

# Slave Cook -FCS Feasibility

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The first question about the feasibility of FCS is a technical one, whether it can be mass-produced at a reasonable cost.

Most of the automation components required can be found in a variety of food processing equipment. Portioning, for example, is a trivial operation that is carried out wherever a package or bottle is filled.

The hitherto unknown item that causes the most puzzlement is the Slave Cook, which will replace most of the kitchen utensils and appliances that the cook currently uses. From the name 'Slave Cook' it can be deduced that it is an element subordinate to the Master machine, belonging to the vendor, which ensures that each Slave Cook receives exactly the right set of ingredients according to the recipe ordered by the customer, to be executed by the Slave Cook.

In the design of the FCS, in order to keep costs as low as possible for the Slave Cook, we have taken into account the fact that the ingredients that he has to process according to the recipe are delivered to him in an orderly fashion, so that he does not have to recognize them, but simply has to remove them from their designated place in the Shuttle Trolley, mix them or heat them according to the recipe to prepare the meals. From the beginning, I kept these operations as simple as possible.

From my experience of many decades and from execution with my own hands, based on my own concepts, of many prototypes of electromechanical automations, I realise that this slave cook can be well realised with techniques that are common, for example, in the automobile industry. But to convince the doubters, I searched the Internet for opinions on the construction of an individual kitchen automaton. I found the affirmative answers on the Reddit website under the heading futurology, and I present 10 of these answers below.

**But I must convince you that a Slave Cook is feasible**, simple and affordable.

The standard tendency at this point is to deny it, saying: "If it's so easy, why hasn't anybody done?"

In my unsuccessful search on the Internet for **family kitchen** automations that can replace a cook, I found a discussion forum (Futurology) where 10 very knowledgeable commentators have posted their opinions. Their statements confirm that my technical solution is simple and good.

These 10 opinions are quoted here, I recite from them what is essential (**bold**) for such a kitchen machine, also how I solved the problem. Most of them are convinced that home cooking can be automated, but the question is why it hasn't been done yet. For the sake of clarity, I marked positive opinions about the possibility of an automated cook in **bold** I have *italicized* the negative opinions or doubts.

In principle, all 10 commenters think that such a cooker is feasible.

In fact, they express ideas that I had when I designed the FCS system, but I went much further to solve all the problems they raised.

To be quite clear, I do not need such an assessment.

I am very clear in knowing that my invention is capable to fulfill the affordances at a cooking machine.

This reference is just to prove that other interested parties to that topic are judging similar / comparable.

[https://www.reddit.com/r/Futurology/comments/fr34x3/can\\_cooking\\_be\\_automated/](https://www.reddit.com/r/Futurology/comments/fr34x3/can_cooking_be_automated/)

### Can cooking be automated?

1) I see a lot of recipes which require little to no cognition and just basic dispensing and mixing actions.

**Talking from engineering point of view, these stuffs can be automated by electro-mechanical systems.** If we fix the dispensing amount of food/spices and time the actions such as changing heat level, dispensing order, stirring, it will be possible to create various recipes. What are your thoughts about this? Also, **keep in mind I'm not talking about culinary treats or so, but the food most people eat during their busy workdays.**

[Semifreak vor 4 Jahren](#)

2) **Of course it can. Why wouldn't it? It's just mixing ingredient and applying heat. Have you seen those machine wok places?** Samsung has a kitchen helper robot arms. These things are sluggish now, **but the baseline principle is simple.** Heck, some are talking about robots doing surgery let alone cooking something.

If you **want to think if something can be automated or not, break it down to the most simple actions and see if you can mechanize those. As we advance more and more, the answer becomes more and more 'yes'.**

3) *Yes, robotic arms for cooking is not a good idea to go with.* Human hands, vision, smell, taste and cognition work together in an extremely versatile way to cook food. **Breaking down the cooking process into smaller steps/actions should be the way to go and i don't see any problems or issues to mechanize the same.**

But why haven't these things reached the market, yet. At least preliminary prototypes. The **Thermomix mentioned in the above comments was just a fancy mixer/blender** with a heating element and has controlling units for these.

4) **Simple things like cutting veggies, frying chicken, and boiling pasta could definitely be done be robot.** I imagine a world where there's a third robot hand doing the heavy lifting of cooking while a person is just pinching spices and sauces.

5) I think the main issue is that **most peoples basic cooking habits require a lot of ingredients, personally I probably have a minimum of 50 ingredients in my kitchen.** So you either need a way of dispensing these or a machine that can physically go through a pantry/refrigerator. I think the only way it would be possible is an integrated pantry/fridge where **food is loaded into bulk containers and can feed directly into a central automated cooking unit.** *Of course the cost of this and lack of flexibility is a massive barrier*

• [vor 4 Jahren](#)

6) *Yes, I too see this as a major concern.* **But instead of complete automation, i was thinking about a tray kind of thing which can inserted in the device. The device would be able to cook one recipe at a time and all the ingredients(chopped/diced/shredded) needed for that recipe would be filled in the tray.** For spices we can have like 6-8 spice storages built into the device. I think this many spices should be more than enough for general day to day cooking. And **obviously we need water and oil storages too. With these dispensing units, mixing mechanism and a heating element, I think a small compact device should be possible**

[ponieslovekittens vor 4 Jahren](#)

7) I've occasionally **thought it would be convenient to have a countertop device, kind of like a bread maker, but that makes meals. Plug it into the wall, give it a water pipe, and when you want dinner you pour a pre-mixed dehydrated packet in, and it hydrates and cooks it for you. Combine it with an actual breadmaking function, and you could very reasonably get something like customizeable pot pies.**

[shyven vor 4 Jahren](#)

8) **Only thing I can add to this conversation, is GET AN AIR FRYER!** We have had one a month. Just making toast in it is worth it, makes better toast than a toaster. I use it for all kinds of things, and Youtube is your friend.

