Deutsche Fassung auf Anfrage!

Hello, Germany! How do we save 100 000 000 000 Euro/year?

We put an end to one-way packaging!
The shortest, fastest, waste-free supply chain =
Food Chain System - it's an Eco-Trade to save your money.

This presentation focuses on the delivery of food to retail stores. At present, we can only buy food in a cumbersome way and with unbelievable losses. This is due to the current, what we call "manual", quasi monopolistic distribution system, which excludes other modern methods such as automation and digitalization. With **the Food Chain System (FCS) we want to offer a cost-effective,** modern, fast and healthy alternative.

Motto: Why laborious when it can be fast and cost-effective?

The big difference between FCS and manual shopping is that in FCS you only buy what is on your plate, while in the supermarket you buy everything that is in your shopping cart. Thanks to "good marketing" and deceptive packaging, the **difference can be up to 35%, which translates to approx. 1280 €/ capita loss** per year, also about **100 000 000 000 minus for the German economy** (plus environmental pollution!).

FCS does not sell food off the shelf, but exactly what you want according to your recipe. The TechnoKoch is an automaton in your now tidy kitchen, which takes care of the preparation of the food without your help. The table of contents helps you to find what you are looking for.

Our abbreviations:

FCS= Food Chain System, the new for your better supply,

FFC= Fresh Food & Service Center, your day and night fast seller,

Trolley= Your shuttle case (instead of packaging!)

Technocook = Sleepless servant that gives you more time and fresh food.

Table of contents: Please choose the topic that interests you the most. I recommend starting with **point 1 and then continuing with point 3, then 7 and 21, 22. …**

1) FCS for all, general presentation:

Do you want to:
> eat better and fresher and save (at least) 30%?
> no longer have to cook and wash dishes every day?
> share the benefits of the new system with everyone? (win-win-win situation for you, the environment and retailers),
> be able to choose quickly and easily from thousands of recipes in a web library?
> eliminate packaging waste, colorful brochures in the mailbox and queues at the supermarket?

The idea behind this is a revolution in the food trade. Imagine this: You come home and use the FCS. In place of the "old" kitchen is the TechnoCook*, a piece of technical "furniture" with many conveniences. It takes the food delivered in the trolley* and prepares your next meal whenever you want. You receive all the information you need via the display on the front or via your cell phone.

When you get home from work, you can put your hands in the "Clean Storm" for a few seconds, which cleans them without wasting paper, while the "Drinks Boy" serves you tea, hot or cold coffee and much more. And the TechnoCook* announces that the dish you ordered is ready. Enjoy your meal!

Grocery shopping without packaging This is something completely new, a new future for the grocery trade, a step towards automation, a step that will give people more free time.

But the reason for this idea is quite different.

It was the **problem of discarded packaging** and the question of how this enormous amount of waste (237kg/capita per year*, (see point 23) could be avoided for the sake of the environment.

What is outdated about today's **"manual" system with wholesale markets and endless shelves**? The manual system is almost as old as mankind, what is new is the single-use packaging with plastics that become harmful microplastics.

Food is packaged in small units designed to fit standard quantities. They are packaged in such a way that they are difficult to recycle, e.g. with glued films, stickers, composite materials.

This packaging not only costs money (more than 5% of the value of the goods), but is also time-consuming and material-intensive, both in terms of use and so-called "disposal".

However, the buyer does not get what he/she wants or needs, but what is available. In particular, the customer does not receive the required quantity, but a standardized quantity, i.e. more (and more expensive) than desired or even less.

The packaging (in type and size) meets the criteria of the manufacturer or retailer, but not those of the customer.

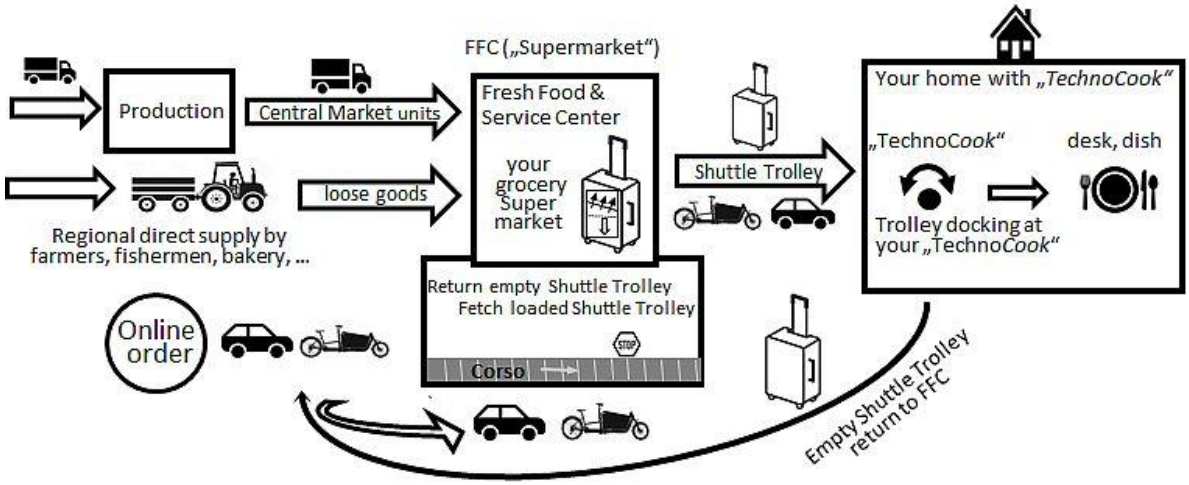
The product packaged in this way sits on the shelf or in the grocer's or supermarket display for some time and is eventually bought by the consumer, no longer completely fresh.

From this point on, handling and hygiene (bumping, dropping) are in the hands of the buyer.

If the product is well packaged, this is usually easy.

Once emptied, however, the packaging becomes waste, a problem that has not yet been solved.

This is because the "disposed of" packaging reappears. For example in Poland, Thailand or the Sargasso Sea. The best solution is to get rid of it from the outset, or more precisely: not to use it in the first place. That is the FCS principle.



The automatic cooking machine, the TechnoCook, processes the ingredients delivered in an orderly fashion "blind", thanks to the succession of the portioner. It gives "its masters" more free time instead of tedious chores. For hobby chefs, the TechnoCook can be switched to manual operation to meet special requirements.

Once the customer has been identified, access to the conveyor belt is granted and the "trolley*" can be removed. The "trolley*" from the previous purchase (with the leftovers) can also be returned to the Corso. The leftovers are processed into animal feed etc.

2) Field of activity The field of activity of the FCS extends from **the production of the ingredients of a food product in their original form (unpacked) to the finished dish on the consumer's plate**.

In comparison, the **activities of a modern supermarket are limited to the sale of pre-packaged goods** until they leave the store. How complicated this sale is today can be read under point 23.

Note: HelloFresh's system works in a similar way, only slower, more expensive and with a smaller range of products, all packed in "boxes" that become waste. Also, you have to cook "by hand" at home and the ingredients delivered are standard portions rather than individualized.

If you still have some patience, read on to find out more about the many benefits of the FCS system, and if you are creative, find out how you can contribute to the progress of the FCS project.

3) Advantages - disadvantages of >>FCS >>>

Advantages of the Food Chain System for the food trade

> The goods are delivered and stored in large units.
> The goods do not have to be displayed on the sales floor, there is no need to put them away / present them.
> The presentation is audiovisual with all details via an APP.
> No sales area is required.
> The salesroom does not need to be heated / cooled / lit / cleaned.
> Fewer working hours are required (stocking and other work).
> There is no need for checkout staff, cleaning staff/working hours are eliminated.
> The number of employees can be reduced.
> No parking lot is required, if necessary, the existing parking lot can be reduced.
> No plastic bags, no paper advertising, no shopping lists, no receipts.
> The portioning and weighing of the required small quantities is automaised
> The goods are automatically fed from the warehouse to the portioning and weighing module.
> The customer does not have to worry about pack sizes, he receives everything as he has ordered it.
> The most precise, individual portioning/delivery/provision of the goods.
> No need to collect and dispose of packaging waste.
> Packaging costs are eliminated.
> No need to justify plastic waste in Thailand (with German company logo).
> The company can advertise the reduction in packaging.
> If necessary, an exclusive distribution right can be used for this system, possibly only at the beginning.
> A new, additional distribution channel is established for a new customer base.
> Presumably secure customers: Yuppies, singles and young families.
> Stronger customer loyalty to "their" service center, contact does not end with the purchase.
> Optional stocking of local goods directly in the product range with little effort.
> Local goods can be accepted flexibly and efficiently and sold as a special service.
> Special goods (fresh fish) can be offered to specific customers (schools, small hotels).
> Such direct offers result in faster sales of fresh goods.

Disadvantages of the Food Chain System for the food trade
> It is a new system that only works as an overall system. It first has to establish itself.

> Customers have to rethink and change their habits (hopefully willingly!).
> The duration of the start-up time and the speed of the ramp-up are unknown.
> The trolleys will eventually wear out, depending on how customers use them.
> The introduction of the new system must initially be massively supported by advertising measures.
> Retailers must be able to handle the small, pre-sorted return quantities (food waste, defined film waste (no external packaging), contaminated cleaning water).

Other FCS features:
Everything is audiovisual and in their own language and script, i.e. in Hebrew, Chinese, Thai or whatever. Finally, you enter a recipe number and the desired (special) quantity in case of deviations. After a few seconds, you are told that you can pick up your order yourself in five minutes or have it picked up by a delivery service.

