

Driving Impulse Shopping with a Smart Cart

Supermarkets could soon turn to monitoring technology to make us buy more stuff.

By Duncan Graham-Rowe

Radio frequency identification (RFID) technology may not only be useful for streamlining inventory and supply chains: it could also make shoppers swarm. A new study suggests that supermarkets could increase their revenues by using information gleaned from RFID tags to make shoppers behave like an impulse-buying collective.

Impulse buying currently accounts for about 40 percent of all supermarket purchases, says [Ronaldo Menezes \(http://www.cs.fit.edu/~rmenezes/\)](http://www.cs.fit.edu/~rmenezes/), an expert in swarm intelligence at the Florida Institute of Technology, in Melbourne, FL. But his research suggests that impulse buying could be significantly increased if information was fed back to shoppers about what others are buying.

It's an established fact that consumers are more influenced by other people's purchasing decisions than they are by discounts, says Menezes. Furthermore, it's well-known that people will flock or swarm in certain conditions, such as when a fire alarm goes off. The idea here was to exploit both of these inclinations in order to create a swarm of impulse shoppers.

The introduction of so-called smart shopping carts should make this possible. Already being used experimentally by a number of supermarkets, these carts are capable of knowing what a customer has put in them by scanning the contents for an RFID tag: a sort of wireless bar code that is being introduced in products. And some carts, such as the Shopping Buddy, developed by Cuesol, in Quincy, MA, have touch screens.

So by monitoring the contents of everyone's carts, the screens could possibly feed information back to customers as they shop. For example, a customer entering a particular aisle may be informed, via the cart's screen, that 60 percent of customers currently have a specific product from that aisle in their cart. Similarly, when the customer places an item in the cart, he or she may be notified about other products purchased by customers who bought this one.

Amazon and iTunes use similar tactics online, notes [Herb Sorensen \(http://www.sorensen-associates.com/management.html\)](http://www.sorensen-associates.com/management.html), CEO of the in-store consumer-research organization Sorensen Associates, in Troutdale, OR. He thinks the tactic will make sense in the physical world, as well. Sorensen Associates already uses RFID-enabled smart carts to conduct similar research on shopping behavior. (These carts, however, do not feature the screens that display information about other customers')

purchases.)

So far Menezes has only carried out simulations of this swarming behavior, so it remains to be seen if the same behavior manifests in real shopping scenarios. "We are confident that our preferences are as close as you could get to a real consumer," he says.

Working with his Ph.D. student Zeeshan-ul-hassan Usmani, Menezes produced a simulated supermarket environment. "We created a simulation that had agents with random preferences for buying things," he says. They found that when compared with the effects of announcing special discount offers, their customer-feedback model, called Swarm-Moves, resulted in 29 percent more sales.

In order for the feedback system to work, each customer has to receive information tailored to his or her needs, says Menezes. But in practice, this is quite feasible just by merchants using information from loyalty schemes about previous purchases, he says.

This is analogous to the way street hawkers muster the public's interest by getting insiders to pretend to buy stuff, says Nigel Marlow, a business and consumer psychologist at the [London Metropolitan University \(http://www.londonmet.ac.uk/depts/dops/homepage.cfm\)](http://www.londonmet.ac.uk/depts/dops/homepage.cfm), in the UK. On the one hand, this lends confidence to the research because this tactic is tried and tested; people fall for it, so it works.

But on the other hand, it suggests that the system could be open to abuse by the supermarkets. Can they really be trusted to feed customers accurate information, or would the temptation to try to artificially stimulate sales by making up purchases be too great? "There's no doubt that it will be abused," says Marlow.

Of course there are ethical issues raised by these sorts of sales tactics, says Menezes. But they are no less devious than other sales tactics currently being used, and people can always choose to ignore the messages, he says. What's more, it is unlikely that customers will even be aware that they are swarming.

Some customers will certainly resist this kind of technological intervention, says Marlow. But he doesn't doubt that supermarkets will be drawn to it, attracted by the prospect of increasing sales without having to make discounts. "They will do anything to make a sale," he says.

But Sorensen is not so sure. "It's not going to happen in the next five years," he says. The food industry is huge in America, with one in four people currently working in it, either directly or indirectly. "The only thing bigger than the food industry is government," he says. Because of its enormity, the food industry is incredibly slow to change.

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