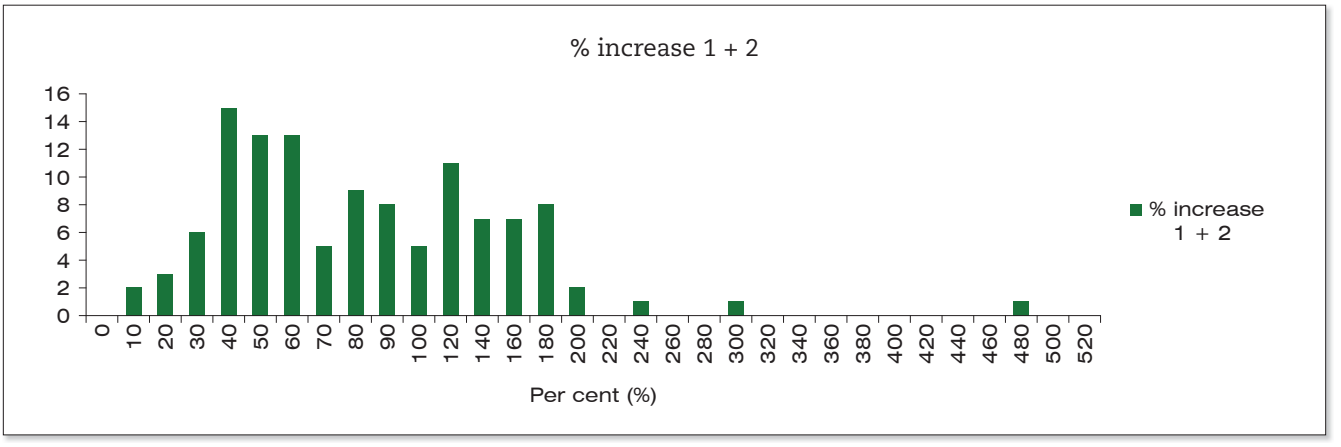

Figure 3: A distribution of the percentage difference between the first tower height and the second estimate.

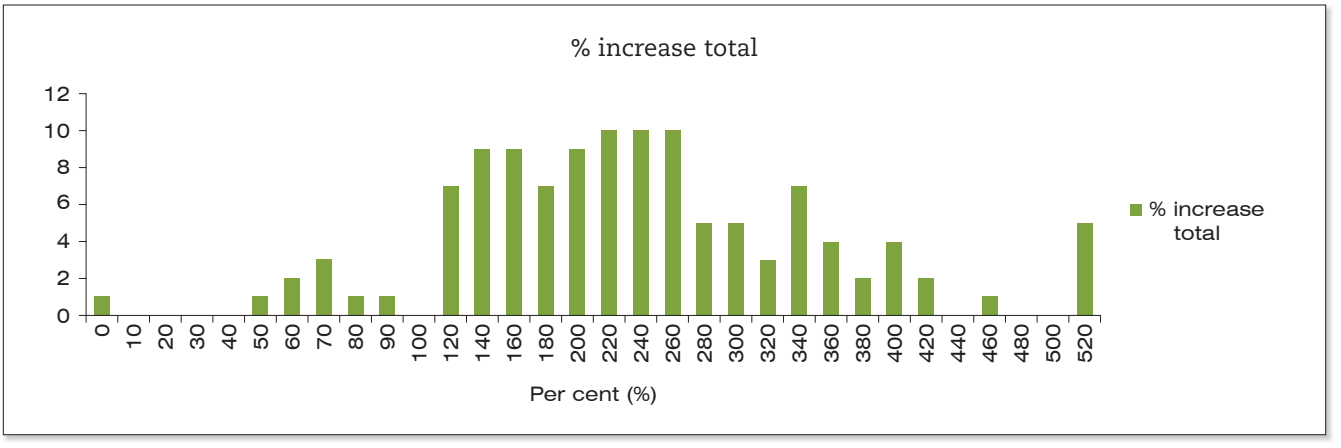

Figure 4: A distribution of the percentage difference between the first tower height and the final tower height.

400 per cent – representing a massive performance increase from the first tower to the second, as a result of nothing but improved knowledge; knowledge gained from their own experience, from the experiences of other teams in the workshop, and from packaged knowledge representing best practice from all past teams over the last decade. It was that packaged knowledge that added the final value, and took the performance increase from a mean of 86 per cent (Figure 3) to a mean of 240 per cent (Figure 4).