In addition to the price, each recipe is accompanied by additional information such as flavor, calorie content, preparation time, whether it is vegetarian, vegan, easy on the stomach, suitable for diabetics or as part of a special diet, etc.

The customer will receive further (or fewer) explanations on request. Customers can register for deliveries at specific times. They can also create their own recipes or take recipes from friends, which are then saved in their personal file.

Digitalization also avoids paper waste here. Once the food has been selected, ordered and the trolley* has arrived, it is parked at the TechnoCook and the time for the meal is entered, e.g. "as soon as possible". That's it. The machine reports when the meal is ready.

Sales: **We call the FCS sales unit the "Fresh Food & Service Center" (FFC*).**

It processes customer orders from the in-stock or chilled wholesale range. On delivery, the fresh goods are recorded, automatically stored and released for sale. The available quantity is known at all times. When an order is received, it can be reported immediately that the goods are available and can be picked up (by trolley*).

The individual ingredients are then automatically transported to the portioning station, weighed, portioned and the ordered quantity is packed into the trolley* in the order stored in the recipe, all fully automatically and hygienically.

The customer arrives (on foot, by bike, car or delivery service) at the **FFC transfer point, an easily accessible corso** with sufficient short-term parking spaces.

Advantages of the Food Chain System for the customer
> No need to search for goods on the shelf (time saving of 30 minutes)
> No more queuing at the checkout / taking the shopping cart in and out (20 minutes)
> No need to park and unpark during collection, loading and unloading is drastically reduced. (20 minutes)
> The customer receives his meal as quickly as a pizza.
> They can try new flavors every day, even those they would otherwise never try.
> They don't have to know how to cook and don't need to cook (time saving 30-60 minutes).
> He doesn't have to wash dishes, the "TechnoCook" does that.
> The "Technocook" takes care of the pots and pans (time saving 15 minutes).
> Overall, the customer saves a significant amount of housework.
> The food is prepared on time, fresh and ready at home.
> Any desired information, recorded digitally, is available audiovisually at the click of a mouse
>Communication is bilateral and individualized.
> Information is provided in the customer's language and script (Chinese, Hebrew, Thai, ...).

> There are no plastic bags, no paper advertising, no shopping lists and no receipts.
> The customer does not have to buy many kitchen appliances (some of which are only used a little).
> The customer can save the corresponding storage space for these kitchen appliances.
> Every handle and every item (such as a cooking spoon, a stove or a kitchen unit) saved in this way is an economic advantage that saves time and money and benefits the environment.
> The kitchen can be smaller. This accommodates the trend towards smaller homes.
> The customer no longer has to think about what to put on the table every day, but can choose from the existing range.
> The selection can be made at short notice and no longer has to be planned days in advance, including shopping. He (often she) no longer has to constantly come up with something new.
> Coordinating childcare vs. shopping is easier.
> Coordinating childcare vs. cooking and washing up is no longer necessary.
> In times of a possible further pandemic, shopping can be done without fear of infection.
> Individualized food is recommended in a health-oriented manner. Risks can be pointed out.
> Optional: food can be selected according to the customer's state of health.
> Optional: warnings if recipes are selected that are harmful to the customer's health.
> This option simplifies the diet in the event of diabetes, obesity, allergies, etc.
> Health information warns impaired persons of (potentially life-threatening) malnutrition.
> Pensioners, sick and disabled people receive an individually adapted, healthy diet.
> Special requirements (allergies, low-fat, gluten-free, stomach-friendly, low-calorie, ...) are reliably taken into account without being forgotten and without causing additional expense.

Disadvantages of the Food Chain System for the customer

> Customers have to rethink and change their habits, which may be easy depending on their personality...
> The FCS is not designed for food storage, but can work on a subscription basis.
> Until a delivery system is used/introduced, the customer will have to pick up the trolley*, just as they go shopping every two to three days today. The increased frequency will take some getting used to, at least until an adequate delivery service is available.
> For individual, health-oriented recommendations, the customer must disclose sensitive data.
> The customer has to buy or lease a "TechnoCook". (This can be produced at low cost).

Advantages of the Food Chain System (FCS) in general and for the environment:

> The amount of packaging waste and thus the entry into the environment is close to zero.
> By eliminating the large heated or cooled areas typical of supermarkets, energy consumption is reduced to around a third and therefore also CO2 emissions.
> The region's waste balance is improved by the operator FCS.
> The reusable containers of the trolley* are automatically used hundreds of times.
> The relief for mothers represents a valuable socio-economic component.
> The users are reminded to eat healthily. This reduces healthcare costs.
> The FCS integrates data storage, electronic billing, calorie information, portion prices, nutritional information, consumption recommendations and valuable statistical information
> High hygiene standards, no hand touches the goods.
> There is less noise, there are additional cleaning aids, tidiness is simplified.
> Most cleaning processes are automated.
> Data networking with digitalized medicine enables healthier nutrition.
> Important in times of pandemic: Gatherings of people are avoided.

Disadvantages of the Food Chain System in general: Not yet known. **German Pat. registered 21Feb.2023,** D. Reg.Trade Mark: Food Chain System >>FCS >>>.

4) Invitation to creative people: Your ideas can also change the world! Dear readers, even though the idea of revolutionizing individual food distribution in the world (FCS) only came to me at the age of 75 and I did not file the formal patent application until two years later, in February 2023, I hope that it will bear fruit. If, after reading this disclosure, you have new ideas that can contribute to the development of FCS, you can join me in contributing to this project that can take on global proportions (and you possibly share in the profits). If you wish, you can share these ideas with me, as German patent law offers the possibility of adding such ideas as improvements to the original patent application through the so-called "internal priority". Anyone who notifies me of a new idea in writing (my address under pt.37 P.S.), I am obliged to confirm receipt to you in writing, and if we determine that this idea increases the FCS's chances of success, I will file the additional patent application in good time, naming the author of this new idea as co-author.

You can also participate in other ways: At the moment I am trying to find fellow campaigners for a huge development step to bring FCS to the market. Above all, you have to be convinced that it is worthwhile, and with this in mind I have enriched this presentation with lots of technical and economic details to make the unbelievable believable. It's all about the money, I can't work miracles with my pension! But as the sole owner of the property rights, I have almost unlimited freedom of contract for all kinds of collaborations, as long as there are willing people! **Interested parties with initiative and technical and commercial expertise are welcome as employees, consultants and networkers!** The first success would be to build a demonstrator with relatively little money, the **prototype of an automatic cooking machine (hereinafter: "Technocook") that can replace the conventional kitchen.** Then nobody could doubt the functionality of the FCS concept!

I am always ready to **enter into a dialog with any expert, investor or patent attorney, as no correct results can be expected with the (short) written evaluation procedures that are common today,** which are mostly subject-specific. **I consider it necessary to publish this information in an appropriate manner and to act quickly in order to secure foreign property rights.**

The **target group is venture capitalists, entrepreneurs, creative, energetic people who can make a contribution to the goals presented here** and (so help me God!) state institutions that should and do work for the environment and the well-being of citizens.

5) THE NATURE OF FCS- Part 1: The food environment: automation and cooking still seem to be incompatible concepts today. That's why retailers don't tell us how many of the products we eat every day are produced automatically (frozen pizza, potato chips, canned food, etc.), with some chemical additives not even being declared. FCS does not contain any of these additives and does not burden the environment with disposable packaging. FCS **offers every consumer meal according to their own recipe,** where all ingredients are known and fresh**, freshly prepared and without preservatives.**

6) What the FCS is: In terms of patent law, FCS is a comprehensive system invention consisting of a large number of exclusive innovations with the same priority date. In other words, **FCS is strategically a structured system that tactically relies on exclusive features** and seeks material support to realize it for the benefit of society and the environment,

FCS performance: It shortens the path from food production to the consumer's plate in terms of distance, time and effort. (See the comparison "manual" - FCS, point 24).

7) The task of the FCS system is to replace the actual monopoly-like supermarket system of selling food, (a)

by (b) new economic, automated and digitalized food delivery units with orders via the Internet (smartphone), **in order to avoid the current major shortcomings of (a).**

> The present shortcomings of (a): supermarkets, (in French Grandes Surfaces)

- **they generate high losses** of about one third of the turnover (e.g. for Germany 100 1 000 000 000 euros),

- **it generates pollution due to discarded packaging**, flyers, plastic bags (...)

- **a lot of energy and time is wasted** by heating, cooling, parking, shopping, paying and cart operation

> The advantages of (b) a new automated distribution system based on automation and digitalization;

- It reduces food and packaging losses to zero and avoids the purchase of quantities of food that are not consumed, the **consumer pays one third less than with (a).**

- It offers fast delivery points of the orders given through the Internet **and executed automatically, day** and night,

- The food delivery and consumption process is accelerated without the need for human hands to touch the food before it is placed on the consumer's plate,

- The consumer enjoys a better food quality and an automatic nutritional advice through the statistical screening of his food consumption.

- The audio-visual information of the customer is immediate, bilateral, paperless and offers a choice of language and depth of information.

- The customer can no longer be deceived by the appearance of the packaging.

