

GLOBAL KITCHEN

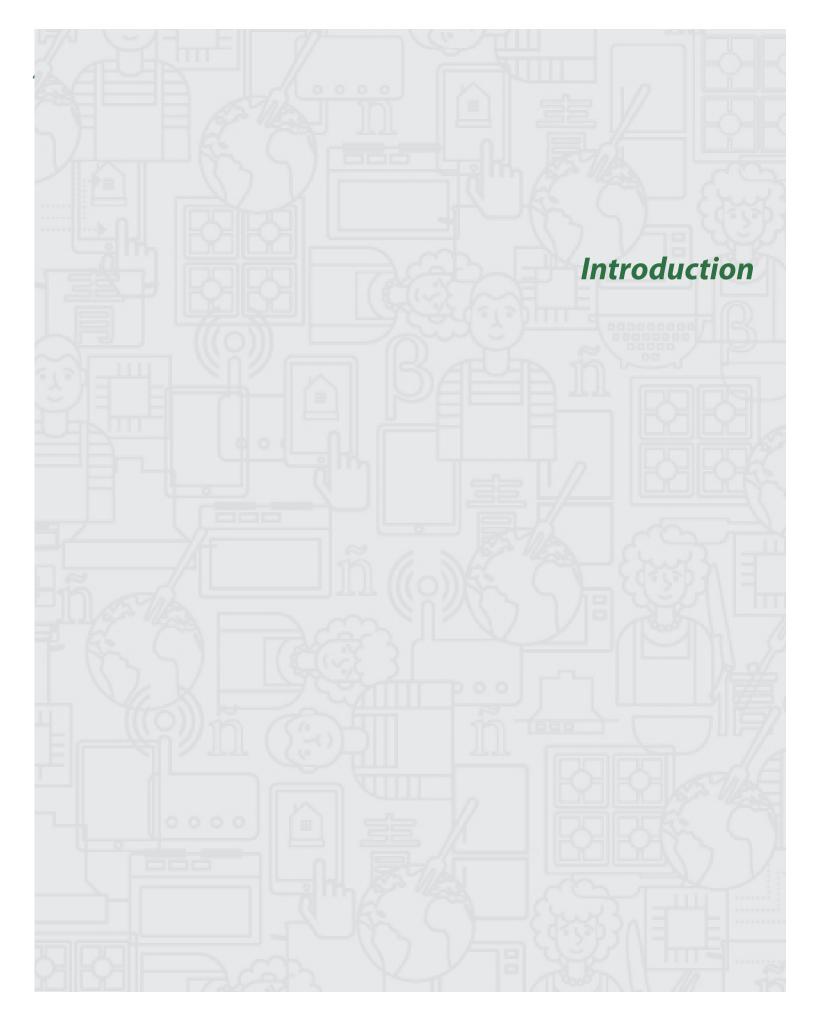
The home kitchen in the globalization era

Insights into global trends and uses of the kitchen and its role in the home of the future





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Globalization drives modern society towards homogeneity, but this trend is not linear because countries are heterogeneous and behave differently based on their geographic, economic and social situation. They also change and evolve at different rates. The home kitchen — as the hub of home life — mirrors these changes affecting kitchen behaviour and customs, and therefore its architecture and design.

For over half a century, the Cosentino Group has been committed to discovering the possibilities offered by innovation in public and private spaces, especially in the home kitchen. Our aim is to research and develop solutions that provide design, add value and inspire people's lives. In this framework, we want to imagine and anticipate how the home kitchen will evolve in the future, with the ultimate aim of

To this end, we have launched the Global Kitchen project, an international platform for analyzing and disseminating valuable knowledge about the home kitchen space. We are pleased to present *Global Kitchen: The home kitchen in the globalization era*, a companion publication to its predecessor, 90 cm Above Floor Level, which has become a benchmark in the professional kitchen industry.

sharing this knowledge with professionals and society at large.

Global Kitchen also aims to become an essential reference tool for professionals and consumers. We invited a group of internationally renowned experts in various disciplines to contribute their views and comment on the future of the home kitchen. We also surveyed a large number of professional kitchen and bathroom store managers in Australia, Brazil, Italy, Portugal, Spain, Sweden, UK and United States, and who have enriched our perspective with their contributions.

I wish to personally thank all of them for their input to this project. And thanks, of course, to users for their trust and to professionals for their daily work, without which we could not undertake initiatives such as this.

We offer everyone our support as we move forward and prosper together.

Francisco Martínez-Cosentino
President of the Silestone Institute

Global Kitchen is an international project that will define the keys for the future of the domestic kitchen.

6 FOREWORD

The magical room

"The best way to predict the future is to create it" Peter Drucker The kitchen has always been considered the heart of the home, probably because it is the only space that historically features a heat source for food processing. However, the kitchen started losing its centrality in the eighteenth century, when aristocratic and bourgeois families began considering it a commoner area and started pushing it to the background. They regarded it as a noisy and smelly place to be kept away from the living room.

In the early twentieth century, the kitchen was subject to a rationalistic revision aimed at making the space an efficient workshop. The famous 1926 "Frankfurt Kitchen" laid the groundwork for how to equip it and give it its own aesthetic, but it still exuded a certain subsidiarity in a minimal and confined space. The revolution arrived soon afterward from the other side of the ocean. Chef Julia Child was the first to turn the kitchen into a TV set, from which famous television shows were aired, portraying the country's social transformation. Julia Child's kitchen can still be seen today at the National Museum of American History in Washington, D.C.

This marked the birth of the open-plan kitchen — unapologetic, connected to the rest of the house, recovering the pre-eminence it had always enjoyed in the home. This shift was possible thanks to technical advances in two fields: appliances and new materials.

In the late twentieth century, the kitchen again regained its status as star room of the house. The kitchen and bathroom went from being shamefully hidden to being proudly displayed. The bathroom became a place for relaxation and well-being. The kitchen was transformed into the magic alchemy box, a place where people could blend the pleasure of cooking and eating. It started filling up with gadgets, accessories and beautiful finishes such as those offered by the automotive industry, always at the forefront of consumer breakthroughs.

In this transformation towards the heightened significance of the modern kitchen — the place where people invest most money at home — the surface material is of utmost importance. In contrast with the ceramic and natural

material countertops used in early kitchens (always fragile and with unhygienic cracks and gaps) new materials offer resistance and aesthetic alternatives. Decorative melamine was a first step, but it still streaks and cracks around the edges. Then homogeneous composite materials emerged to solve all these problems and, most importantly, for the first time offered a single-material solution for the entire surface. The minimalist style managed to express this quality forcefully, almost artistically: kitchens as liveable sculptures.

