Food for Thought: High-IQ Kitchens --- Too Busy To Shop? Forget a Recipe? No Problem at All

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ABSTRACT (ABSTRACT)

In the basement of MIT's Media Lab, a research center that bills itself as the place where the future is invented, is a kitchen. It looks little different from any other kitchen. Indeed, at the moment it is little different from any other kitchen. But in time it will become the first cooking space to incorporate a whole range of new ideas about kitchen life being developed by the Lab's Counter Intelligence project.

So what will this kitchen of the future look like? The same cabinets and counters, but, according to researchers at the Lab, it will think for itself in ways that relieve its owners of the more mundane tasks while preserving the joys of cooking. The Counter Intelligence program, which is using currently available technologies ranging from bar code scanners to cable Internet links, is also trying to provide a safer environment in a space that is increasingly the center of family life.

The program started when a student hacked into a coffee machine in the Lab and installed a database and a chip recognition system. Each person was given a mug containing a chip that told the computer their coffee preference and what radio station they wanted to listen to while the machine made their drink. From this blossomed the idea of making a kitchen that could understand what you were doing and would help you do it.

FULL TEXT

In the basement of MIT's Media Lab, a research center that bills itself as the place where the future is invented, is a kitchen. It looks little different from any other kitchen. Indeed, at the moment it is little different from any other kitchen. But in time it will become the first cooking space to incorporate a whole range of new ideas about kitchen life being developed by the Lab's Counter Intelligence project.

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Much of the program centers around the kitchen learning what it has in stock. All food and containers would have bar codes that would be read by storage cupboards and the refrigerator so that a central computer always knows what is available. If anything runs low, it can be ordered automatically from an online grocery that will deliver to a special locked box outside your home that will keep frozen goods cold. Never again will you run out of any basic

staples.

All you have to do is ask the computer whether you can make a certain dish and it will tell you if you need to buy any additional ingredients. Recipes are projected on to a countertop that is fitted with sensors that track touch and weight. (They'll also be adjustable for height, adapting as they recognize who is working in the kitchen). If you are making up a dish, the computer will track your technique and remember it in case you forget how you did it.

If you buy any pre-packaged food, the kitchen will read its bar code and then contact the company through the Internet to get exact cooking instructions for the particular oven or microwave in the kitchen. Likewise the oven will have weight sensors and a temperature probe to calculate exactly how long to cook a dish. There will be self-rinsing sinks and automated hydroponic vegetable and herb growers that will provide the freshest ingredients year-round.

That same sink will help track food by remembering which containers were rinsed out. Your tagged Tupperware will learn its contents and the dishwasher will know when it is full and should run. The refrigerator will track its contents so that you never have to sniff the milk again.

One of the central functions of the computer system will be to track nutrition, counting calories and the intake of fats, carbohydrates and essential vitamins and minerals. The system will be able to warn of over-indulgence or monitor the eating habits of elderly people living alone who often neglect to consume enough.

The Lab has been conscious of the social role of the kitchen in people's lives, and aims to avoid turning it into some sterile automated space. Part of the work is about making kitchens safer and more fun for children. It automatically locks children out of cupboards that might contain toxic chemicals and also teaches kids how to cook using computers.

Several consumer goods makers, including Kraft Foods and Unilever, are sponsoring the two-year-old Counter Intelligence program, which has three full-time researchers and gets help from others affiliated with the Media Lab's partners. Many of the ideas have commercial prospects. The Starbucks of the future might dispense with the slack-jawed teenager at a cash register and just take your order from a smart card that knows exactly how you want your coffee. Some of the gadgets they've come up with seem less promising, like a laser bagel cutter that was also used for engraving a picture of Martha Stewart, a consultant to the project, on an eggplant.

Next to the kitchen is a notice board where people are encouraged to leave suggestions on what they want to see in the kitchen. They range from machines that can detect wine that has spoiled (bad wine is rare these days; this would definitely be a case of technological overkill) to a system that pages teenagers to tell them dinner is ready. Most of the suggestions were for some sort of system that automatically cleans up.

How much of this kitchen of the future can be found in the present? The Swedish company Electrolux has developed a Web-connected refrigerator that's now on the market but the fully wired kitchen will be some way off. Much of the technology for what is being proposed exists, it's knitting everything together that will take some time. Additionally, most people only change their appliances infrequently -- roughly every decade -- so developing a market for these items is a longer-term proposition. Kitchen gadgets also tend to endure: Some of the best blenders and toasters are designs that came out 40 years ago.

If I ever have a wired kitchen I certainly hope it doesn't crash with the frequency that my PC does. Personally, if I had money to spend on kitchen technology, I'd go back to that most primal of human developments and install a wood burning fire for grilling. It may lack the convenience of a Web-linked microwave but the food tastes a lot better.

Send comments to awsj.food@awsj.com

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