Solution (b) offers significant advantages for the environment, the buyer and the seller (a win-win-win)

In order to fulfill this task, it is absolutely necessary that **the new FCS solution becomes so cheap that it is affordable for the normal consumer.** If you analyze the prices of existing solutions (you can find enough examples on Youtube, if you search for "robotic kitchen cook"), it is obvious that only very complicated robots **(over 100,000 euros) with limited functions can be purchased,** while the ingredients have to be bought on the market. **FCS avoids this pitfall by bypassing the actual sources of high prices.** The FCS solution does not require expensive sensor technology, as the **identification of the ingredients is carried out by bulk purchasing, including food inspection, and this quality feature is transferred to the customer's Technocook**. This can be very versatile and yet cost-effective, as it only carries out the final preparation steps on site and the **entire complexity of food preparation** with preservatives, disposable packaging, manual unpacking, redistribution, etc. **is eliminated**.

8) The Worldwide Opportunities: FCS offers the opportunity **to create a technology, a new industry** producing "Technocooks" and other FCS equipment, and a new industry, **a low-cost food distribution channel that can be expanded into a nationwide, later a worldwide distribution system**. In addition, a data pool of the highest value for medicine and nutritional science, a new medium for preventive health care**, a simple way to ensure healthy nutrition** for broad segments of the population, and a new branch of safe and easy care for the elderly, sick, and disabled (similar to today's Meals on Wheels) with the guarantee that an appropriate, customized diet is always guaranteed. The development and **implementation of FCS, initially in Germany, together with the striking advantages of the system, will lead to a demand for this system in other countries as well.** This will inevitably lead to FCS products, especially the TechnoKoch, being sold as a commodity or as licensed technology. There is a multiplication of profits here.

9) The core of the FCS consists of purchasing unpacked food (delivered in wholesale quantities) from producers, storing it in "Fresh Food & Service Centers" (FFC) and portioning it as required according to the digitally received consumer orders and making it available for collection (by the consumer).

Orders are placed in the form of recipe numbers with the desired quantity (1, 5 or special quantities). The ingredients corresponding to the (cooking) recipe are automatically removed from the warehouse, **automatically portioned (weighed, divided/cut if necessary) and transferred to the automatic distribution machine,** which fills the corresponding containers (assigned to the recipe) and places them in the trolley.

At the customer's premises, the packages of ingredients are taken by the "Technocook " (cooking machine), which removes them from the trolley **unchecked, recognizes their assignment (defined in the recipe) and uses them to prepare the dish requested by the customer**, see Pt. 26-31.

It is essential for FCS that the ingredients come from the FFC*, are transferred from the trolley* and are removed by the Technocook*. The **interaction between the FFC*, trolley* and Technocook* is as if the automated equipment of the FFC* and Technocook* were directly connected to each other, as if they formed a single automated unit.**

10). FCS is unique because it physically assembles the recipes for all customers from the orders. The required ingredients are **cut directly from unpacked, large quantities of food, accurate to the gram, and used to form ingredient sets according to the recipe order**. The ingredients have to be processed into finished dishes in exactly this order by the Technocook miles away. The trolley helps to meet these requirements. The trolleys **contain suitable small food-safe containers that are used by the FFC machines to transfer the ingredients in the specified order.** In the customer's kitchen, the **Technocook removes the ingredients in the specified order,** places the empty small containers back in the trolley and **processes the ingredients into the finished dish.**

11) Functional overview of the FCS: The linchpin of the FCS is the local sales unit FFC, which functions as a storage, refrigeration and **sales point and replaces the former supermarket, albeit** with much simpler processes.

There are no longer any shelves, and there is hardly any need for a parking lot, except for employees. There are **stops for customers at the Corso, the pick-up station**. The goods are delivered automatically day and night. After identifying themselves, customers can collect their trolley (or have it collected) in less than a minute at the Corso with the corresponding stops. Once the collection has been confirmed, the purchase is complete. The trolley is then transferred to the customer. **The FFC also houses the central computer, which is an important information and control center for the business process.**

The Trolleys are also managed in the FFC. The trolleys are usually returned dirty and must be cleaned. Any leftovers or foreign materials must be recycled. This task is performed by the trolley on its way back to the FFC.

There are tasks that have to be carried out by the staff. Incoming goods must be checked, booked and stored, there are maintenance personnel and personnel for special tasks, e.g. as contact persons for technical problems or to explain the procedure to customers. The effectiveness of the automatic trolley cleaning system must be checked and readjusted if necessary.

The internal movement of goods between the warehouse, portioning and trolley takes place via conveyor belts and/or autonomous small electric vehicles. The food is handled fully automatically, the goods are not touched by hand.

12) How can I shop at FCS?

a) We select a recipe via smartphone (FCS app) and enter the order (e.g. no. 571, 2 portions) as the purchase intention. FFC* gives us the price and when we confirm this, the transaction becomes legally valid. (see "Infrastructure A..C" below)

b) On the way back home, we stop briefly at a free drop-off point of the local FFC unit, where we identify ourselves and receive the trolley with the ingredients of our order within a maximum of 30 seconds. If necessary, we return another trolley in the same way that deposit bottles are returned today, only without a till and without queuing, i.e. in a matter of seconds. The return is credited to the customer's account.

c) At home, you place the trolley in the parking lot in front of the Technocook, who opens the trolley and removes the ingredients. The Technocook prepares the meal according to the recipe ordered and washes the used cutlery, among other things. That's it, the meal is ready.

13) Functions of the infrastructure according to point 12

A) Fresh Food & Service Center (FFC): This is a local facility that replaces grocery stores or even supermarkets if it includes online delivery of non-food products (see e.g. point 17). The FFC* does not have a hall where customers can select and pick up products, but only a limited space where specific problems or business optimization issues can be addressed through outreach or networking.

It also has technical staff for the maintenance of the FCS- automats, who can also solve technical problems at the customer's premises if necessary. Instead of a large parking lot, the FFC* has a covered trolley corso with a sufficient number of stops where customers arriving by every means, e.g. by car can pick up the trolleys with the contents of confirmed orders after identification. The FFC also has a reception point for the groceries supplied by the producers and the corresponding storage facilities where the goods are kept until they are individually portioned according to the orders, i.e. until they are sold. These markets are equipped with automatic machines for portioning, dispensing and depositing the portioned ingredients into the trolley.

These machines start the actual preparation process by cutting the portions. The trolley also contains the mobile "badge" memory card on which the orders are stored. The trolley is then automatically picked up by conveyor belts or small electric vehicles, which take it to the transfer points where it is collected by the customers. The FFC is the physical headquarters of the FCS system in the respective location. Due to its small footprint, the FFC is easier to implement than a store with a similar customer base, as its "production" consists of the delivery and collection of the trolleys. Additional drop-off points can be set up as close as possible to the customers' homes.

B) The trolley essentially replaces the shopping cart, i.e. it hands over the ingredients ordered to the Technocook for preparation, but its role is much more complex. **It shuttles between the portioning and dispensing machine of the FFC and the Technocook,** the machine that completes the cooking process with the "hot" phases of cooking. The trolley contains the reusable containers with the ingredients and, if necessary, the 100% recyclable minimal wrapping, which is used in cases where reusable containers are not suitable.

These are arranged in a strict order so that they can be picked up "blind" by the Technocook in the same sequence.

The trolleys are collected personally by the buyer on a case-by-case basis, e.g. when they come home from work, or distributed elsewhere, e.g. by post or parcel service. The Technocook also collects food waste or recyclable film, which is collected in special containers and handed over to the FFC for recycling.

C) The Technocook is a "Pick, Cook & Place" machine in which simple cooking processes are controlled by electrical signals sent by a local computer that analyzes and monitors compliance with all cooking conditions. To this end, the local computer reads the latest data from the "badge" memory card of the stationary trolley and checks that it matches the data transmitted by the central computer of the FCS and that the operating time and temperatures to which the trolley has been exposed have not exceeded the permissible limits.

If anything is not in order, the buyer is informed before the technocook takes delivery of the goods. If there are no complaints, the Technocook opens the trolley and "blindly" removes the ingredients of the recipe in question for processing. Its electromechanics are as simple and economical as possible, and apart from the temperature probes that guarantee compliance with the recipe, no special sensors are required.

The Technocook almost completely replaces the many individual appliances in today's kitchen, cleans itself and also the cutlery used. It therefore relieves the buyer of the task of cooking or monitoring cooking. The Technocook, in the form of modern furniture with a **display on which the cooking process can be followed**, contains a central unit that supplies all the energy required and is connected to the water supply, with the option of using this energy for other small household tasks.

In addition to all the cooking components, designed in a special shape with multifunctional features, the Technocook also offers the possibility of using a personal computer connected to the Internet and integrated automates for hand washing, drinks and coffee.

14) How does the FCS work? FCS is unique in the world because it has fully automated processes (thanks to digitalization) where it is not possible to grab ingredients by hand or make mistakes. The principle of FCS is to significantly **shorten the path from food production to the consumer's plate (see below point 22 Comparison** "manual" - FCS). With today's manual food distribution, the purchasing process ends when the customer leaves the store. At the FFC, the customer receives the ingredients for their meal with the trolley (=the result of the central stage of automation), **but to ensure high efficiency, the automation process must be continued at home.**

The second stage of automation is the "blind" (i.e. technically very simple) extraction of these ingredients by the second machine, the "Technocook". It moves all objects and ingredients between fixed points (work- or "parking spaces" = "pick, cook & place") according to the computer's instructions, with the cooking processes taking place at certain points. This is how the desired plate-ready dish is created.

The cost-effective FCS- technology used enables processing quantities and times to be precisely adhered to, so that the cooking result is no longer the "random product" of a more or less skillful cook, **but corresponds to a precisely defined recipe, prepared with fresh ingredients** whose quality has been checked when the goods are received at the FFC.