But that did not go far enough, as we stepped into the twenty-first century. We needed technical improvements, a quality certainly inherited from the Industrial Revolution. With the digital age now in full swing, home automation and interaction need to be leveraged to optimize the kitchen space. But cookie-cutter templates will not do. As Alessandro Mendini pointed out, "no object is the same as another because no person is the same as another.." We expect to be able to customize each kitchen and tailor it to our individual preferences.

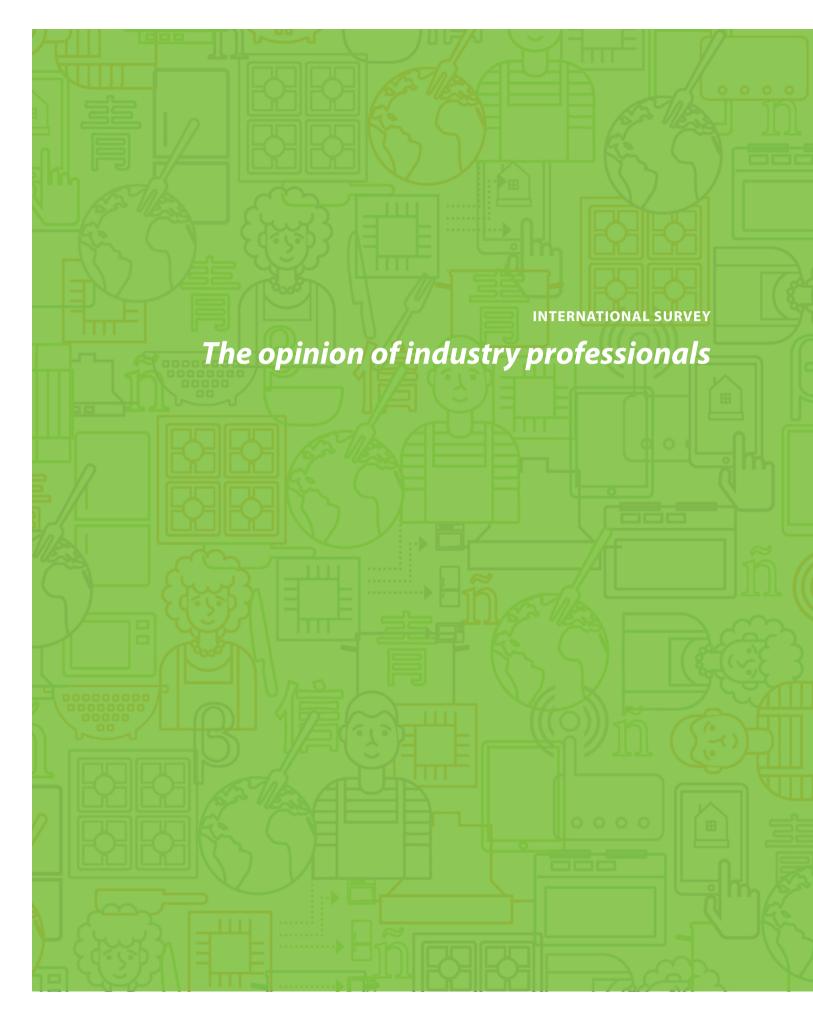
As designers and architects, we imagine kitchens that fit in with the rest of the house and we shun this notion of the kitchen as a sterile food lab. We crave welcoming and noble materials, natural or artificial, but always noble, i.e. without senseless environmental baggage, because we want to create beautiful things but not at the expense of polluting the planet. We imagine a hi-tech kitchen that does not overwhelm users, featuring an understandable and intuitive interface. This interactive touch surface could change shape, colour and texture to fit our moods, helping us cook with almost no energy and no danger. Lighting would be adjustable, and similar to sunlight. And, why not, drawers would open by reading our minds and we would never catch our fingers. We want a creative and powerful kitchen that projects a gentle, versatile and multipurpose look. We want to design a kind of magic capsule that will instruct us by delighting us with the greatest comfort.

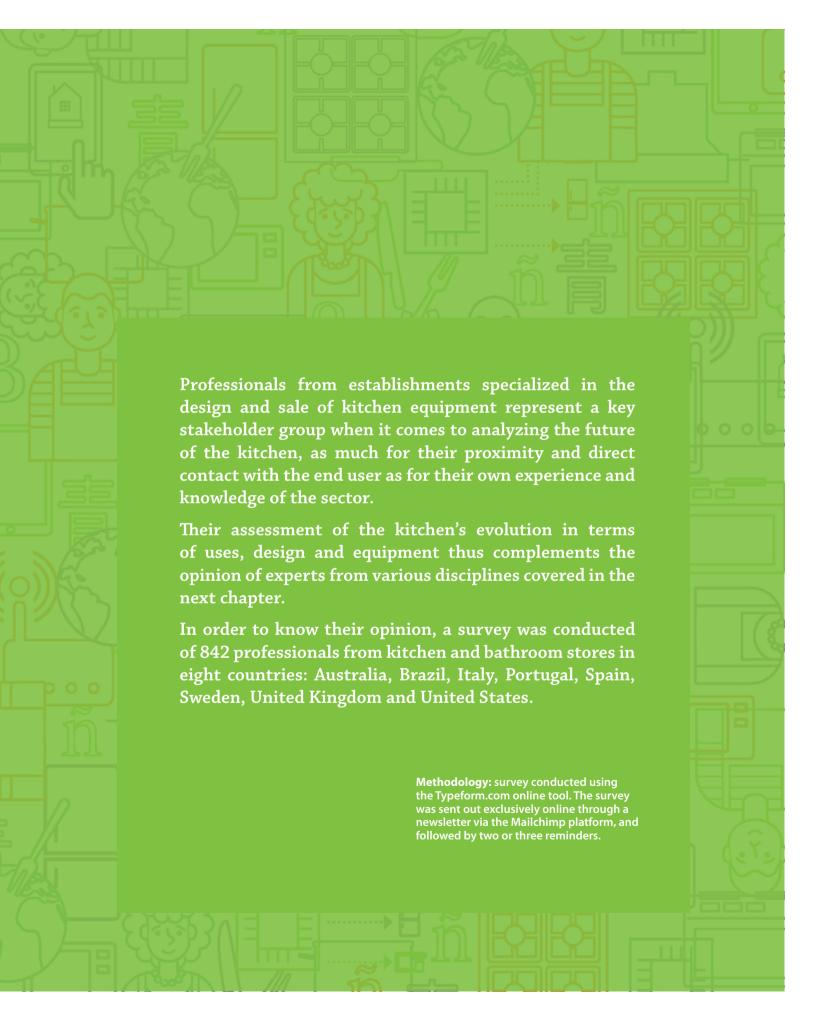
How we use the kitchen will undoubtedly change in the future. But whether we create a sophisticated menu with *haute cuisine* spherifications or a traditional paella recipe, we will always want to experience it like an ancient ritual with family and guests: sharing a joy-filled space that can enthral and heal us (because that will be as important as eating).

