

Technology in Professional Kitchens



Volume 2

Can a kitchen chef, who doesn't procure new equipment, trim his or her operations somewhat to the direction of a "green" kitchen and therefore contribute to unburdening the environment too? Of course, any kitchen professional can organize their operations in a slightly more sustainable manner and therefore make it somewhat "greener" as shown in the following examples.



DIETER
MAILÄNDER

The Digital Challenge in a “Green” Kitchen

mailänder marketing
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Green electricity is extracted from water, wind, sun, or biogas and not produced in coal-fired or nuclear power plants. A changeover can lead

to ecologically produced electricity flowing from wiring, but it doesn't have to be inevitable. In any case, the transformation changes the demand for environmentally friendly electricity on the electricity exchange. The greater the demand for green electricity, the more pressure is put on the producers to invest in environmentally friendly plants. Perhaps the costs will rise slightly, but that doesn't have to be inevitable either. This decision doesn't influence the procedures in the kitchen at all, but sets a recognizable example, which can be communicated to the guests too. If one follows the report of the Intergovernmental Panel on Climate Change (IPCC) from 2014, 14% of the greenhouse gases come from agriculture. The large consumption of meat in many countries and the large-scale keeping of animals with red meat (beef, lamb, and pork) connected to this contribute significantly to these results. In order to acquire land for the

cultivation of fodder, tropical forests are being cleared. Pasture and forage areas are being treated with artificial fertilizer, whereby laughing gas (N_2O), a strong and long-lasting greenhouse gas, is released. Moreover, cattle in particular give off a lot of methane. That's why advocates of the so-called “climate plate tectonics” recommend reducing offers with meat, especially with red meat but also with white meat and fish, because fishing grounds in many parts of the world are also polluted considerably. Climate protection activists propagate dispensing of every type of meat, poultry, and fish one day a week. If an operation offers several different menus, creating one of them meatless should be discussed. Dishes which use dairy products with more than 15% fat, are also on the negative list of the advocates of climate plate tectonics, due to the high milk yield.

There are many possibilities for a chef to make his or her kitchen greener than it is today, even if one doesn't acquire new equipment. This includes avoiding waste as much as possible from foodstuffs in the production, as well as waste of foodstuffs from the consumption of the guests, patients or residents of retirement homes. According to the



organization United Against Waste, a third of the food generated is thrown away yearly. At the same time, between 800 and around 900 million people are starving. The dining out industry is affected too. In Germany for instance, roughly 1.9 million tons of foodstuffs are thrown away yearly by operations, which offer meals outside the home; according to United Against Waste, 50% is avoidable. Starting points, for example, include offering different serving sizes (possibly with seconds), regular analyses of food waste, an uninterrupted (deep-freeze) cold chain, or the precise control of the goods and materials used.



Digitalization and internetworking require powerful internet connections, which are able to process complex data volumes quickly, all across Europe. This is something frequently encountered in urban centers, however the situation is less optimistic in the countryside. The European Commission has recognized the problem. It compares the digital development routinely in its member states. But the people, who are responsible locally, have to become active in many countries.

DIGITALIZATION AND INTERCONNECTION

In recent years, many product developers of commercial kitchen technology have made their equipment and systems more flexible and more adaptable, have reduced consumption figures, and have facilitated their servicing. Today, new focal points are pushing themselves to the forefront, like for instance: digitalization, interconnection, or financing.

Perhaps at first glance, the innovative connection between financing and kitchen technology doesn't seem to be evident. But it quickly becomes clear if one, for instance, considers the situation of hospitals in nine European countries. In six of them, between 22% and 53% of the clinics operate at a high financial risk (only in Belgium, Germany and Switzerland is the situation of less concern). In high risk clinics, the investment backlog has built up. Badly-needed investments have also been stopped due to lack of budgets. Those in charge of professional kitchens are also looking for cost-neutral alternatives in order to replace their old equipment. Their operating greatly surpass those of modern equipment. Furthermore, the costs associated with repairs are rising. At least in Germany, the situation in senior citizens' homes is often similar.

Beyond the well-known financial models, Winterhalter, manufacturer of dishwashing systems and dishwashers, has developed a totally new procurement variant with pay per wash. The user doesn't have to have any assets, doesn't pay any fixed amount per month either, but pays per washing cycle. For instance, they buy a number of dishwashing cycles per credit card at the manufacturer and receive a code in return. When they insert the card into the dishwasher, they load up their credit balance on the dishwashing cycles, which then works it off. The specialty dealer calculates its costs on the basis of a program, given by Winterhalter. The amount depends on the configuration of the machine and the services of the dealer. A rough guiding figure is 20 to 50 cents per washing cycle. All of the expendable materials, repairs, and services are included in this. The specialty dealer collects the money and pays the manufacturer a user fee of 1.5 cents. With the remaining money, the dealer finances his or her services (for instance, ordering chemical cleaning agents service resp. repair services) and generates his or her spread income. All of the device data are transmitted digitalized. That's why every user has to be interconnected with the specialty dealer and the manufacturer.