The FCS organization uses special **software to monitor all processes at both the FFC (seller) and the Technocook** to ensure that all problems encountered by the consumer are solved by qualified FCS technicians (everything from a single source), so that the consumer no longer has to send his old, redundant kitchen appliance with "tangled cables" for repair God knows where.

15) THE NATURE OF FCS Part 2: Applications, FCS Medical Support
16) FCS and lifestyle medicine offers the possibility of coordinating medicine with food shopping: To this end, FCS health software is to be developed that makes recommendations while ordering. More health with FCS: Digitalization is opening a veritable Pandora's box, this time with positive surprises. We know how difficult it is to stick to diets or medical recommendations. FCS can help us do this masterfully and free of charge. A

special software is installed in the central computer, which is linked to the recipe library, that provides recipe recommendations to any buyer who requests them when ordering.

We assume that this software is created by a programmer in collaboration with a nutritionist and a doctor and that the buyer enters their biological data and wishes (e.g. to lose weight, gain weight, etc.) or, for example, to improve their blood values. It is well known how devastating an unbalanced diet of fast food can be for health. For example, in addition to their personal and **biometric data, customers can also enter their current blood values, with the natural desire to correct them.**

Using this software and taking into account the seasonal availability of food and its prices, FCS can make recipe corrections or additional recommendations when ordering or as a "standing order" in order to achieve long-term health goals.

The history of human nutrition shows that what used to be very short consumption cycles **are now artificially extended by various preservatives** which, while protecting the interests of sellers, can have a negative impact on the health of consumers. The increasingly rapid development of lifestyle medicine allows us **to conclude that the excessive processing of food and its preservation in plastic packaging is also detrimental to public health.** The comment by a well-known doctor that when shopping for water in plastic bottles, you are actually paying for the packaging and not the health benefits, is accurate. This option makes it easier to eat for common diseases such as diabetes, obesity, allergies, high blood pressure, etc.

> Health warnings warn people with disabilities against (potentially life-threatening) malnutrition.
> Pensioners, sick and disabled people receive an individually adapted, healthy diet.
> Special requirements (allergies, low-fat, gluten-free, stomach-friendly, low-calorie, ...) are reliably taken into account without being forgotten and without causing additional effort.

17) Non-food household products A quick look at the numerous documentaries on the subject of environmental pollution (see images from https://www.youtube.com/watch?v=KD8fcTyjP1E Dokumentarfilm NDR Doku) shows that plastic bottles are a focal point of environmental pollution that is not limited to beverages and food. The amount of packaging for detergents, shampoos, hygiene and cosmetic products, adhesives, cleaning agents and other household products is also very high. In contrast to food, these products are used over a longer period of time, but the packaging has to be disposed of from the household. It therefore makes sense for these products to enter the FCS cycle at the same time as food, where their packaging can be disposed of easily and without "losses". In this way, the advantages of online ordering, e.g. by smartphone from a non-food directory, are combined with the advantage of proximity and low-cost delivery by shopping cart in a customer-friendly way.

These products are ordered in the FCS system. FCS can offer these products in their original packaging or, even better, in even more environmentally friendly FCS packaging and later take them back together with the trolley. For this purpose, these products are delivered in a special additional basket, which is then attached to the trolley. To make this option even more customer-friendly, the empty packaging will be returned to the FFC together with the additional basket and the customer will receive a small credit note on this occasion. There will certainly be further savings opportunities with the help of the FCS, but these will only arise later, when the foundation stone for the FCS has been laid, and are not the subject of this presentation.

18) Water and pastes such as yogurt and mustard are sold in bottles and sealed cups or tubes, often made of composite materials, which leave behind particularly large quantities of packaging that does not always end up where it belongs, i.e. is sent for recycling, which is problematic to criminal anyway. For FCS, this would lead to almost unsolvable problems, **as this packaging, designed for human hands, is very difficult for machines to handle. FCS offers a solution** here with different variants of film bags (e.g. made of PET), which are

suitable for both hand and vending machines and also save an extreme amount of space and plastic. In addition, the leftovers can be easily collected and 100% recycled. What's more, the contents can be completely removed through the passage between the press rollers, unlike cups or tubes, to which something always sticks. Empty drinks bottles float so well that their labels tell us how many thousands of kilometers they have traveled before turning into microplastics and poisoning fish... As they are difficult to transport and collect due to their volume, they prefer to "transport" themselves due to human carelessness, with the result described above.

19) Space and cost advantages through FCS: Example: instead of the 1.5 l PET deposit bottle (€0.25), which weighs 30 g, has a 2 g screw cap made of HDPE and a colorful sticker, a more cost-effective, approx. 0.8 m long "chain" of 8 interlinked, transparent bags, each containing 200 cm³, can be used, which weighs only 8 g when empty and is automatically 100% recycled. The subdivision of the bags enables more economical portioning and the "chain" can also be stored individually to save space. PET bottles for approx. 1600 l content (=8000 glasses of beverage) result in an empty waste volume of approx. 2 m³, which weighs approx. 33 kg; 8000 bags, weighing approx. 8 kg empty, require only a third of the PET weight for the same beverage content. They also have the advantage that 8 discrete quantities of water can be dispensed. Emptied, the 8000 pouches, each measuring only approx. 8x10x0.01 cm, fit into a 10-liter collection bucket. They can be sucked up with a vacuum cleaner if they are not automatically slit open in the FCS and then rolled up, which makes recycling easier. Bags with pasty contents can be emptied by squeezing up to a loss of 1%.

20 Party, leasing and online services The Technocook is designed for medium-sized families of around four people, e.g. to prepare two portions from two different recipes at the same time. The preparation capacity can be increased or decreased by exchanging internal modules. But what if you have 15 guests? In this case, you can order as usual and make use of a special service that prepares the additional portions at a specific time in the FFC and delivers them to the desired location within a few minutes using a delivery service. The offer of special services is useful for both buyers and sellers who are in a bilateral relationship. The FFC is in itself a service unit that offers the monitoring and maintenance of customers' Technocooks as a permanent service according to the "one-stop shop" principle and also has staff, spare parts and a number of Technocooks available for rent or lease. The basic technology is therefore available and even "special portions" for special occasions can be delivered on time. If you don't want to buy a Technocook right away, you can rent one at favorable conditions. The good electronic equipment of the FFC and the central location of this unit, preferably in the middle of a manageable community, also makes it possible to sell household ingredients or items such as shampoos, washing machine supplies and dishwashing detergents (which are necessary as special equipment for the technocook's self-cleaning anyway) that customers need, in addition to the ingredient sets for everyday dishes. In addition to the recipe library, it is also necessary to create an Internet catalog of the items and services on offer. The good local electronic networking between customers who have a TechnoKoch with screen and controls can also be used to facilitate local social life, e.g. for a swap or recipe exchange. The ability to return even the smallest food scraps, foil scraps or small plastic items in the trolley to the FFC significantly reduces the amount of waste produced by families, which also reduces the burden on the municipality and waste collection services.

Conclusion: All types of empty plastic packaging that accumulate in the household and in everyday life can, instead of looking for the right garbage can, be sent to the FFC immediately on the way back with the trolley and thus treated properly.

21) "Invisible" potential sources of revenue: In France, most purchases are made in stores known as "grandes surfaces" and it is easy to imagine the energy losses this generates both in winter and summer. In comparison, the energy consumption of the FCS is estimated at around a third.

The FCS (FFC) has no customer turnover (problematic in the event of a pandemic), requires a much smaller area and probably does not need to be set up outside cities.

The time lost for changing trolleys (instead of parking and maneuvering) is reduced to less than a tenth. The inconvenient shopping times in stores are restricted and perceived as disruptive; FCS is accessible day and night. The society is forced, with little success, to prevent non-recyclable waste from being "recycled" on the garbage heaps of the poorest countries, which in turn results in illegal transportation, child labor, etc. Who can do the math?

Products packaged in this way also cause losses at home, as the packaging has to be opened (accessible to moths) and disposed of, and the ingredients used to prepare the food have to be portioned. Time and effort is spent on cooking, cleaning cutlery etc. - unpleasant activities that can be avoided**. By eliminating single-use packaging, FCS eliminates the cause of these problems**. It is obvious that anything that is difficult to express in monetary terms leads to an extension of the cycle from production to consumption of food, which is also a deterioration.

22) Direct savings of FCS customers. We will compare the FCS, the new delivery mode not yet published, with the "manual" purchasing mode used worldwide to understand why a change is necessary. The extreme reduction of waste disposal possible **by using FCS can bring huge benefits for the environment, citizens and society, for Germany up to 100 000 000 000 Euro/year!**

The waste mainly consists of packaging materials (tens - hundreds of 1 000 000 000s of pieces?). These have a standardized size that does not correspond to actual consumer consumption. As the management of leftovers is complicated, they **are often thrown away or kept for later use, forgotten, they spoil, etc., resulting in a large amount of food waste.** Basically, **we buy more than we need, which is wasteful because of the packaging alone.**

We find what we want in it, but usually more because manufacturers offer standardized packaging and not individual packaging.

HelloFresh, an established system on the market, writes, and I quote:

"*Now you can reduce your food waste - with HelloFresh.*

We deliver all the ingredients in the exact quantities you need for your recipes. This means you waste 21 percent less food when cooking than when shopping in the supermarket." In fact, we buy 21 percent more and also pay for the packaging, at **least 5 percent of the total value**. We could save **26 percent of Germany's food turnover of 287 1 000 000 000 euros**, (2022) that's almost 75 000 000 000 euros!

