Daily, cheaper and fresher food through automation.

FCS
Food Chain System

A foreword:

We all notice that food has become more expensive. Worldwide statistics show that on average one third of the food produced is not eaten. On a global scale, this represents a loss of one trillion dollars p.a.($1,000,000,000,000) to the detriment of our budgets, the warming of the atmosphere and the degradation of the biosphere.

Dirty, non-recyclable plastic packaging produces both greenhouse gases and insidious microplastics.These tend to accumulate in the brain, with negative consequences that are still incalculable. (To know more, go to my website https://www.freshfood-zero-waste.de/ and click on “stop wasting food” All of this, the food, the 33% **that is thrown away and the packaging for the ever-growing landfill, passes through our hands,** imperceptibly because of habit.

A). The Food Chain System (FCS, ™) eliminates the shortcomings and **costs of manual labour by using machines that waste nothing** and greatly speed up food processing, making what ends up on your plate fresher. It is the shortest, fastest, zero-waste supply chain and green retailing that saves money.

It is a unique, automated, digitalized, healthy system (no hands touching the fresh food).

The uniqueness of this solution can be proven at FCS, my invention, by the WOISA report (**W**ritten **O**pinion - **I**nternational **S**earch **A**uthority of 03.06.2024, see Current Status at https://www.ip-coster.com/PCTCostCalculation?id=PCT/DE2024/150001 and comments below). **We will show that the way food is distributed to consumers worldwide is totally obsolete**, resulting in the huge losses mentioned above.

The preponderance of manual activities is overwhelming, costly in money and time, and needs to be replaced by automation accessible to the masses of consumers, such as our FCS solution.

What has been done worldwide in this respect? Very little, despite many costly efforts. The problem has been wrongly addressed if we interpret the state of the art correctly. With FCS, we can get processed staple foods on our plates more like our favourite food, without the effort of a cook or a family member.

We want to receive the fruits of the field or of the slaughter of animals in the form of dishes cooked exactly to our liking and as fresh as possible. But today's trade in attractively packaged food, put on and taken off store shelves by hand, prevents us from achieving these results. It is nothing but refinement by complication of ancestral trade, today with large shops, but in principle no different than 2000 years ago in Rome, see the still existing building, **Fig.12** in the document "Stop wasting food..”.opened earlier.

We will do away with packaging. Today we only eat (part of!) their contents. Modernization consists only in that, like bringing them by car instead of carts, but over longer distances and streets designed long ago.

FCS Offers the advantages of a highway! (For a good understanding of the speed of the process, see point 24 of the attached file "Detailed description".)

FCS, an affordable automation, allows us to quickly, individually and cheaply put on the plate the recipe ordered over the Internet. The food goes from the producer to the plate without the intervention of human hands, without polluting waste, with audiovisual information, without browsing the shelves or wasting time, fresher and healthier.

The FCS technique is **based on a double master-slave automation, which allows to distribute individual portions to each consumer in the crowd.** For this purpose, the "Master" automation is located at the seller, and the "Slave-Cook" completion is done in the kitchen of each consumer, now without a chef and the paraphernalia of outdated expensive tools.

By revolutionizing the journey from producer to consumer, stopping, portioning and packaging, unnecessary stages that do not bring any advantage are now avoided. Such automation is still missing in current practice.

Analyzing the 500 pages of the WOISA assessment and the news presented in publications and on YouTube, the mistakes that led to this situation are obvious. **No one has realistically raised the issue of automated cooking in individual households, or the environmental impact of manual trade** (See Tab.1 in "Competitor Markets.pdf.).

Modernization efforts have only very recently focused on parts of automated cooking to reduce staff for fast food, especially burgers and pizza, or on partial modernization of some processes related to in-store sales, especially avoiding checkouts)

B) I present the causes of failure for individual production, which can replace the chore of cooking. Economical mass production based on individual orders **is practically impossible without a game changer**, which has not existed until now. FCS offers a solution with economical automation that can become the kitchen standard of the future. (see Slave Cook Feasibility.pdf , Competitor Markets.pdf , and the website, click Description.