For Julia Child, "the most beautiful thing you can cook for someone close is a recipe with love".

And there can be no doubt that the kitchen of the future will be human-centred and brimming with love.

Juli Capella
Architect and designer





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The function of the kitchen in the home

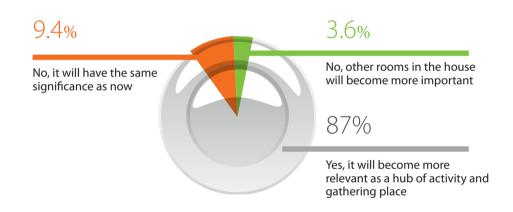
Is there a trend for the kitchen to become more prominent within the home?

Nearly nine out of ten professionals (87%) confirm the tendency for the kitchen to become more significant in the home, compared to 9% who believe that it will preserve the same importance and 3.5% who consider that other rooms will become more important.

This opinion is unanimous across all countries consulted, although it is more pronounced in Brazil, Portugal and the United Kingdom (above 90%), while Australia seems more reluctant to acknowledge this new role (74%).

Because of the growing relevance of the kitchen in the home, 82.8% of professionals believe that the role of this room should play a more important role in how collective home spaces are planned and built.

The kitchen will consolidate its place as the main activity and meeting space in the home, so more attention should be paid to it in home design and construction.



INCREASE IN KITCHEN RELEVANCE BY COUNTRIES

More than 90%

Brazil (94.5%) Portugal (91.4%) United Kingdom (90.5%)

From 80 to 90%

Spain (87.6%) Sweden (84.8%) United States (81.6%) Italy (80.9%)

Less than 80%

Australia (74.2%)

What will the kitchen layout be like in 20 years' time?

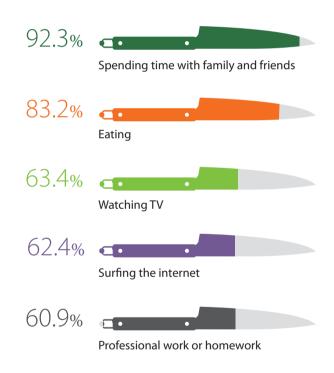
In terms of kitchen layout, practically 100% of respondents opt for a space integrated with the rest of the home: 81.5% consider that it will open onto the dining room and living room, and 18% believe that it will be combined with the dining room, with a separate living area.

Broken by countries, Australia (32%), United Kingdom (21,5%) and Spain (20%) are more reluctant to join all three rooms.

Closed kitchen, independent of the rest of the house 18.17% Combined kitchen and dining room with a separate living area 81.47% Open kitchen onto the dining room and living room

What activities will take place in kitchens in the future?

The kitchen will be consolidated in coming years as a meeting and leisure space for family members. In addition to food handling and cooking, the kitchen will be the hub of other activities which traditionally have been carried out in other areas of the home.



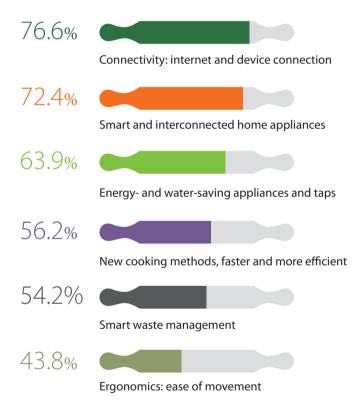
OTHER: although at a lower percentage, the activities mentioned also include reading (40.5%), resting (33.3%) and playing or enjoying a hobby (24.6%).

12 INTERNATIONAL SURVEY

The kitchen of the future: trends in equipment and design

What are the main technological changes that will affect the kitchen in the future?

Connecting the kitchen to the internet and devices (tablet, mobile phone, computer, wearables, etc.) and smart appliances stand out as the main technological innovations in the short to medium term, ahead of sustainable solutions — water and energy saving or waste management. By country, however, there are differences in the key innovation.



KEY INNOVATION BY COUNTRIES



New cooking methods

Australia Brazil





Italy United Kingdom

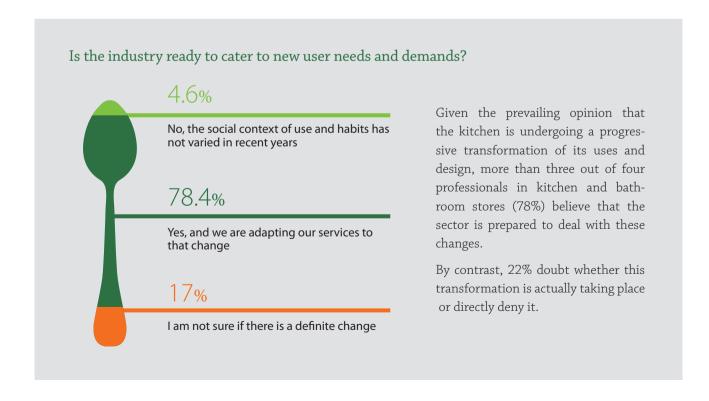


United States, Sweden, Portugal, Spain, United Kingdom

What properties and functions should a countertop have in the future?

According to industry professionals, countertops of the future should allow users to cook directly on the surface, besides incorporating connectivity and acting like a control panel.

43.1%	30.2%	25.3%
Cooking directly on the surface	Self-cleaning	Weighing scales and nutritional analysis
41.7%	29.5%	23.2%
Connectivity: internet and device connection	Interactive screen	Self-adjusting cooking area
	Interactive screen 29.1%	Self-adjusting cooking area 7.4%



14 INTERNATIONAL SURVEY

What kind of kitchen style will your customers ask for the most?

In relation to users' kitchen style preferences in the future, respondents are virtually evenly split between modern-minimalist and classic-traditional. Other options, such as sustainable kitchens or kitchens with more professional equipment, trail far behind. There are also marked differences between countries in terms of preferred style.

STYLE PREFERENCE BY COUNTRY



Modern

Australia Spain United Kingdom



Classic

Brazil United States Italy Portugal Sweden 67.6%

Modern (minimalist, no handles, striking colours, gloss)

61.9%

Classic/traditional (trims, natural stone, hanging lamps)

17.6%

Energy efficiency and saving

13.4%

Professional (for foodies, laboratorystyle, fully equipped)

11.9%

Rustic (solid, natural materials, stripped materials, aged materials...)