This time we get the quantities needed for full HelloFresh portions. But even these (standard portions) are packed in "boxes", so they are a little more expensive, and anyone who eats less than the standard portion is still wasting something. .... so there's waste here too, not to mention the cooking time, which HelloFresh often quotes as 40 minutes. Only FCS offers truly individual portions, because when ordering you can specify a quantity coefficient, 1 for the full portion and higher or lower depending on how much or how little someone eats. And all at the net price of the ingredients, which you can see when you order online.

Looking to the future of FCS (see point 3 above, Advantages of FCS), we are saying goodbye to colorful but often hard-to-read packaging and information on paper that was once a tree and is now waste. Audiovisual FCS information on the smartphone can also be easily read or heard in the preferred language and provides further useful information, which becomes visible with one click.

Food that meets our needs can be prepared without our presence.

According to more recent sources, the direct savings are even higher;
s. "Focus" online Monday, 25.12.2023, https://www.focus.de/earth/experten/expertin-dominique-ertl-das-mindesthaltbarkeitsdatum-wird-zum-klimakiller-in-der-kueche_id_259522520.html
Hier werden *„unglaubliche Zahlen“* genannt, ich zitiere:. …*“Umso schlimmer, dass es knapp **35 Prozent** der angebauten Lebensmittel **gar nicht auf den Esstisch schaffen**.“* (Translation: Here *"unbelievable figures" are mentioned,* I quote: *. ... "All the worse that **almost 35 percent** of the food grown does not **even make it to the dinner table**.")*
Then FCS could even save over 100 1 000 000 000 euros (287x0.35=)! (For more on the problem of waste, please see point 23.) These figures always refer to packaged food; this means that what is actually consumed costs 187 1 000 000 000 euros. This amount, sold in the FCS system, would be 5% (-9.35 000 000 000 euros) cheaper because the ingredients are not packaged. Using these **figures as a basis, the total saving would be 109 000 000 000 euros to ensure a faster and better supply (with fresher goods), with each citizen saving 1280 euros a year.** These alone could be sufficient reasons to quickly start developing equipment for the FCS system.

23) Plastic is becoming a "cost driver" pollutant! Who would have thought that modern, but non-natural plastic would become a "Trojan horse" in the biosphere?

However**, the way out of this tricky situation is simple: FCS,** an alternative to manual distribution; this will eliminate disposable packaging and also plastic inputs into the natural environment. This is the logical response to a European directive, quote:

EU directive on packaging waste.<<< https://eur-lex.europa.eu/homepage.html https://eur-lex.europa.eu/eli/dir/1994/62/oj?locale=de >>>
„…… Die beste Art, Verpackungsabfall zu vermeiden, ist die Verringerung der Gesamtmenge an Verpackungen.“ (end of quote) (Translation *"..... The best way to avoid packaging waste is to reduce the total amount of packaging.")*
This is exactly what the FCS is consistently striving for.

With the FCS it can be proven that the senselessly wasted money will remain with the people and the state after the introduction of the FCS and that the expensive, senseless plastic collection will slowly disappear worldwide. The **savings potential for Germany alone is around 100 000 000 000/year!** These savings can be used to finance several million in development costs and then also the production of FCS systems! In addition, the huge areas of supermarkets can be used for other purposes and also reduce CO2 emissions with much lower energy costs. So that you can see for yourself, I have included the links to the websites with reputable information on these losses: https://www.focus.de/earth/experten/expertin-dominique-ertl-das-mindesthaltbarkeitsdatum-wird-zum-klimakiller-in-der-kueche_id_259522520.html
Montag, 25.12.2023, 09:25, *Auszüge, Zitate*:

„Eine unglaubliche Zahl: Ein Drittel aller produzierten Lebensmittel schafft es gar nicht auf dem Esstisch - sondern landet im Müll*…. ist ein Thema bei der diesjährigen Klimakonferenz mal wieder viel zu kurz gekommen: Die Lebensmittelproduktion, **die für mehr als ein Drittel der weltweiten Treibhausgasemissionen verantwortlich ist.** Umso schlimmer, dass es **knapp 35 Prozent der angebauten Lebensmittel gar nicht auf den Esstisch schaffen.** Das heißt: **Insgesamt gehen weltweit 9,3 Milliarden Tonnen CO_2-Äquivalente allein auf Lebensmittelverluste zurück. Das entspricht in etwa den jährlichen Emissionen der USA und der EU zusammengenommen.“***

(Translation: Monday, 25.12.2023, 09:25, *Excerpts, Quotes:*
"An incredible figure: a third of all food produced doesn't even make it to the dinner table - but ends up in the bin.... *one topic has once again been given far too little attention at this year's climate conference: Food production, **which is responsible for more than a third of global greenhouse gas emissions.** All the worse that **almost 35 percent of the food grown does not even make it to the***

dinner table. This means that a total of 9.3 1 000 000 000 tons of CO_2 equivalents worldwide are attributable to food losses alone. This is roughly equivalent to the annual emissions of the USA and the EU combined.")

https://www.destatis.de/DE/Presse/Pressemitteilungen/Zahl-der-Woche/2023/PD23_50_p002.html

„Zahl der Woche 237 Kilogramm Verpackungsmüll pro Kopf fielen 2021 in Deutschland an *Seit 2005 ist die Pro-Kopf-Menge an Verpackungsmüll um 26 % gestiegen“*

„Deutschland bei Verpackungsmüll EU-weit an erster Stelle“ Translation:

"Number of the week: 237 kilograms of packaging waste per capita generated in Germany in 2021 *Since 2005, the amount of packaging waste per capita has increased by 26%"*

"Germany ranks first in the EU for packaging waste"

https://www.youtube.com/watch?v=KD8fcTyjP1E Dokumentarfilm NDR Doku „Plastik - Die Recycling-Lüge“, Dieser Titel sagt Alles! („Plastik- the Recycling lie“- This title says it all!)

By eliminating approximately 35% of "waste" (including disposable packaging and its consequences), it can be demonstrated that the new solution is economical, beneficial and economically valuable for all. With only a fraction of the costs saved, FCS can be introduced in some units, which will then compete with the "manual" ones. Then the market will decide. .... The savings in CO2 equivalents should also be emphasized; imagine what driving packaging waste back and forth means for the environment and for people.

It is clear that **the current situation**, in which tens of 1 000 000 000s of (potentially unnecessary) environmentally harmful food packages are used practically everywhere in the world**, is completely inadequate to today's technical possibilities.**

24) Comparison "Manual" – FCS: ordinary, **existing processes are carried out manually**. In detail: Suppose you want to go shopping. You drive to the supermarket, look for a parking space, park and take a shopping cart. The goods are offered in manageable quantities, you take what you need and a little more that you don’t need, push the shopping cart to the checkout, where you have to wait a little, then, when the elevator arrives, drive to the parking deck if necessary and reload the goods into your shopping cart, bring the shopping cart back, take the euro back with you, drive home with what you have bought, unload it there and carry it into your apartment. There you put the food in the cupboard, in the fridge and in the freezer. **All by hand, in several individual steps.** When meal time approaches, you take out the food you bought, clean out the fridge, cupboard and freezer, clean and prepare the ingredients and control and monitor the cooking process on the stove. Then you wash the pots and pans. But the food is ready.

FCS processes are digital and automated: You place an order containing exactly what you need for the meal you want. A courier service (or you yourself) picks up the trolley, a kind of suitcase, from your Freshfood Center (FFC*) and places it in your (rented) Technocook. The Technocook knows what you want to eat. You determine the time.

Compared to “manual” cooking, the energy consumption should be around a third.

Let’s briefly compare the path of freshly produced food **from the place of production to the consumer’s plate** in two scenarios;

a) The “manual” solution used in retail today, which practically excludes the automation commonly used in other sectors and has serious environmental disadvantages,

b) FCS, a system that eliminates many unnecessary work steps through automation and digitalization in order to achieve the goal faster and more cost-effectively.

Here is the distribution comparison: “manual” – FCS, two-column, read mode; **a brief characterization of the two systems is facilitated by the colouring of the background. It refers to the processes that take place after production up to the consumer’s plate.**

Automated processes appear on a green background, manual processes are highlighted in yellow and environmentally harmful processes appear on a pink background. Manual” distribution processes (as in the supermarket), *which are unnecessary and do not appear in the FCS version, are highlighted in italics*. **The left column is dedicated to “manual”** processes (current, global state), **the right column to automated** and digitized processes, which are only included in the FCS concept.

"Manual" process:	**FCS process**
Production > (*first portioning, by type of packaging: (splitting into several variants increases the number) >packaging)*>transport to the supermarket, (packaged goods) > *(placement on the sales floor, (aleatory lay time). > Stick on price tags >removal by customer, >placement in shopping cart, > removal before checkout >, value determination at checkout, > payment, >placement in shopping cart, >transfer to trunk, >removal at home, >unpacking >new portioning according to recipe, >disposal of empty packaging,) ….. The meal, (cooked under supervision,) is ready and >eaten,> then tidying up, washing up, etc. >(Waste and leftovers are produced).* All of these activities take about one hour per day. This list of procedures alone shows that automation is not possible with today's means. FCS fundamentally changes the procedure and makes the impossible possible and even profitable. Below, a Time evaluation of the processes in the manual (supermarket) and FCS variant	Production, > Transport to the FFC in unpacked retail quantities, > Goods receipt = delivery release with entry on the website, > Customer order > Customer orders are portioned, distributed on trolleys > Value determination, (display) >Confirmation, trolley release, > Storage for later actions such as shelf life warnings, health assessment, long-term values) > Trolleys are brought individually to the "Technocook" > The Technocook takes the ingredients from the trolley, places the empty reusable capsules and any foil residues back, processes the ingredients into the desired dish and offers it. >After the meal, the customer places the used dishes inside the technocook, which cleans itself and the dishes inside, collects the leftover food and places it in the trolley for recycling. Some washing-up liquid is produced, but no waste. Human involvement is minimal and only takes minutes.