The structure of the FCS system, with the dual Master-Slave solution, for example for a community of several thousand consumers, is realistic and economical, as the consumers' Slave Cook machines can, at an affordable price, transform the kitchen into a unit for finalizing the orders given to them, without the work of a cook.

The prerequisite for this, however, is that Slave Cook receives from the Master machines the sets of ingredients, dosed with gram precision and perfectly ordered, so that Slave Cook does not have to identify them by sensing (the most critical and expensive operation), but takes and cooks them ready for consumption.

The "Slave Cook" is therefore essentially a simple electromechanical mechanism with a thermal processing function for the ingredients, a simple "pick, cook & place" machine, controlled by the central computer of the FCS unit. This is the "brain" that registers the orders and carries out, through a database, the accounting and the payments for all the consumers.

FCS has a planetary structure, where the "Fresh Food & Service Center" sales unit represents the "Sun" that distributes raw portions of food and recipe codes to thousands of "Slave Cooks", the "Planets" that will supply consumers with freshly cooked food at the chosen time.

With this structure it is possible to achieve what was impossible until now, **individual service of thousands of consumers from a single source, where the "Master" automaton with a cycle of a few seconds can serve thousands of "Slave Cooks",** each of them carrying out their own cycle - so-called automated cooking, which will last 10-20 minutes.

During this time, the consumer will prepare to sit at the table.

Brief explanations:

Practically feasible automation requires short output cycles, but cooking almost always has a mandatory thermal need of tens of minutes. The centralized realization of tens of thousands of portions according to each customer's taste would mean a huge investment in thousands of machines, not to mention the problem of the rapid distribution of hot portions, as they are offered, for example, in restaurants.

The solution to these problems, and **the exclusivity of FCS is the completely different systemic organization of food distribution by splitting the automation process into two sequences** "Master" for the seller and "Slave Cook" for the consumer, just two steps from his table, as shown above.

The key to success is ultra-fast, individually automated portioning, less for a child, more seasoned for its father. Every day, by preference or necessity, our meals are placed on our plates in completely different portions, which, in order not to be too small, are usually oversized, leading to the huge food waste mentioned above. Before it becomes a meal, food has a long way to go, it is now portioned for commercial packaging, and only then is it taken out and treated by the chef according to local customs. There is almost no guarantee that the result will be as good as it should be.

FCS can do this because the first operation, which determines all the stages up to the plate, is the exact portioning in sets according to the recipe and the details specified by each consumer. This is done by the seller's "master" machine, located in the "Fresh Food & Service Center" for thousands of consumers, with only seconds long cycles.

Distribution: Today, it includes the shopping list, going to the store, choosing from the shelves, queuing at the checkout, ... and ends with putting the meals on the plate. It is a long, complicated cycle involving many hands.

With FCS, once the order is sent over the Internet, the two machines involved execute everything, day or night, at the desired time.

Only the sets of ingredients, placed in an orderly manner by the "Master" in the "Shuttle Trolley", must be transferred to the consumer, the owner of a Slave Cook, who will process them and finally put them on the plate.

The functional coordination of the two types of machines by Shuttle Trolley is the essence of FCS as defined by the first patent claim. The transfer can be done by taking over the "Shuttle Trolley" by the consumer or by any other means, such as, for example, autonomous cars guided by GPS, as in the system Yandex, active for several years in Moscow. (See Table 1)

Cooking: An eternal topic of discussion, culinary passions, successes and failures have accompanied mankind since its birth. But for those who don't have the time, talent or desire to cook, it becomes a chore.

And a large part of it is only the preparation of the necessary ingredients, a purely mechanical selection that can be perfectly performed by automatic machines, in this case the "Master" portioning and distribution assembly from "Fresh Food & Service Center" mentioned above.

FCS will not discourage or hinder hobby chefs, on the contrary. It can provide them with fresh and dozed up raw materials according to an order given in this system, for those who want to cook in the traditional way. Even the Slave Cook can help them, because by interrupting the automatic mode, any hobby chef can fulfill his creative intentions in the manual mode. ..... *And if you like this project, please support us by spreading the word or by any other means you find appropriate...*

By Cornelius Lungu