8.4%

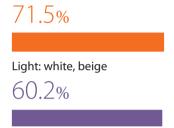
Retro-vintage (up-cycled, imitation material and old products)

6.6%

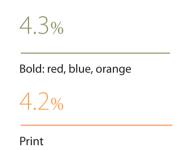
Industrial (loft, relevance of internal building structure: brickwork, cables, tubes...)

What colour range will be most requested in the next few years?

Most kitchen store professionals agree that users will opt for clear colour ranges (white and beige) and colour combinations, ahead of dark (black and grey) and soft tones.



Colour combinations



What will be the preferred materials for decorating the kitchen?

Quartz is clearly the material with greatest prospects in the kitchen world for industry professionals, who cite it in more than 87% of cases.

After quartz — the preferred material in all countries — significant differences can be seen. In Brazil, there is a greater preference for ultra-compact materials as a second option and in the United States, glass and wood are cited in a higher percentage than the average.

87.3%			
Quartz			
42.9%			
Ultra-compact materials			
31.4%			
Natural stone			
Natural stone			
23.9%			

2	22.7%
Po	orcelain
2	22.3%
C	oncrete
2	20.31%
W	ood /
1	2.7%
Lā	aminate
1	0%

Synthetics

16 International survey

Kitchen refurbishment: criteria and investment

What are the most important elements when refurbishing a kitchen?

The functionality and design of the space will clearly be the highest-rated aspects by users when it comes to kitchen refurbishment. Secondly, clients value criteria such as technology, energy efficiency, hygiene and brightness.

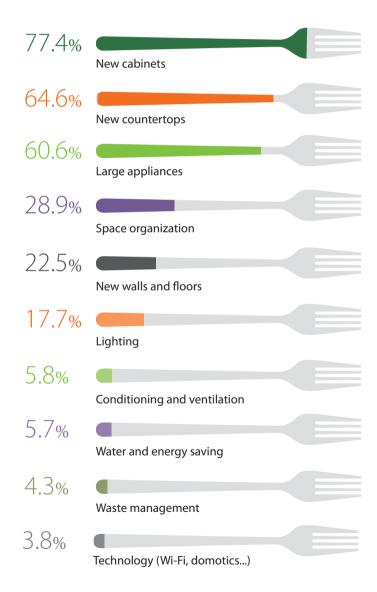
All countries choose functionality and design as the two top factors. It is worth noting that the United States gives high value to technology and the United Kingdom and Italy give high marks to brightness.

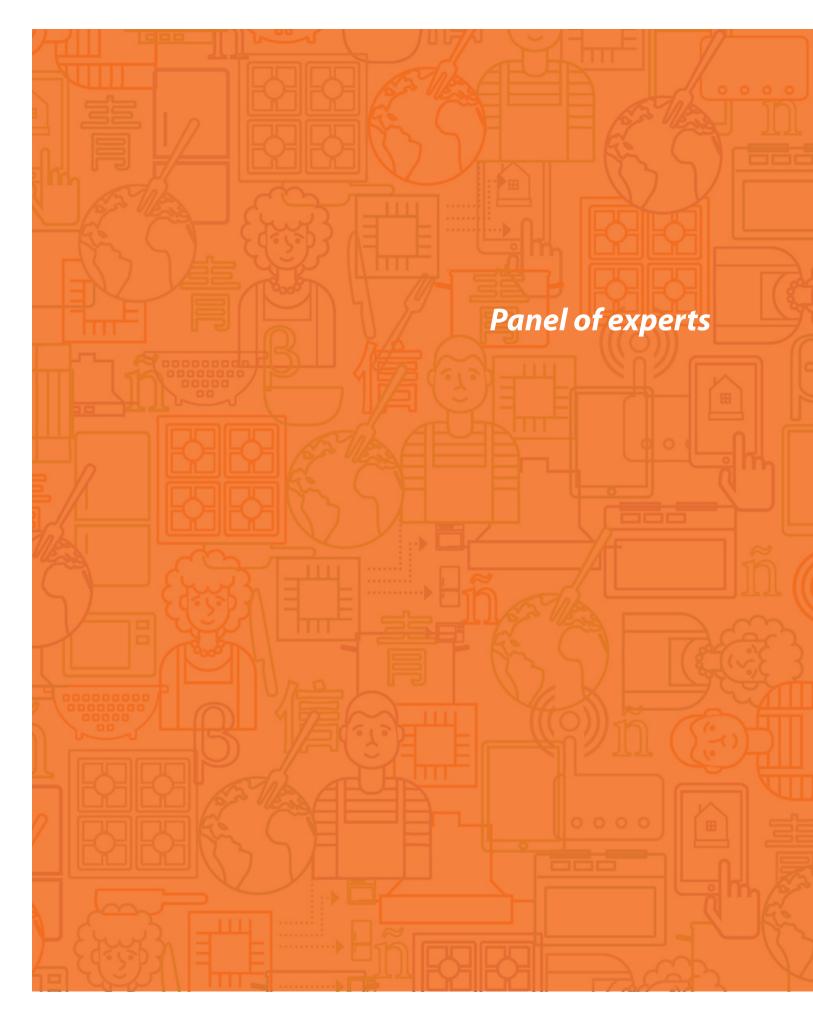
98.7%	39.7%
Functionality / Practicality	Cleanliness and hygiene
93.5%	39.5%
	Brightness
Design	brightness
47.7%	28%
Technology	Equipment (utensils, small appliances)
46.4%	23.5%
Energy efficiency and saving	Tidiness

What is the majority of kitchen refurbishment investment spent on?

Most of the refurbishment investment is allocated to new cabinets, ahead of replacing countertops and buying new large electrical appliances.

By countries, Australia prioritizes replacing countertops, while the United States is the country that gives the most importance to more structural elements (space organization and new walls and floors).







Chef and owner of the Astrid & Gastón

Andoni Luis Aduriz

Chef of the Mugaritz restaurant.

Jonnie Boer

ANDRÉ Chiang

Chef and owner of the ANDRÉ restaurant.

Alessandro Finetto

Einav Gefen

Sandy Gordon

Piero Lissoni

Vayu Maini Rekdal

Ignacio Martín

Patricia Moore

Piero Pracchi

Anabel Rodríguez Santos

Executive Director at the Circular Economy

Susan Serra

Sian Supski

Camiel Weijenberg

Richard Wrangham



Gastón Acurio

Chef and owner of the Astrid & Gaston restaurant. Lima, Perú.