Time evaluation of the processes in the manual (supermarket) and FCS variants

Variant SM	Time scale min.	**Variant FCS**	Time scale min
Production	0	Production	0
Pre-portioning	2	Transport to FCS	30
Packaging	3	Ordering	1
Transport S-markt	30	distribution acc. recipe	2
filling of shelves	20	pick-up, transfer time	20
waiting time	180	Trolley deposit at Tech.cook	1
checkout	5	Cooking, automated	15
Transfer time	20	plate filling	2
moving, parking	5		**71**
unpacking	5		
portioning acc.recipe	10		
waste disposal	2		
leftovers collect	1		
cooking survey	30		
plate filling	3		
	316		

The cumulative benefit of FCS **is the time saved (for citizens**) and thus an important social gain that can increase the competitiveness or prosperity of a society. Two important differences can be easily identified from this color-coded illustration:

> **The manual system can practically not be automated** (highlighted in yellow, only the harmful packaging, which is not necessary with FCS, is produced automatically here:

> In FCS, automation is almost complete (green), so that in the bulk business the prices for the actions are practically negligible and these are also reduced in terms of numbers.

> If we look at the time required to perform the operations, **there is a large discrepancy in favor of FCS (71 vs. 316 minutes).** This means that potential losses due to prolonged storage of sensitive goods are drastically reduced, especially as there is no loss of time due to overnight storage in the FCS system.

The FCS system goes one step further than Hello fresh, as **it offers completely individualized portions that each customer can influence from purchase to purchase, allowing for even greater savings on food.**

25) Conclusion: In FCS's view, the current disposable food packaging is useless, generates many different types of waste, significantly increases the cost of supplying the population, slows down the speed of sales and **is even harmful as it creates almost unsolvable environmental problems.**

26) Technical details: The most important component of the FCS **(=productive system**) is the portioning and sorting system for filling the trolleys of all customers. **It is also the first and most important link in the automation chain of the FCS** and, together with some type-specific preparation aids, has the task of preparing the ingredients delivered in such a way that they can be processed by the Technocook as simply, easily and quickly as possible into the dish ordered.

The portioning and sorting system as part of the Fresh Food & Service Center (FFC) **performs a new task, but its components are state of the art** and are therefore not explained further. The design and construction of the trolley also pose no particular challenge. The situation is different with the Technocook, an affordable, robust but revolutionary technology.

27) The Technocook for individuals, families and small groups. A final link in the FCS is the cooking machine, the Technocook, which can be rented or purchased by the customer, but is an integral part of the FCS and **embodies and makes available key benefits of the system.** Among other things, it makes it easier for customers to eat by providing them with freshly prepared food at any desired time. It also gives customers the opportunity to creatively develop their own recipes or integrate recipes received from friends. The entire philosophy of the FCS, with its dual automation at the vendor and the customer, aims to make the Technocook affordable and reliable, as described in detail under point 29 "Conclusion".

28) The technocook concept: The principle of double automation **would be jeopardized if the ingredients had to be taken from the trolley and processed by hand,** which would compromise the continuity of the FCS process. The sequence followed from order to plate is the secret of the **system's value for money, as it eliminates the need for complex product identification systems.** The preparation process remains "dumb" (with a good price/quality ratio) but extremely precise, as the ingredients cannot be mixed up thanks to the trolley. The **Technocook is therefore a "pick, cook & place"** machine with a simple control system that carries out movements between fixed points.

29) Conclusion: The duo of the two cooperating "halves" of a vending machine network must be designed in such a way that **as much as possible is done in the FFC** - so that the preparation of the food is simple and cost-effective; the **Technocook should only take over the final, indispensable steps of preparation.**

One of the **main innovations of the FCS is to solve the most complicated problem that a cooking robot can face** when it takes over the citizen's shopping, unpacking and portioning of ingredients under the current "manual" vending system. From the point of view of the FCS, "manual" distribution **not only appears to be**

outdated and harmful to the environment, but also makes any kind of rational automation impossible (see comparison, point 24.)

The "manual" dispensing leads to considerable deviations of up to +35% of the required ingredients being purchased unconsciously, **which burdens German consumers with additional expenditure of approx. 100 000 000 000**! **A waste of approx. 1280 Euro/head takes place in order to damage the environment with own time expenditure!**

I am willing to offer a prize to any automation specialist who can explain to me how the ingredients that the buyer brings home, packaged in different ways, can be turned into a meal that meets our standards and doesn't cost a fortune without the diligent help of human hands.

Imagine **what a benefit it would be for the entire world's population** if this problem could be solved without every family having to spend so much time and effort.

If the techno-cook was built **with overly complicated electronic controls and sensors, the likelihood of "creeping" failures would be much greater**; what if an AI program made a mistake and a child ended up in hospital with a stomach ache? With our Technocook's very simple control scheme, an electrical or mechanical malfunction would cause the machine to "shut down" and notify maintenance personnel.

Apart from the way the Technocook works, the FCS principle is easy to understand, comprehensible and can even be calculated to save time and money.

But the "killer" arguments (see also point 31) will prevail if it is not adequately explained how the Technocook works and, above all, why it is affordable.

The Technocook, the last link in the FCS chain, poses particular problems; there is as yet no affordable food processor or kitchen appliance that could successfully replace the family cook, and the reason is probably price.

How else can it be explained that of the 4,500 or so patent publications on the subject, not a single one has found its way into the kitchens of ordinary people?

30a) Controversies: From conversations with various people involved with the FCS system, it is clear that they cannot properly recognize the importance of avoiding discarded packaging, nor can you measurably appreciate the benefits of automation that are evident in all other industries. There is also the opinion that the Technocook is too complicated and that the FCS system could work without it. This is correct in principle, apart from the complications that the usual individual cooking in the kitchen with ingredients delivered by trolley would entail. Consumers find it difficult to break away from the habit of seeing themselves with a pan in their hands and observing the thermal processes with a certain degree of imprecision. With automation, however, they could be brought to perfection.

Without understanding the purely mechanical simplicity of the Technocook, most people see it as a robot, an association with something complicated and expensive. That is why I would like to describe as clearly as possible how the double automation in the FCS works, why it is affordable for the customer and how it avoids packaging. The portions of ingredients that correspond to the recipe ordered by the customer are cut directly from the freshly received goods. This has been checked on delivery and must comply with the applicable hygiene regulations. What is cut from it therefore corresponds exactly to the ingredients ordered, and additional labeling is no longer required if these ingredients are passed directly to a traditional kitchen or a Technocook. The consumer is inclined to believe that human processing is unproblematic and leads to better results, without thinking about how much time it takes to cook, handle and transport the ingredients, estimate the degree of browning, etc.

30b) Facts, controllable technology: The situation is different when using FCS cooking technology, as the Technocook receives the ingredients in precisely defined portions and when converting the recipe ordered into electronic form, measurements were taken using the Technocook's technology, which has no eyes and cannot smell, but maintains exactly the processing temperature and time specified when programming the FCS computer. So we have perfectly reproducible results here, without the need for sensors to replace the perhaps subjective senses of the human chef. Such sensors, which could replace the chef's senses, do not exist or would be extremely expensive. The FCS system was designed not to rely on such subjective and inaccurate methods. When programming the FCS computer, which is also done with the advice of a chef, the processing time at a certain temperature is set according to the quantity actually delivered by the trolley, which can then be technically perfectly adhered to without any particular complications. So when the FFC portions the ingredients ordered, its computer knows, for example, the processing time, the temperature and whether a mixer is needed. The quantities and processing parameters are therefore already known exactly at the portioning stage, but must be communicated to the Technocook, which is easy in a networked computer system.

In concrete terms, this means that the portioner cuts out the ordered quantities of all ingredients from the delivered and checked goods and places them in positions in the trolley that are also specified by the computer, for example positions A,F,r,t,X,Y. The Technocook, which is "informed" by the computer, can go directly and blindly to these positions, the coordinates of which have been communicated to him by the computer. It takes these ingredients with his "steel hand", without seeing or smelling them, and places them in the processing pots of the Technocook, who treats them thermally or mechanically according to the computer's instructions. After this treatment, e.g. heating, cooking, stirring, seasoning, cooling, etc., the Technocook transfers the processed ingredients to the finishing area, where they are loaded onto a special plate or tray where they can be placed on the plate by hand. This completes the processing cycle, which runs with automatic

precision without the need for a special sensor system to replace the more subjective senses of the human chef. If the Technocook was dispensed with and the ingredients were removed from the trolley by hand, there would certainly be minor "accidents", such as dropping small reusable containers containing the ingredients themselves, or the cook being distracted by a child's cry, etc., in addition to the loss of time for the operator. Such "accidents" can completely unbalance a simple, automated and computerized system, which is, however, perfectly capable of removing and processing the goods placed in the trolley as well as all the returned items, which are automatically placed in the space provided for their return. There is therefore no need for human intervention when two automatic machines work together to place the items at fixed points, without the need for artificial intelligence, which would only involve high costs for more complex electromechanics. The trolley, which is suitable for this function, will only move between the two stations, FFC and Technocook, occupying the predetermined positions, e.g. here A,F,r,t,X,Y.