COVERING ALL AREAS

Digitalization is the processing of information for conversion or storage into systems based on digital technology. This development makes it possible for

the workers in the kitchen team to read and analyze the data of all of the equipment and systems on computers, smart phones or tablets (note: all these pieces of equipment recognize only two signal statuses: zero and one). Hobart, manufacturer of dishwashers and dishwashing systems and a division of the US American company Illinois Tool Works (ITW) solves the issue with Wash Smart per Wi-Fi, internet, and a multilingual App. The user receives, among others, an overview of the operation costs (consumption of water, energy and chemical cleaning agents) for all pieces of equipment, as well as error messages as push messages, for instance, if a cleaning agent or regeneration salt has to be refilled or the filter cartridge of the osmosis system has to be replaced. The app informs upcoming service operations in due time. Other features are hygiene protocols, usage analyses, or visualized directions so that the user can eliminate malfunctions.

AN EXAMPLE

One of the most modern kitchens in Europe is in Southern Germany: completely networked and digitalized. Its management can monitor each process step of the production, distribution, and serving food without delay. The prerequisite is a connection to high-speed internet. In the beginning there was a vision. A large industrial area in Southern Germany had turned into an industrial wasteland. Several of the buildings, which were partly under heritage-protection, have deteriorated. Max Maier, the owner of Rieber GmbH & Co. KG (manufacturer of mobile kitchen components and inventor of gastronomy containers), recognized its potential, purchased the area and had the buildings repaired step by step. He created a modern campus for new forms of work and lifestyle, which he rented to innovative companies, well-established firms and start-ups. Now creative people are developing future-orientated solutions, for example, for digitalization, internetworking, or



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Photos: Hobart

e-mobility on this campus. The project was clear from the beginning: to make a communicative culinary center available to employees called Urban Harbor, publicly accessible, with different “landing points” for the guests – three front cooking stations (2 “wok” stations for pasta and Asian dishes, 1 station for Pizza from a wood-burning stove), free flow serving areas for six dishes, a patisserie and concession stand as well as taps for beverages. The bistro with its diverse snacks is opened from 8:30 to 17:00 hours. The guests are able to enjoy warm main courses from 11:30 to 14:00 hours. 80% of the processed foodstuffs come from the region. Small pieces of dough, which are bought, are deep-frozen and pre-baked in part for snacks and sandwiches too. However, the pieces of bread dough rise on-site in the proofing oven, then are baked, covered or filled in line with demand. Urban Harbor is a joint venture

of the investors Max Maier (investment: EUR7.5 million) and the operator Andreas Müller. Based on Rieber’s equipment and its control system CHECK, they have a completely digitalized, uninterrupted networked kitchen installed with cashless payment, which may be among the most modern in Europe. It will reach its capacity of 10,000 meals a day by the end of the year. Production, cold meals, and patisserie have their own delivery and storage areas – therefore no paths are crossed. The 35 members of the team check-in digitally in their working clothes and produce the hot food on four lines, mostly in pressure cookers and hot air steamers. The most important production processes are cook & hold and cook & chill. High-power blast chillers cool down the food components within 90 minutes from hot temperatures down to 3°C and store them, as the case may be, at this temperature.

CHECK – THE KITCHEN PROFESSIONAL CHECKS EVERYTHING!

With CHECK, a digital registration and organizational system, data is documented and processes are monitored. Chip-coded GN containers are one of its basics. Each container receives a QR code after cleaning. It classifies the container as ready for operation and is updated as soon as a dish is poured into it. If it is put on a food transport container or a meal distribution trolley, the code is updated again. Therefore, the kitchen management is always able to check, exactly where a dish is located. Underway and during the serving, the temperature of its dish in each container is measured continually. This takes place either in a mobile way by a Bluetooth core temperature thermometer or stationary, in defined intervals by sensors, which are firmly embedded into the containers. The measured data is placed on a cloud of a service provider, to which the users have access to, with local computers. If there is



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no internet available, the data on the chips of the GN container will be buffered and sorted out later. Together with those, which are gathered during the production, CHECK makes sure that every process step can be monitored continually in the kitchen cycle.

BARRIER-FREE THINKING

For Max Maier, digitalization and internetworking are essential topics for the future in all areas of modern societies. Meanwhile, even in our line of business, many manufacturers of kitchen equipment are offering apps for external control of their equipment and systems by means of smartphones and tablets. However, the enormous fast and strongly grown data volume, whose management has no single uniform standard, is a problem. Another problem pertains to the thinking and mindset of many key players even in our line of business. Just a few manufacturers of commercial kitchen equipment recognize the meaning of compatible standards and barrier-free accessible interfaces. These are absolutely necessary in order to connect the data of merchandise management, calculation, hygiene documentation, recipe file, and personnel planning to the above-mentioned. Whereby, it has to be taken for granted that its protection is guaranteed. The activities of the OPC Foundation show that this is possible. This organization looks after such compatible standards world-wide and across all industries. Digitalization and internetworking require powerful internet connections, which are able to process complex data volumes quickly all across Europe. This is something frequently encountered in urban centers, however the situation is less optimistic in the countryside. The European Commission has recognized the problem. It compares the digital development routinely in its member states. But the people, who are responsible locally, have to become active in many countries.

Frozen Food Europe

on social media