Chef and entrepreneur Gastón Acurio is one of the foremost exponents of Peruvian cuisine and one of its greatest advocates. His restaurant Astrid & Gastón, opened in Lima in 1994, is considered one of the best in the world, according to Latin American's 50 Best Restaurants 2016. He currently has establishments dedicated to Peruvian cuisine specialties in countries around the world, an activity he combines with his work as a Goodwill Ambassador for UNICEF.

"After a period where cuisine argued for standardization and mass production of products, we began to recover our heritage and appreciate diversity"

We are in a transcendent moment in the history of mankind. For thousands of years, cuisine has been based on diversity, product seasonality, not having to discard food because of its appearance or even on a whim, and where people valued craftsmanship and grandmothers' recipes. However, all that was lost with a lifestyle promoted by an industry that made us believe that we had to go for standardization, for mass production. And suddenly, after 100 years following these habits brought on by industrialization, a connecting world forced us begin recovering our heritage and again appreciate our diversity and awareness. The kitchen regains its place.

"The kitchen will be the room at home that that will dictate people's consumption habits, habits that will be much better than what they have been so far"

Over the next 25 years, the kitchen will regain its place. We will recover dialogue and decide correctly what things we will buy and why, what things we are going to cook based on what is good for the body, for the soul, for the environment, for the local economy, for people around us and life in general.

"Being connected does not make us equal. It makes us value our differences: we see the beauty of our culture and we want to share it with others"

It would seem that the connectivity that unites us all makes us lose our identity, but nothing could be further from the truth. This wonderful dialogue that exists, rooted in the observation that we are all different, causes a revitalization and strengthening from the recognition by others of how beautiful our own culture is. What happened until very recently? Children in the Andes or Amazon, influenced by TV, rejected their ancestral recipes. Feeling side-lined from economic life, they embraced products that were not indigenous to their own cultures as a way out of the reality in which they felt subordinated, forced or even scorned.

The connected world has made us put the focus on diversity and awareness in the kitchen.

Those of us in haute cuisine have an opportunity to convey values on behalf of fair production and healthier eating.

Today, strengthening our local identity leads us to trust our own culture and peacefully celebrate our differences. And this is what makes the regional cuisines much more attractive and seductive in recent years than they were until very recently.

"Haute cuisine makes a positive impact on consumers' minds, who end up understanding the values behind the products they eat"

The different types of cuisine run along parallel lines. There is popular cuisine, traditional cuisine, regional cuisine, cross-cultural cuisine and, at the tip of the pyramid, *haute cuisine* leading in creativity and innovation. And nevertheless a lot of knowledge discovered in *haute cuisine* then ends up becoming traditional cuisine.

The foodie movement does not merely take a playful and aesthetic look at the kitchen. *Haute cuisine* plays an important role in advocating issues related to good nutrition, health, the environment and generating economic opportunities.

"Chefs cannot ignore the problems of small-scale producers or consumers influenced by advertising opposed to a healthy diet"

Chefs from my generation learned what our social role is. We have beautiful restaurants that people covet and media exposure that requires us to advocate for those who are vulnerable. How can we turn our backs on the problems of producers who bring us their wonderful products, or fishermen suffering from predation by some species, or children who are being influenced on TV to reject a healthy diet in favour of industrial products?

"Equipment in the kitchen must show a balance between technology and craftsmanship, and we have to enjoy the kitchen as a beautiful experience"

In recent years, there have been many innovations in home kitchen equipment. We have refrigerators that allow us to preserve and ensure food safety and microwaves that make our lives easier... our task now is to find a balance between technology and craftsmanship. In my kitchen I have the latest equipment but also mortars and fullers, cooking over a live fire. I try to have everything that

promotes good cooking — where time is not a factor against you but a factor in your favour. Equipment must be at the service of the kitchen as a beautiful experience of everyday life and not as tools to help you cook faster.

"The democratization of knowledge in the kitchen is more crucial even than the tools we use to cook"

In the home kitchen, we continuously apply professional cooking techniques. Research leads to knowledge that translates into a democratization so that the rice plate we make every day can be tastier, the steak more tender and the fish juicier. In the past, chefs had this image of selfish characters who took their secrets to the grave. In this connected world, professional chefs are obligated to permanently reveal their discoveries so that others can imitate, dream or practice at home.

"Domestic, everyday decisions can also trigger major changes"

Through information, the home kitchen can change the world. Choosing ingredients wisely or deciding which recipes we use to serve healthy dishes with a local flare and seasonal ingredients or celebrating the diversity of other cultures — these are very important efforts. By making these decisions, we can completely change harmful habits, such as scrapping 40% of what is produced simply because it does not have the exact size or because of a small spot, or insist that seasonal products be available throughout the year, using as many pesticides as possible. The key word is balance. How can we find a new balance and a new way of feeding ourselves?

The kitchen will be the space in the home that will dictate people's consumption habits, which will improve noticeably.



Andoni Luis Aduriz

Chef of the Mugaritz restaurant, 2 Michelin ** ** . *Errenteria, Spain.*

He was born in 1971 in Donosti, where he did his first cooking studies at the Hospitality School where he began to express himself through flavours and textures. His experience in Ferran Adrià's El Bulli opened him to a world of possibilities. In 1998, he began his solo work at Mugaritz, which he has been directing since then and which, among other recognitions and awards, has remained in the top ten of the list The World's 50 Best Restaurants in the last decade. Andoni has turned Mugaritz into a pioneering concept of restaurant management, research and experimentation that has been recognized internationally for its innovative and creative capacity, beyond the gastronomic scope. He has broken paradigms and promoted interdisciplinary work to drive forward different fields of knowledge.

"Appliances will be smarter and will make our lives easier, more comfortable, more organized ... and human"

The kitchen is evolving at the same pace as society. Looking back, it would seem that things have changed a lot in terms of design conceptualization, based on the fact that the kitchen, outside the bedroom, is one of the places where people spend the most time. But the fact is that in terms of materials and technology, things have not changed all that much.

Everything indicates that we will end up having one or two devices that will centralize a number of applications that will make our life easier. Why not dream that fridges might send messages to your phone telling you what you're missing? Other appliances will be sure to follow suit.

"The traditional kitchen adopts *haute cuisine* techniques that give our dishes another delicacy"

Haute cuisine always has an influence on traditional cuisine. Decades ago, traditional Basque dishes such as hake in green sauce were cooked a particular way: it was sliced, baked in some sauce and then a series of ingredients were added. Haute cuisine gave it a different twist by changing the type of cut and cooking at a lower temperature. And several similar cases could be mentioned. In other words, you realize that with a simple recipe there are a series of concepts that have come to us from haute cuisine, adding exquisiteness or delicacy.