So, KM demonstrates performance improvement for the individual teams, as show in the figures above. However, continuous performance improvement can be seen from one workshop to the next, as the best-practice knowledge asset is updated over the years as part of a very simple KM system.

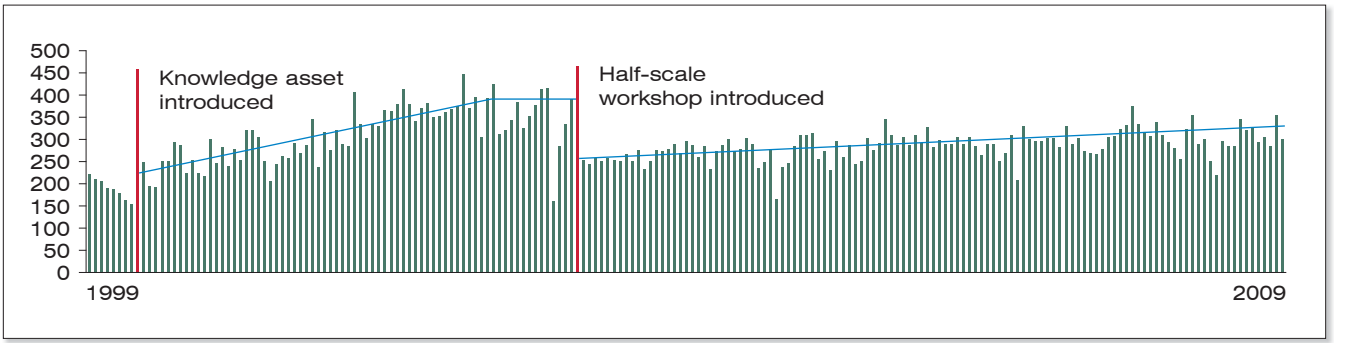

Figure 5: Final tower heights from every workshop run to date, showing a continuous increase in performance over time.

This KM system involves the following steps:

- Every time a team makes a new modification and improvement to the tower design, we photograph it;
- As custodians of the best-practice knowledge asset, we update it to include the new modification;
- We present the updated knowledge asset in the next workshop; and,
- The teams use this as the basis for their own design and often innovate even further.

The results of this simple KM system of capture, update and re-use are seen in the continuous improvement in tower heights over time, as well as the dramatic improvement experienced in the workshops by the teams themselves. Figure 5 shows the final tower heights for the 120 teams, plotted in chronological order since 1999. Because each team uses consistent materials, these data represent a progression and evolution of best-practice tower design.

For the first 12 data points, left of the first red line, there was no knowledge asset available because there wasn't enough historical performance data, and there was no carry forward of knowledge from one workshop to the next. At the point marked by the first red line on the figure, the knowledge asset was constructed and introduced to the workshop. Two things happened. First, the average height performance increased by about 25 per cent, from about 180cm before the knowledge asset, to 225cm immediately afterwards. Second, performance started to increase steadily from an average of 225cm in 1999, to an average of close to 400 in 2001, as the elements of best-practice design were developed (shown by the blue line). This is an interesting result. Teams are sometimes worried that by copying best practice, they may be stifling innovation. However, the results show that innovation has happened, and has happened fairly steadily, until in 2001 a plateau was achieved, close to the technical height limit of the available materials.

In 2002, we were finding that many teams were beginning to build towers of over 400cm in height. There are very few conference facilities with 400 cm ceilings, and we were getting worried by participants needing to climb onto chairs and/or tables to complete their towers. We decided to introduce a half-scale version of the workshop, using half the number of materials. This had the added bonus of making our suitcases much lighter! After introduction of the half-sized simulation, a new round of design improvements were possible, fuelled by renewed innovation. This is represented by the blue line after the introduction of the half-scale workshop.

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Our findings

The statistics on the graphs in Figures 2 and 3 are proof that KM works. Capturing and sharing knowledge, and storing it in a regularly updated knowledge asset, has not only improved the performance of every team that has ever been through the simulation, it has also resulted in continuous innovation, design evolution and performance improvement over the past 10 years. Tower height can be increased three or four-fold in a single workshop, and over ten years the record height has more than doubled.

If your senior managers need to be convinced that KM can improve performance and add value, show them this data. Or even better – get them to take part in the workshop, and to experience for themselves the empowerment and competence that comes from a full state of knowledge, and the performance that can result from this. Inside Knowledge

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Endnotes

1. Name and methodology copyright of Knoco Ltd
2. If the room is not tall enough, we measure the tower as high as it can go, and allow credit for the extra materials left over.