• OP [vor 4 Jahren](#)

9) Airfryer would not be able to cook complicated dishes like pasta, salads and other stuffs. **Sure, i agree air fryers are pretty good. But they come under accessories rather than a whole standalone device**

[Eh\\_I vor 4 Jahren](#)

10) *I probably wouldn't mind cooking if there was automatic cleanup of all the dishes, pans and utensils. With an automatic machine there still would be disassembly and cleaning the machine.*

**I fully agree with commentators 1, 2, 4, 7, 8, and 9 that the problem can be solved by simple electromechanical means.**

Commentator 3 states that robot arms (with expensive "analog" movements) are not a good idea, which I also stated in my description of the invention. He also comments on the well-known Thermomix, very expensive and

fashionable, probably very popular because it has electronic functions, not always essential, but gives the impression of modernity.

**Commentators 5 and 6 are even closer to the FCS theme.** They raise the issue of "cooking habits require a lot of ingredients" "...and all the ingredients (chopped/diced/shredded) needed for the recipe would be filled in the tray." They point **at the real problem that procuring and dosing ingredients for a private kitchen is about impossible**, with view on of the costs. **Yes, it is precisely this problem that I have already solved by dual automation.** According to the customer's order, the FFC unit (= the seller) prepares sets of ingredients that correspond to the recipe, fresh, weighed and perfectly ordered, to be processed at the desired time by the Slave Cook in the consumer's kitchen. They shorten the processing time enormously by the absence of packaging and by providing all ingredients (how you see it in cooking shows in TV) and by granting high quality with exact quantities at low price.

The customer no longer has to worry about food supply and dosing, because the SlaveCook has it perfectly dosed and prepared for processing. It also offers an unbeatable flexibility of combinations, according to the thousands of existing recipes (or self-created recipes), a unique element that no other supply route offers.

The answer to the question "Why hasn't such a machine been built yet?" is probably that the FCS dual automation system hasn't been designed yet.

A human hand cannot physically or economically compete with a powerful machine capable of running thousands of recipes. And probably no one has yet thought that a powerful machine (in the FFC) could supply thousands of Slave Cooks belonging to thousands of customers. In fact, this is only economically possible because of the cooperation of these machines, which are sophisticated and simple enough to replace the old manual system that is so present in everyone's mind.

Comment 9, I quote: "But they rather come under accessories". Here he makes a distinction between the main machine and the auxiliary tools. This principle is often used in the FCS system. The SlaveCook is designed to replace a lot of kitchen equipment that is (in total) quite expensive. But not for the SlaveCook.

By rationalizing the function of the drive motors, eliminating the individual housing of each appliance, eliminating the many cables, plugs and sockets, saving space, etc... real money can be saved, but this is sacrificed in favor of automation elements that save the most precious thing: the consumer's time and effort.

Finally, comment 10 raises one of the most vexing problems of food processing equipment: cleanliness, which, if not observed, leads to real mechanical blockages and machine breakdowns, in addition to the health aspects.

But even this problem has been solved in the FCS system by several measures, such as the separation of the "hot" cooking area from the area where the cooked food is delivered. There is also an effective cleaning strategy that makes use of all the functions offered by the "Energy Block". The SlaveCook moves dishes, plates, cutlery, tools and utensils into this area for cleaning, where it uses the centrally located Energy Block. This provides a choice of high-pressure water, steam, vacuum and air jets for cleaning.

In particular, the FCS system has the advantage that the food received at the FFC is identified according to hygiene standards and, after storage (in/out) and individual portioning according to the customer's requirements, it goes directly to the customer's kitchen, where it is processed in a short time and without loss by means of simple mechanisms and then placed on the plate. This eliminates the need for sensory identification, the most expensive

element of automation. The elimination of these intermediate steps makes the double automation of the FCS, which is in principle very simple, affordable for the customer. Unlike many new solutions to minor problems, it is a real alternative to the manual system. And it is better than that.

The description of the invention, also translated into English (see appendix Other.Pdf), shows many additional possibilities and actions that can be carried out with the help of the SlaveCook, which, once defined according to a specification, can be developed and produced in millions at affordable prices.

This makes the FCS system, with its simple structures, far superior to any system described so far.

FCS also has advantages during a pandemic. It can be ordered from anywhere at any time, avoiding crowds.

Of course, FCS customers also order pizzas.

The production price (ingredients, etc...) of a Margherita pizza is 0.76 euros (=Google). At FCS, the price will not be much different, but the pizza will probably be tastier, with fresher, less "industrialized" ingredients (it is known that fresh, less industrialized food is more beneficial to health). And it is environmentally friendly, avoiding all packaging waste.

[www.freshfood-zero-waste.de](http://www.freshfood-zero-waste.de)

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