The general public has added thousands of examples. Taking it to the extreme, we see there are many individuals who have kitchens equipped with appliances from professional kitchens. This has happened as a result of the visibility of the kitchen in the media, and especially the importance of some elements linked to the kitchen, like everything related with health, pleasure, sharing and local sourcing.

"Popular chefs can help raise awareness and convey good habits to avoid the dangers of eating poorly"

I speak with the best nutrition experts in the world, health research pioneers, who claim they still need a channel to truly influence society. They get the feeling that they can publish reports every four years offering precise data on

A rich gastronomic culture results in health and enjoyment.

Chefs can help to raise awareness on aspects associated with food, which is a great opportunity.

the latest nutritional discoveries, but when a man appears on television with a tip or a diet he reaches far more people than all the researchers combined.

Today, for better or for worse, we cannot deny that many chefs have become real media stars with a great influence on large segments of society. This is an opportunity to be seized in terms of training, education and building awareness.

According to World Health Organization (WHO) reports, unless measures are taken, in the coming decades obesity will be a major problem that may even reach pandemic proportions. We must find channels to reach society with a series of tips, and chefs can be one of these channels. People need to be aware of what the good habits are and understand the importance of food, what we eat and how we eat it.

"I like talking about food bias because I think we have to educate people. A rich gastronomic culture is health and enjoyment"

When I write in the media, I like talking about bias. What I'm trying to explain is that the mouth, specifically the tongue, is like a key, a key that unlocks various locks. I use it as a metaphor to explain that each person is designed to open a specific door.

When we have a master key within our reach, with some effort, which can open all the doors in the world, we have a real treasure. This exercise has a lot to do with health, but also with pleasure. I like to highlight it, because it is something that can make people have a fuller, happier and richer life. Thinking about children and the future, a rich culinary culture is something that can actually help them face very serious problems.

"The table is a place where we eat well, but it is also a place for afterdinner conversation. Our designs have to take both activities into account"

Smart ovens are a significant technological innovation. They are equipped with sensors that can practically identify what is inside and are programmed based on what they detect. It sounds like science fiction, but it is already underway.

What has changed the most in recent years is everything that has to do with materials. Our kitchens today feature materials that make them much warmer, cleaner, tidier and more attractive.

The kitchen is no longer just the space where we cook or eat. It is the space where we live, where we share, and it must be designed accordingly. For example, I think a table is a place where we eat well but it is also where we enjoy after-dinner chats, which can be informal and light-hearted.

Kitchens are sometimes neglecting these aspects and new materials can allow for designs that address them.

"The kitchen is the ideal place for conversation, even more than the living room where other devices can distance people"

I have a kitchen/dining room in my home. It really is one of the rooms where I spend the most time. Especially because I have never let go of that intergenerational coexistence dimension of the kitchen.

The kitchen is the ideal place for starting a conversation, for grandchildren to talk, play or interact with grandparents, for people to communicate. For me, the kitchen is one of the most important spaces. If I could, I would sleep in the kitchen!

The kitchen is the perfect place to be with and talk to people: the space for dinner and after-dinner conversation. I would even sleep in the kitchen!



Jonnie Boer

Chef and co-owner of the De Librije restaurant, 3 Michelin かかか. Zwolle, Netherlands.

Dutch chef Jonnie Boer is co-owner with his wife Thérèse of the De Librije restaurant in the Dutch city of Zwolle, one of the 50 best restaurants in the world, according The World's 50's Best Restaurants, which also features a hotel and a workshop/school. He boasts a very distinctive style and loves using local products in his creations, pointing to nature as the basis of his cuisine and also as a source of inspiration for developing new dishes.

"Sustainability is essential to understand how the kitchen, both professional and at home, will be in the future"

I think that in 25 years home kitchens will look more like professional restaurant kitchens. People show a growing interest in the technical appliances and the installations they require. For example, if I have a nice house, I will surely be interested in installing an ultra-compact surface, because in addition to its many benefits it matches the architecture

Over time, home kitchens will focus a lot more on sustainability-related issues. Sustainable development is the hallmark going forward, because we simply can't afford leaving the sea without fish, among other things.

It will be common for guidelines and tools which we implement today in the professional kitchen to be in place also for the home. This is a very important issue

We also see more and more people who want to have sophisticated devices at home because they want to cook like chefs. They spend hours and hours in the kitchen and want to show off their skills to family and friends. So it is clear that the kitchen is and will be a very important space for them.

"The kitchen is the most social space of the home, the place where we enjoy the most family life, and it naturally has to be cozy"

I think that the kitchen is more and more a big part of family life. I think many families are living in the kitchen rather than in the rest of the house. It doesn't matter that the entire home is spacious, because the kitchen is certainly more welcoming. No wonder the kitchen is where we hang out the most.

I'm not sure if there are many differences between home kitchens in Europe and the United States. What I do know is that new kitchens are noticeably more social than old ones and obviously feature much better equipment. There are no comparing kitchens with old cooktops and those that that feature materials such as ultra-compact surfaces. There is a big difference and everyone has to decide which they prefer.

We can't fish the whole sea empty. We must be sustainable.

There are more and more people who like to be chefs at home and want a kitchen equipped accordingly.

"As chefs, we have become accessible professionals who you can speak to or follow on social networks, and that makes us more influential"

I think chefs from top restaurants will be more and more influential in the home kitchen. In fact, I detect that there is already a shift in how people perceive them. When I started my career in the world of cooking, chefs in France were untouchable. They were very famous and not approachable.

We are seeing a new generation now, though, and they let themselves be seen a lot more. They are normal people. You can chat and have a beer with them. And it is no coincidence that now that they are more approachable, there are more and more people who want to come and learn about cooking to be their own chef at home.

We are so approachable that we are even using social media. I am active on Twitter and De Librije also posts on Facebook. For us it is very important for people to see what we're doing.

Personally, I find it very enjoyable and interesting to be in nature and when I find something interesting, publish a photo or video on Twitter. People like to see it and perhaps feel the desire or inspiration to prepare a similar dish.

"I value authenticity in the kitchen more than using the best techniques or the latest kitchen appliances"

The influence of *haute cuisine* can be seen in some kitchens. In De Librije we have a school, Librije's Atelier, and I know students who have more gadgets and devices than I do! They go to the hospital to get some liquid nitrogen because they want to do what the pros do.

