Mathematicians: Why Do Sofa Firms Have A Suite Sixth Sense?

December 8 2005

Six weeks will always be the delivery time given for your new sofa regardless of where it is made, according to findings published Wednesday by a team of British mathematicians.

The age old answer to the question about how many people does it take to change a light bulb is as far away as ever. No one has a definitive answer.

But if you have ordered a sofa to be delivered in time for Christmas, it seems Santa may not be able to deliver – according to research from the University of Derby. For the question then on everyone's lips is: Why does it take six weeks to deliver a sofa suite to your home?

Mathematicians Dr Stuart Berry and Val Lowndes at the University of Derby have been using ‘fuzzy logic‘ in order to unravel the mystery.

It’s all part of a post-doctoral study into logistics conducted by the academics, which seeks to understand how firms organise themselves and determine delivery times.

In research just revealed, more than 70 furniture firms were quizzed about how long it would take to deliver a suite, and every one quoted six weeks. In the same study, about 100 glaziers quoted an average of four weeks for an installation date.

Dr Berry, Senior Lecturer in Mathematics, said: “Furniture makers would each quote the same delivery time but this quote was made without taking any notice of workload. They all said it would be ready in six weeks. It was a standard answer.

“Getting parts of the suite from different areas of the country and waiting for the right colour seem to be examples of where time is taken up. But moreover, it seems necessary for each company, whether small or large, to follow what their competitors’ do.

“No-one wants to promise delivery inside six weeks as they may well not be able to deliver – but to quote any longer would risk losing custom to a rival.”

Further work by the mathematicians discovered that in contrast, glaziers pinned down an exact date for installation with the customer. Dr Berry concludes this may be down to factors such as health and safety and the possible need for construction changes.

Dr Berry’s team’s initial findings have just been revealed. Further research is now planned with a series of questionnaires being sent to

firms to understand the time scale further to be issued before Christmas.

They have discovered that in the average suite-making process involves one worker cutting the material, three others sewing and four more assemble to cushions.

In the average glazier-making process, one worker cuts the material, three workers assemble the frame and two finish the product.

The new questionnaire asks if such processes have changed and any reasons for this. It seeks to find out what factors frequently changed the production plan, such as suppliers or machinery, and asking the major constraints to production.

Dr Berry said: “There is an element of fuzzy logic in the initial findings. In mathematics terms, a form of knowledge which cannot be defined precisely can be classed under such logic.

“The core concepts of fuzzy logic date back to the work of Polish mathematician Jan Lukasiewicz in the 1920s. It enables computerised devices to reason more like humans and can help explain exactly which such trends we have witnesses in these industries exist.”

NB: The answer to ‘How many University of Derby students does it take to change a light bulb?’ is ..... five.

One to design a nuclear fusion powered bulb that never needs changing, one to figure out how to power the rest of Derby using that bulb, two to install it and one to write computer programmes that control the wall switch.

Source: University of Derby