Tomorrow's Kitchen, Yesterday's Recipes

MIT designers serve up futuristic ideas inspired by the past. Some are handy, others half-baked.

By DAVID COLKER, Times Staff Writer

Ted Selker cooks up kitchens of the future.  
A talking oven mitt.  
A knife that measures bacteria.  
A spatula that knows the difference between folding and mixing.  
Handy gadgets--maybe, someday--but the futuristic kitchen Selker envisions lies somewhere between 'The Jetsons' and a Norman Rockwell painting, an almost retro hearth where technology unites families and friends.  
'This is not the kind of kitchen of the future project where you will find a lot of robots running around,' says Selker, who runs the Counter Intelligence project at the Massachusetts Institute of Technology's famed Media Laboratory. Selker believes that the key to the future lies in the past.  
'The kitchen was the hearth of the house, the first room to get plumbing,' he says. 'It was the room that was warm, the gathering place. But somehow we have moved away from that. Families don't have meals together, meals are eaten outside the home or from takeout. The kitchen becomes a showplace instead of a hearth.'  

Selker, who invented the pointer in IBM laptops and talks as passionately about cooking as he does technology, and his crew of engineers, programmers and designers look for ways the kitchen might play a more central role in household life.  
'The point is much bigger than just technological advances,' says Selker, who has been working with the lab for several years and took over Counter Intelligence in September. 'We're looking at how the kitchen fits into the future, or even if it has a role at all.'  

Finding an increased role for the household kitchen would buck current trends. Selker said that studies show more than one-third of meals eaten in the United States are prepared outside home kitchens--mostly in restaurants or takeaway establishments.  
'Everyone pictures the kitchen of the future as a place that will order out whatever you want every night,' says Wendy Ju, a graduate student and researcher on the project. 'We are trying to move away from that.'  

Famed cookbook writer and television chef Julia Child applauds the move. She visited the lab several months ago and was not impressed.  
'I would have expected they would have gotten further with what they were doing,' says Child, who lives in Cambridge, Mass. 'They hadn't come up with anything I thought was very interesting.'  

Child, 88, does not shy away from technological advances. She began using a computer in the 1970s for word processing and she is eager to try any new kitchen gadget. 'I'm for anything that makes cooking better and easier, and brings people into the kitchen,' she says. But far more interesting to her than anything going on at MIT is the new generation of microwave ovens that make use of convection heat and high-intensity lights for better-quality cooking.
'What's missing from MIT is something like that, something that's truly new and revolutionary.'

One bit of solace for MIT: Child visited Microsoft's future kitchen project and was similarly unimpressed. 'I didn't think much was going on there, either,' she says.

Selker's plan to change the direction of the MIT program includes one of his favorite projects, consisting of several detached computer screens that look like thick table mats. Called 'Room With a View,' the wireless screens are spread across a table in his office.

Selker describes a scene in which each member of a family could be using one of the screens at breakfast time. One screen could display the morning paper, another could cycle through vacation photos and another could access the Internet for a school project. All the screens would also be projected on the walls for everyone around the table to see.

'The whole family would be together,' Selker says, 'in the kitchen.'

But not necessarily talking.

'Somehow or other,' he replies, 'dogs have a wonderful time with each other without talking. At least they would be together.' In the small test kitchen at the lab, Ju points to an ordinary looking Sharp microwave sitting on a high shelf that was one of the first appliances modified by the kitchen project, begun in 1998.

It was equipped with an electronic reader that recognized the food put into it and set the timer accordingly. Of course, the food container had to have an electronic tag for the reader to recognize.

'You put in a pastry to warm, and when it was done it would say with a Danish accent, 'Your Danish is ready,' ' Ju says. 'We were trying to make technology fun.'

The fun went unappreciated by visitors who tried the microwave.

'People told us they didn’t want their kitchens to talk to them,' Ju says.

The exception was when kids were involved in a kitchen task. Ju turns to the most functional test appliance in the room—a touch-sensitive counter top developed to teach kids ranging in age from about 8 to 10 how to follow recipes on their own.