Perhaps these are not the examples that I like, but it is what we see happening. Let's say that some professional cooking techniques are fine when applied to home kitchens, but we shouldn't go too far because that's not good either. I think it is better for each person to value authenticity in the kitchen and focus on creating normal dishes.

Two times a day we give lessons to people who just want to have fun but we also give lessons to people who really want to learn. We offer Japanese cuisine classes. They also have hunters and fishermen who bring game and fish to class. We have all kinds of people visit us who can enrich our students in so many ways. Some have become very professional. They have been studying there for eight years and can easily replicate my dishes.

"The ultra-compact surface is a real breakthrough in countertops. It's easy to clean and elegant: fits perfectly into my philosophy of good taste in the kitchen"

For me, one of the great innovations in the kitchen are ultra-compact surfaces. We can cook over it and then clean it without damaging it. And it looks great. We can put a pan on it, cook on it and two minutes later it's not hot anymore. We clean it and it looks impeccable. I think this material will be very important in the future. In the old kitchens, you get little holes and steel gets damaged very easily.

In terms of design and when it comes to cooking, one of the most important things for me is good taste. You can have the most beautiful furniture and the most impressive machines, but if you don't have taste you simply can't cook.

My philosophy in the kitchen is to be true to your own taste and stay close to your region. You don't need to travel to Kenya for a specific ingredient. Just try hard to make the most of your local products.

A good chef is not someone who knows how to use liquid nitrogen but someone who has good taste and is authentic.



ANDRÉ Chiang

Chef and owner of ANDRÉ restaurant, 2 Michelin $\overleftrightarrow{x} \overleftrightarrow{x}$. Singapore

Taiwanese André Chiang, for years head chef of Le Jardin des Sens, and many French restaurant with three Michelin stars such as Pierre Gagnaire, Michel Troisgros and Astrance, currently owns six restaurants and enjoys worldwide recognition for his particular gastronomic sense based on what he calls his "Octaphilosophy™", the eight components of his dishes. In 2016, ANDRÉ, one of his flagship restaurants, was recognized as the best cuisine in Singapore and the third best in Asia, according to *Restaurant* magazine. Currently is the only restaurant in Singapore ranked in The World's 50 Best Restaurants since 2010.

"The problem of food shortages will play a key role in the future and we have to make precise calculations of what it can involve"

In the next 25 years, the home kitchen will focus on one of the major problems we face today: food shortages. We need to make more accurate calculations regarding the things we eat. Where do they come from?, do they contain chemicals?, are they organic?, will we be able to have food that can be grown in small spaces?, we need to know if we will still be able to enjoy fresh products and where we will source them from.

"Energy shortages and lack of space are two major aspects that will influence the kitchen for the next few years: how to consume less energy and how to make better use of space"

Another essential aspect that will influence the kitchen in the near future will be energy shortages. We will focus on how to digitize it more and use clean energy. We will use small compartments that can preserve or cook food most accurately. And we will be able to enjoy zero energy consumption thanks to different sources.

However, we will also be influenced by the lack of space. How can we create more compact home kitchens? I think combining leisure and functionality will be a big challenge. The kitchen will not be just for cooking, but we will be able to use it for other activities at the same time.

"In the near future we will witness a game-changing technological innovation that will transform the way we cook, and not just kitchen colour schemes and layouts"

Current home kitchen design focuses mainly on materials and appearance, but it would be worthwhile to put the focus on energy. The question should be: are there other ways of cooking? When the microwave was invented it was great because it changed the way of cooking and heating food.

However, if you look at the current home kitchen, an oven is an oven and a fridge is a fridge. We haven't found a new source of energy or the new way of cooking or storage to replace what we have right now. We see changes in colours and appearance, but not really in cooking methods.

There is no doubt that in the near future some breakthrough technology will change the rules of the game, similar to what happened when microwave

The three big challenges that will shape the future of the kitchen are food, energy and space shortage.

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Soon we will witness a technological change that will go beyond appearance and will help us cook really differently.

technology emerged. Other devices will appear and cause a new design and lifestyle approach.

"The home kitchen will evolve because people are more interested in knowing how to use different appliances that will help us follow specific results"

Nowadays we focus a lot on handcrafted production, but a lot of homemade food comes from mass production. We know that people are concerned about issues such as the source of ingredients, how we eat, where we get water from or how we grow a carrot. And that is why much of the expertise that we apply as professionals to traditional cuisine is gradually being applied to the home kitchen, because people have a higher level of interest.

This interest goes beyond issues related to the origin of ingredients and also affects the way we cook. It is no longer surprising that someone uses technology at home for cooking with less oil or uses a vacuum packaging machine. Some devices were designed for professional chefs and are now becoming staples of the home kitchen. The *Pacojet* ice cream maker and the *Thermomix* are good examples.

"The way forward is to preserve healthy food and to source products carefully, not just rely on specific foods that could end up being mass produced"

Another clear influence is that in traditional cuisine we use less meat but more seafood and vegetables. We are becoming more aware of how to consume more vegetables and cook them properly. It is therefore vital to think about how we can foster the use of forgotten vegetables instead of resorting to mass production. Otherwise, all farmers will only grow carrots, onions and broccoli, and that's what we're going to have moving forward. Many vegetables that are now grown in small quantities will not be grown again.

"In our restaurants, chefs serve food but also send a message. I think that's very important and we have increasingly greater social responsibility"

Our social responsibility as professional chefs is becoming increasingly important. And this has changed quite a lot in the past ten years. Nowadays you see a lot of

chefs that do crossover charity events and support a lot of movements. We feel more committed to sending the right message to people who cook at home to help them choose the right products and eat properly.

Every year the ANDRÉ restaurant does social contributions, donating part of our revenues to various organizations. Two years ago, we collaborated with Celler de Can Roca, the best restaurant in the world. We decided to do something to help in the tragic wake of the typhoon in the Philippines. We are in Singapore and the disaster hit pretty close to home. We wanted to raise awareness in society and do something, although we're just a thirty-seater restaurant.

"As famous chefs, we also have the responsibility of being culinary educators"

At the ANDRÉ restaurant we have no doubt about it, our activity extends beyond the kitchen. We are about to launch our first cookbook, *Octaphilosophy*, we travel around the world to showcase and teach what we do. We focus on education: knowledge of fermentations, creativity, art, etc. Many interesting elements converge in the creative process of cooking and that is the message we want to convey.

Chefs have a social responsibility to also serve as gastronomic educators.