In this way, the Techno Cook "knows" what it is doing without seeing it, and delivers a precisely prepared dish to the customer instead of the jumble of ingredients that would result if this order were not followed. These minimalist mechanical and electromechanical measures guarantee good functionality without high costs for the technocook.

30c) For the "non-believers": Why should the technocook be affordable for the customer? According to popular opinion, anything that seems complicated or incomprehensible must also be expensive! To disprove this opinion, let's look at some everyday objects that are affordable, even cheap, for the average consumer. We are all familiar with the not-so-simple technology of printers, which, despite their complexity, can now be had for dirt cheap. Or washing machines, dishwashers or other household appliances that are mass-produced, not to mention electric children's toys, which are often astonishingly complex; just think of complex computer driven

robots assembled from Lego bricks. The techno-cook will have a similar complexity: the good concept and the series size can make it cost even less than the contents of a modern kitchen.

30d Technocook, inside". During cooking, various energy sources are applied to the food (vegetables, meat, dough, etc.) in the appropriate manner, dosage, time and temperature.

It makes sense to concentrate all these energy sources (electricity, high-pressure water, steam, vacuum, compressed air, etc.) in one place, e.g. near existing water and waste water pipes, to form an "energy center". To expand the range of oven-specific processes, an oven-like chamber, the so-called "ThermoPress Box", has been integrated into the "Technocook", which has excellent thermal insulation properties in both the plus and minus temperature ranges. Freezing or baking processes can be carried out here at the corresponding temperatures, whereby a change of atmosphere is also possible through steam injection, aerosol or pressure change.

The working space of the Technocook resembles a large cabinet with special technical contents, which is well shielded so that odors and noise do not interfere. The carrier, energy source and storage for the moving elements is the energy center, which is arranged as centrally as possible and can provide all the energy and liquids required for cooking, washing up and additional services. The energy center is easily accessible behind a cover. Useful accessories can be connected here. The technology of the Technocook is therefore located in a "technology cabinet" with a height (Y-axis) of approx. 2 m, a width (Z-axis) and a depth (X-axis) of approx. 1 m each.

30e) Appearance. The Technocook looks like an easily accessible "piece of furniture" with various doors or shutters and a clearly visible display with keyboard, control knobs, connections for computers, printers, etc., in which its technology and accessories are housed. A hand washing and drying unit with waste water extraction is easily accessible.

30f) Cooking: Many technical kitchen operations such as roasting, grilling, baking, flambéing, steaming, stewing, deep-frying, blanching, poaching, etc. can be performed with inexpensive mechanical equipment.

This means that almost every movement of the food, such as turning, shaking, vibrating, spinning, must be possible with versatile drives and, depending on requirements, with special tools.

Cold treatment is also possible for the preparation of cold food. For this purpose, the process areas must be thermally insulated by fixed or movable parts. The "Technocook" is able to clean itself, which suggests that it is also able to clean the remaining dishes after the meal. The leftover food is chopped up and disposed of down the drain or taken by trolley to the Fresh Food & Service Center (FFC) for professional processing.

31) Realization: Third party evaluation of the exclusive FCS automated distribution system: unless someone, an investor or an institution spontaneously decides to invest money in the FCS, one way or another the opinion of experienced engineers will be sought; the likelihood that they will believe or claim for fear of failure that it is not possible and thus the FCS project will die before it has begun is very high. In my decades of experience, this danger was very high, **because the more fundamental an invention is, the more unwelcome it is.**

Conservative rules such as "the better is the enemy of the good," which encourage small incremental improvements rather than necessary radical changes, have a negative impact on innovation. This is an age-old attitude, but it is more virulent than you might think, so Montesquieu's 300-year-old definition, „Le mieux est le mortel ennemi du bien“ ("The better is the **mortal** enemy of the good,") fits better. Unfortunately, to the detriment of individual inventors.

No one is responsible for this. Apart from problems of envy and prestige, the person who considers an invention to be positive and worthy of support runs the risk of embarrassment if something doesn't materialize. If, on the other hand, he considers the invention unsuitable, inferior or unrealizable, he has nothing to lose. There are no specialists for FCS because the project is too new and there is no "Technocook" anywhere.

From around 60 years of experience as a self-employed and employed inventor in various countries, I have unfortunately come to the conclusion **that there is no institution anywhere that shows how to deal with inventions and inventors in order to achieve more results from them.** There are many reasons for this, one of which is human vanity and prestige (when a lot of money is at stake) **to the neglect of practical aspects**. Entire novels could be written about this: pointless if there is no interested readership.

In many companies, there are different rules for dealing with inventions, which usually only relate to inventions made by employees. Hierarchical influences are the order of the day and a certain company psychology must be taken into account. The ironclad but unwritten NIH law (Not Invented Here) applies to inventions made by a decreasing number of independent inventors. **The arbitrary handling of inventions according to rules that are rather intended for production often leads to the (expensive) destruction of the invention project.** I myself have experienced this all too often, the most blatant example being the destruction of my development "Plusmotor" (see also point 33), in which a "business angel" and a US venture capitalist invested a total of around 3.5 million euros and lost through poor financial management. I am reporting on this to warn people so that my most important invention (FCS) does not suffer the same fate. I am interested in clarifying such aspects with any potential business partner in advance.

No technically savvy "reviewer" or professor will come out in favor of FCS because they have enough, mostly personal, reasons against it. In today's specialized world, it is almost impossible to find experts whose range of knowledge is almost congruent with the problems of FCS, which has been my "inventor's bread and butter" for the last 60 years. Under these shaky conditions, the "expert" will feel insecure and will not be prepared to take the risk of a positive assessment. **Without practical evidence, there will be no clear answer to this question!**

The correct answer is therefore: it's about potential 1 000 000 000s in profits, about factories producing the Technocook. .... Wouldn't it make sense to risk a million to test the Technocook? Further steps could be **financed on the basis of predictable key figures, because the overall market (cheaper food for the world) is always there**. I will therefore introduce the "Technocook" in more detail in **order to create a basis for funding this crucial building block.**

32). Prototype making: Given today's specialization in all fields, it will be difficult to find people who can work efficiently to build the first working sample of the Technocook.

From my own experience, I know that **work on the first functional prototype must be carried out with a small group of practitioners with sufficient interdisciplinary experience.** If you proceed in the same way as large companies have done in recent decades, progress will be very slow and expensive. **For the overly specialized, such a task would be comparable to a group of blind people being asked to draw an elephant.** Despite my age, I believe it is necessary to participate as actively as possible in the construction of this prototype in the first few years, and only then to follow the usual paths of conception and realization of the project.

33) Development perspectives: Having briefly touched on the problems of prototype construction in point 32 (assuming that I have also found a development partner with whom a logical-practical analysis of the next steps has been carried out to define the starting position), the first steps towards practical implementation should be initiated. The most urgent thing, **however, is to register the property rights in the most important, most**

populous countries in the world by February 20, 2024, i.e. to secure the future of profits. With these applications, worldwide protection is practically secured for 20 years. On this basis, it is worthwhile to push development all the way to the development of production tools, which secures profits from license sales, technology sales and sales of FCS-relevant products beyond the 20 years.

34) Location, my lab: Preferably Baden-Württemberg, where you can find pretty much everything you need. I also see the existence of my workshop laboratory in the granny apartment and basement of my house in Bühlertal as an advantage. This would only need to be reorganized for the new task and has the advantage that I have day and night access to the workshop with lathes and milling machines as well as a variety of measuring **options.**

Background, short story: As unbelievable as it may sound, I have single-handedly developed a new type of brushless electric motor (SR motors, known as "Plusmotor" see www.plusmotor.de , now unfortunately no longer updated) to series production readiness with the support of over two million euros in venture capital from the USA, which are still very interesting today. The umbrella organization was the then letterbox company "Electric Drive Technology" (EDT), registered in the canton of Zug. Everything was destroyed due to blatant management errors by a Harvard graduate (CFO) and the 2008 financial crisis - sad but true!

Unfortunately, "our CFO" acted according to his favorite motto "**There is no show like Bussiness Show**" and prepared a "Plusmotor Business Show" behind my back with most of the money, with which **he hoped to win tens of millions of euros for industrial production instead of providing me with a mechanic.** On the positive side, he brought two million euros from his American Harvard colleague O., a very competent man. I was extremely **busy building the sample motors for interested parties, developing them further and doing the patent work for the granting of numerous foreign patents.**

The disaster can be linked to the 2008 financial crisis, when the American investor O., who was very busy with his China business, realized that something was wrong with EDT. Most of the money was gone with the preparation of the "business show", the patent terms were shortened, "our CFO" demanded about 120,000 euros back from me with the help of Swiss lawyers because of an alleged loan: another shareholder, a German professor, "forgot" to pay me the salary for several months..... Fortunately, I had read the laws of the Canton of Zug carefully and managed to put the Swiss lawyers to flight with a single sentence, so that I was at least rid of the "debt" of 120,000 euros.