A color projector above the counter beams pictures that can be manipulated by touch. Ju goes through a few selections before settling on a sour cream berry tart with a graham cracker crust. On the counter appears a list of ingredients and full-color picture of the rather sophisticated looking dessert.

Placing her hand on the butter, a hidden speaker announces that six tablespoons are needed. Once the ingredients are assembled, the screens begin showing the steps to follow. A video comes on, demonstrating how to put the graham crackers in a plastic bag and crush them. A later video shows how to roll them out into a crust.

'Adults come in here and say, 'Forget the kids, I want one of these for myself,' ' Ju says.

Like the counter top, most of the devices Ju develops relate to cooking. One of her current experiments is to make a spatula with sensors that can tell the difference between the actions of mixing and folding. 'That's a very important distinction when you are making a souffle, but if you see someone demonstrate it on television, it's not easy to tell the difference just by watching,' Ju says.

Later, out of earshot, Selker wonders aloud, 'Do you really want a spatula that is so valuable, you can't be comfortable tossing it into the dishwasher?' He shrugs and adds, 'You've got to try things. You never know where it will lead.'

In the kitchen are remnants of several items that were tried and then abandoned. In one corner is a former hydroponic garden with a small fake plant in the middle. 'It's one of those cheesy toys that dance around when music is played,' Selker says, picking up the plant. It had been hooked up to sensors so that it danced whenever water or nutrients needed to be added. But the vegetables died anyway, several growing seasons in a row.

'Did it work?' Selker asks. 'No. Was it a good idea for a student to explore how food could be grown in the kitchen? Certainly.'

One item that does function is the video link with the Media Lab's sister facility in Dublin, Ireland. Because of the time difference, there was no one in the faraway kitchen during a recent
daytime visit, but Ju nonetheless tells visitors the technology might apply in the future.

'So many people live alone now, and eating alone is an especially lonely experience,' she says. Multiple cameras pick up her image in the kitchen and send them live to Ireland over the Internet on somewhat jerky streaming video.

'You could be talking to your mother as you fixed dinner, a friend faraway.'

But the small images seem to convey an apartness on their own.

'It's a poor substitute for the real thing,' Selker says. 'But having some sort of contact is better than having none at all.'

In a larger lab where numerous household experiments are kept, Selker shows off the talking mitt. He uses it to touch a lukewarm object and the mitt says, 'Hey, it needs rewarming.' When an object with the proper temperature for eating is touched, it says, 'Hot and ready to eat.'

The mitt cannot differentiate between cooked foods that have different eating temperatures—say, a steak and a pie. But Selker says that with even a few adjustments, the mitt could be useful.

'If your oven temperature is 550, there is only one thing you could be making—pizza,' he says.

'It might tell you to only leave it in for 10 minutes.'

Nearby is the cappuccino machine with sensors taped onto its nozzles and a paring knife that Selker plans to equip with a sensor to test the bacteria level in meat to determine if it has gone bad.

The devices that are aimed at the group's more theoretical endeavors are back here too. Student researcher Mike Li is working with the Eye Tracker, a rectangular device on a computer keyboard that tracks exactly where he is looking.

On the screen are numerous circles, each with the name of a food or kitchen item inside, such as pie, fridge, cake, plate, ice cream, apple and sink. Whatever circle Li happens to be looking at becomes red, and if he looks back and forth between two items several times they begin to move together. If he stares at one circle for an especially long time, it becomes green.

On Li's screen, ice cream is green. 'I like ice cream,' Li confirms.

Selker says he's not yet sure how this technology will be used, but perhaps to figure out the process of planning dinner. 'I believe there is a complex thing going on in my mind when I prepare a meal,' he says.

Out in the hallway, Marvin Minsky—probably the most famous researcher in the field of artificial intelligence—is chatting with colleagues. What did he think of all these futuristic kitchen projects?

'I think the important thing is to implant people with something that could provide the mitochondria [in cells] with what they need,' Minsky says. 'Food is just something to supply the batteries in your cells.'

Hearing this, Selker—who equates food with family, friends and joie de vivre—quickly counters with the question, 'What about loneliness?'

'I don't know,' Minsky says. 'I've never tried it.'