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Understanding CAT scans is child's play

The Kitten Scanner is a scale model of a CAT (computer-aided tomography) scanner. Through playful interaction and storytelling it helps take away any anxiety children may have and prepares them for their examination.

Having a CAT exam can be a daunting experience for children. Being in a hospital in the first place is unsettling. And once they get to the examination room they are often confronted by ominous-looking equipment and unfamiliar surroundings. But most of all there is fear of the unknown. What's going to happen in there?

"In 2004 we began to examine how we could improve the experience of children going through such a procedure," says Alex Tan, Creative Director for Ambient Experience at Philips Design in Andover, USA. Observations were carried out at hospitals, and clinical psychologists specialized in pediatrics were interviewed to better understand the situation and the emotions typically felt by the child. "We discovered it was necessary to develop a narrative to distract and inform children," he continues. "Sometimes there are information leaflets available in hospitals, but they are very text-oriented and not exactly inviting for children to read. And that's a shame, because it is every bit as important - if not more so - to explain to children about what they are about to undergo."

As a next step, creative workshops were held with researchers, designers and technologists. "We were already looking at how to provide easily-digestible information for patients as part of our Ambient Experience concept, so this was basically an extension of that," says Alex. It was decided to offer something more intuitive and child-oriented; an interactive scale model of a CAT scanner called, appropriately, the Kitten scanner. "Some of our people had noticed that certain hospitals already had miniature models of scanners in waiting rooms," he adds. "However, there were often just made of wood and had no functionality.

We wanted to add a little magic as well as an element of surprise, creating something that would really engage younger patients while educating them at the same time."

The Kitten Scanner package consists of a miniaturized and stylized version of a CAT (CT) scanner, a TV screen and several toy animal characters - including a crocodile, an elephant and a robot - that serve as 'patients'. "Actually one of the main challenges during the design process was to come up with the right toys," says Alex. "In the beginning we used standard off-the-shelf ones, but we soon realized they were very seasonal and likely to disappear from the shops fairly quickly. In any case we had to make sure they were suitable for containing an RFID tag, so in the end we made our own."

This tag is crucial. When a child places one of the toys in the scanner, it activates an animation on the TV screen which tells the story of that particular character and mimics the results of a scan. The elephant, for instance, is diagnosed as having a problem because it drank some water with fish in it, which are still swimming around in its belly. The animation also shows children how a real CAT scanner works, and how it can see inside the body without having to open anything up.

“The Kitten Scanner allows children to get involved in their own care and learn about the process in a subtle and playful way," says Alex. "They are inherently curious and will be naturally attracted to it - we deliberately made it very approachable and intuitive to use. There are no buttons to press; placing the toy in the scanner automatically activates it. By putting toys through this mock procedure they can relax and take their minds off why they are there, yet at the same time there are actually learning."

The visual and interactive nature of the product is seen as a big advantage. "We could have easily come up with an informative video or presentation that ran on a computer screen, but that is less likely to capture kids' imaginations," he adds. "The fact that they can experience enjoyable, hands-on learning, supported by animations and moving images, really heightens the impact."

The idea was initially presented at the RSNA exhibition in Chicago in 2004 and was very well received. The first installation took place in the same city, at the Advocate Lutheran General Hospital as part of a wider Ambient Experience package. It has subsequently been sold to other hospitals as well, together with Ambient Experience or on its own. “We’ve heard a lot of anecdotal evidence that staff very much appreciate how it distracts children, helps them calm down and reduces any anxiety they may have," says Alex.