Suddenly, the formerly friendly partners disappeared without leaving me the slightest explanation for what had happened. At least I stayed in my house, and instead of collecting rent for the granny apartment, I continue to run the workshop and laboratory, which are 100% mine, as are the Plusmotor samples that are functional and under construction. I'm the only one who has all the Plusmotor knowledge and know-how, the calculation programs, etc., but I can't pass these valuable things on to anyone else.

I am now 75 years old and have gone from my last good salary to a meagre pension. I no longer thought that I would have any money-making ideas left, and just as I was investing the little money I had in preparing for my retirement, the first ideas for FCS were born, which took me over two years to apply for patent on February 21, 2023. Which brings us back to the much **more important topic of FCS. For FCS, the workshop and laboratory are still important for solving the "little things" that others can't solve.**

35) The future: However, I believe that the time has come to increasingly pass on FCS technology to young people. The Technocook prototype should be built under my leadership and with their cooperation. **Once it has been proven to work by preparing a few dishes, realistic cost estimates should be made with the help of experienced business people, including those from the companies that made the parts, in order to calculate the overall cost-effectiveness of the FCS project.** Based on these calculations, the structure of a

new FCS organization should be discussed with all interested parties and potential license buyers until the further market-driven growth phase can be initiated.

36) Patentable exclusive features; To avoid presenting 39 invention claims here as filed, I prefer to list here in a clearer form the most important exclusive innovations they cover. For a legally binding evaluation of this system, I am prepared to analyze the two documents submitted to the Patent Office together with a patent attorney.

1)) Automated system for food retailing based on orders transmitted via the Internet, the so-called Food Chain System (FCS), in which **a) there is no more disposable packaging,**
b) the operations carried out on the food without human intervention are minimal,
c) the journey of the food from production to the consumer's plate takes minimal time,
d) the processing of the order on the basis of a recipe takes place automatically at the buyer's premises at the time chosen by the buyer,
e) the usual "manual" processing of the order on the basis of a recipe takes place automatically at the buyer's premises at the time chosen by the buyer,
f) the usual "manual" shopping process in the stores and their structure is eliminated, which means a great saving of time,
g) digitized marketing with the possibility of monitoring the eating habits of customers on the Internet,
h) the audiovisual information of the buyer and the accounting of purchases are made without wasting paper,
i) the delivery of goods is made through a transfer system that does not generate waste,
j) the qualitative and medical improvement of the consumer's diet is achieved through software programs that can automatically analyze these parameters and suggest corrections.

2)) An automation system to achieve the benefits of 1), in which the order of distribution of the ingredients required to prepare the food according to the chosen recipe is determined by the contents of the order and is strictly followed until the transfer to the last automation stage, the "Technocook", which processes these ingredients according to the recipe ordered.

3)) Automation system, hereinafter referred to as FCS, **according to 1)) and 2)),** which involves a change in the current methods of food supply and whose technical realization provides **for automation in three different stages a), b), c), where**
a) (= FFC) is the actual sales unit which prepares the food ingredients according to the order in order to transfer them to unit c) with the help of b), **where**
b) here is a special container, which we will **call a trolley, which shuttles between units a) and c) and** contains the food ingredients to be processed by **unit c) (= the Technocook),** which is located in the consumer's home, into the ordered food, in such a way that the coordination of these three units ensures the main effects, i.e. the rapid delivery of what is ordered. i.e. the rapid delivery of what has been ordered. That is, the timely delivery of the food ordered by the consumer, the absence of waste that could pollute the environment, and the identity of the order of delivery and receipt of the ingredients delivered, **so that units a) and c) operate as if they were directly connected.**

4)) FFC, sales and coordination center for FCS activities, providing customers with day and night access to ingredients purchased to order and stored in trolleys, equipped for this purpose with a sufficient number of automated exchange stations with fast service, the FFC being materially equipped with **automatic weight measurement, portioning, preparation of delivery and distribution of food, internal automated trolley transport system to the exchange stations, the FFC serving simultaneously as a control and**

maintenance unit for all FCS vending machines at the consumers and as a meeting point for the consumers with the FCS advisors, all FCS activities being controlled by the Infobank, an electronic coordination and information center for FCS.

5)) Trolley distribution system for consumers, which distributes the ordered products to consumers, protected by reusable transfer equipment, the FFC multipurpose containers and, where appropriate, packaging film residues and food scraps for washing, recycling or recovery, for which the trolley is intended, to the trolley, are specially designed as self-operating containers, the interior of which can be adapted to the type of work to be carried out and which are provided for this purpose with interior partitioning elements into which reusable transport containers or, where appropriate, PET film wrappings are inserted. PET film wrappings for items with an unusual shape (e.g. fish) or for liquids and pastes, which are emptied by the technocook's automatic system, with the residues being collected separately and sent for recycling.

6)) Automatic system for cooking recipes ordered by FCS customers, called "Technocook", that replaces traditional cooking and the work of a cook who receives the required ingredients according to the recipe, without selecting them, **and cooks them according to the "Pick, Cook & Place" formula** in the predetermined order according to the recipe ordered, through electrical signals received together with the ingredients, and that it has the following characteristics:
A) It is controlled by a local computer with controls and displays connected to the Infobank, the central computer of the FCS, which controls all local electromechanical, thermal, self-monitoring and self-maintenance activities and sends preventive control messages to the Infobank when necessary to ensure machine maintenance, or warning messages (e.g. if certain food products spoil). It has a digital-analog interface that ensures the proper operation of all electromechanical and thermal equipment in the system,
B) A compact "energy center", located under the central X-axis of the installation, which supplies all the energy and media required for the proper operation and self-cleaning of the vending machine's cutlery and cooking devices, such as electricity at the required voltage, water, steam, vacuum, compressed air, refrigerant, etc. All the individual units that supply these energies are arranged in such a way that energy consumption and noise are reduced to a minimum. All the individual units that supply these energies are arranged in such a way that energy consumption and noise are reduced to a minimum,
C) A mechanical drive block that ensures the precision of all movements required for cooking in the process tanks, which can be moved or stopped at will to load them, expose them to heat or other environmental influences and then clean them,
D) This mechanical block contains a central cylindrical bearing which is fixed above the drive unit and in which concentric telescopic tubes are rotatable and axially displaceable, ending in radial arms which can grip or release the process vessels or other tools such as agitators etc. and on the outside of this cylindrical tube two radial arms, each ending in a ring which is rotatable on the outside of the cylindrical tube, these arms being extended and fixed by a shield-shaped part to which the process containers or other tools can be attached, and in that
E) the shield, together with the containers and the associated tools, can be rotated through approximately 180° about the axis of the storage block so that the containers attached to it can be transported from the left side of the space, where they are positioned with the opening facing upwards, for loading and processing, and then transported by rotating the "shield" clockwise from the left side, the so-called cooking zone, to the right side, the so-called finishing zone, where the containers are unloaded with the opening facing downwards.

F) To enable this mutual positioning, the pots, the various tools and the axially and radially movable arms of the telescopic cylinders are equipped with mechanical or magnetic clamping devices and have mechanical or electromechanical drives adapted to the respective application.

G) To extend the range of specific oven operations, an oven-like chamber, the "ThermoPress-Box", is integrated into the "Technocook", which however has excellent thermal insulation properties in both the positive and negative temperature ranges and in which freezing or baking operations can be carried out at the appropriate temperatures, with atmosphere changes also being possible through steam injection, aerosol or pressure changes.
H) There are also double-walled containers for processing ingredients in which the intermediate space is accessible from the outside in order to introduce a heating or cooling liquid or to create a vacuum, thus enabling special treatments.
I) The presence of the energy center also allows the use of useful accessories located outside the Technocook, such as simple cool boxes of various sizes for different purposes and even outside the house, which are connected to the aforementioned unit to cool it, or two coaxial hoses, where the inner hose carries a cleaning medium (steam, pressurized water, compressed air) and the outer hose collects the loose dirt and the cleaning medium, which can be separated and removed. There is also a network of pipes inside the Technocook, which is used for pre- and final cleaning of the appliances used and the customer's cutlery.
J) The entire technology of the " TechnoKoch" is housed in a sufficiently large piece of " furniture ", which is equipped with heat and sound insulating walls and has a screen and computer controls at the front for information from the Infobank, working on the Internet or manual control of the TechnoKoch. Also at the front are various doors for accessing the building services and the comfort appliances such as the washing and drying machine, drinks dispenser, etc.

K) The display can be used to follow the automatic cooking cycle, useful instructions and information from FCS-, an audiovisual learning program for operating the "Technocook" by manual control or performing special cooking functions.

7)) Infobank, the central computing, information and control unit of the FCS system, which constantly coordinates the activity of all the local peripheral computers of the customers' "Technocook", receives and processes the orders placed by them via the Internet, contains and updates the recipe library and accounting systems, keeps statistics, has software programs for the functional monitoring of all the equipment of the FCS system and for the biomedical monitoring of consumers, **and informs customers audiovisually through words, images and icons.**

37) P.S., contact; (Documents of my "official" inventive activity can be found from 1966 (color enlarger for color images, Romania): (I came to Germany at the end of 1979).

> from 1972 in "Espacenet" (Corneliu, Cornelius or Iancu Lungu as inventor); many products based on it have been driving in cars all over Europe for 40 years).

> Awards: Gold medal at the International Inventors' Fair in Geneva in 1986 for "Inducond", an inductive-capacitive winding made of "capacitive winding wire", special "Nikola Tesla" prize at the IENA Nuremberg (2013) for "aluminum instead of copper".

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