Alessandro Finetto

Architect and designer, director of Global Consumer Design at Whirpool EMEA & Asia. *Varese, Italy.*

Born in Milan, Alessandro Finetto has served for the last 14 years as director for Whirlpool's global design area in Europe, the Middle East, Africa and Asia. The brand's philosophy focuses on finding solutions to various consumer experiences. With 97,000 employees and 70 manufacturing and technology research centres around the world, it is one of the leading companies in the industry.

Flexibility and customization are concepts that will define kitchens, spaces for living and cooking together"

Today, living means cohabiting in a public space. We spend much of our time in the kitchen and it is therefore where we share the experience of cooking, being with friends, talking, watching TV, using the computer... The kitchen and living room will be a single space. Some new houses already feature these open, multi-functional spaces. The demand for them will only get stronger.

Some people who refurbish their kitchen ask for an island. I ask them if I can see the house blueprint and confirm that the space won't allow it, but one looks for solutions. You make other rooms smaller and you end up finding a new space you couldn't begin to imagine. It is all about thinking in terms of flexibility and customization, two other concepts that are going to be increasingly relevant.

"New appliances will not only have information but will feature intelligent solutions that will make them go further"

The time we spend in the kitchen for breakfast is completely different on Mondays and Sundays. It is breakfast in both cases, to be sure, but at different times and with different stress levels.

These types of dynamics help us see that we need to develop new appliances that include smart solutions. An oven will know if it's Monday or Sunday morning and will automatically ask if we want to bake a brioche or something else.

It will be able to activate automatic functions based on the day of the week as it detects different routines, or for each user, whether an elderly person or a teenager. Appliances must be flexible enough to detect different users and duly adjust interaction.

"Being connected on the internet makes us tend toward a global convergence in kitchen design and use"

When I travel to China and go into a kitchen, I see that they use local spices and obviously have different customs. But from a physical standpoint, the environment is very similar. In fact, one of the major trends in China is the "German trend". So, very simple and pure, and minimalistic. This trend coexists with

The kitchen space must be flexible and allow customization to the needs of each user.

We will tend towards a smart kitchen that can interpret elements and can adapt to any situation.

Scandinavian design, inspired by nature, wood and some organic forms. For me, it is clear evidence that there are very similar attitudes toward design around the world.

"Appliance design has to do with the aesthetic part but also with the context and process in which we use them: our use experience"

The great technological innovation in coming years focus on appliance connectivity. Having connected products enables us to think more of the experience than the design itself.

Design has changed a lot in the last 15 years. People still think that designers design geometry, shape and radius. And yes, we still do that, but we also seek to talk about the story, the experience.

Being able to design the experience involves, on the one hand, knowing a product's context of use and, on the other hand, knowing how it is used. We need to invest more and more in this area.

We know that families are more segregated and grandmothers no longer live with the family. This means that to learn to cook, we are likely to turn to the internet.

And appliances can offer this functionality. As designers, the challenge is to create an entirely new environment.

"We have to be braver when it comes to changing the rules. We can't think of designing a kitchen along the same lines as 100 years ago"

I work with manufacturers who follow a traditional approach. In other words, they install their cabinets, leave some gaps and then we come along with our appliances to fill them.

It would be much better if, from an innovation and design standpoint, all professionals involved in kitchen design could work together from the ground up, from scratch. We would think about how to design the kitchen experience.

We are still living by standards of almost a hundred years ago, when we lived in different houses with different spaces and different products.

"Everything would be much easier if we had a compact kitchen solution that came with integrated features so users only had to choose the colour and materials"

Kitchen designers are increasingly aware that they have to talk to architects and interior designers. It needs to be a joint effort where each person performs his or her own functions. When users think of a new kitchen, they do not think of a new oven but rather the quality of life they can get out of that space. Their questions have to do with how much light they get and what curtains they should put up. As professionals, we have an obligation to work together to provide the best solution.

Architects must take the infrastructure (water, gas, electricity, ...) into account from the start. However, it would be easier if we could have compact kitchens that could be installed by simply plugging them in. It is not easy and it would require a lot of collaboration, but it would be a lot easier for users. They would only have to choose from what they like best.

"The public spaces of a house should be able to easily adapt and create atmospheres depending on the different uses we want to get out of them"

I think the role of the kitchen can influence the design of all areas of the home, but I underscore the difference between the public and the private parts, meaning as private only the bathroom and bedroom. These are spaces that operate under different dynamics. What matters is that public spaces offer maximum flexibility to adapt to various situations.

Now we can change a light fixture or some other element, but it could be more ambitious. For example, kitchen furniture today is usually wood or melanin, but it could well be made of a type of glass or material which could change colours at the touch of a button. This would allow having a red kitchen at night because I've invited my friends to an Asian dinner ... or white in the morning because I want to create a natural mood. It would be interesting to be able to create atmospheres that could adapt to our public experiences.

There is an aesthetic element, but what matters is for the kitchen to adapt to the experience of each user.



Einav Gefen

Corporate Executive Chef at Food Solutions, Unilever North America. *New York, United States*.

Einav Gefen, a native of Israel, began her career as a chef in Tel Aviv and later moved to New York as head chef of various restaurants. She currently works as manager of the R&D culinary team for Knorr, Ragu and Bertili. In this role, she brings her professional view of the kitchen to product manufacturing and design. Her gastronomy philosophy involves incorporating food sourced directly from the farmer.

"Food that makes you be your 'better you' will become the ultimate food"

In the next 25 years the kitchen in the developed world will be extremely connected and digitized. Just as now our health stats feed into our phones through Fitbits and iWatches, the kitchen will be linked and at many people's fingertips.

One of the major developments is health. Recently, a friend told me that everything addictive is unhealthy, like sugar and fat. No one gets addicted to kale or arugula. We first need to see a psychological change that leads us to prefer what is wholesome and beneficial. In fact, we all want to be our best selves, and food will be an enabler.

"Knowledge is increasingly more accessible. We acquire the skills, but everyone has to implement them their own way"

Nowadays when many schools talk about food they go beyond the kitchen. They focus on agriculture, on the origin of food... or on knowing how to cook well to preserve nutrients and take full advantage of food's properties. These changes in the curriculum will become increasingly apparent outside the classroom. Education has to play a very important role in restoring kitchen skills.

Another way of learning is through watching videos. I taught professional cooking in New York for years and people paid to come and learn how to chop an onion or how to process meat to make sausages. However, nowadays you can watch digital content, follow step-by-step examples and chat with someone without having to pay \$20,000 a year to go to a cooking school.

Knowledge will become increasingly accessible and people will be able to develop their culinary skills in their own way.

"Cooking, refrigeration or storage methods might change, but our infrastructure needs in the kitchen will always be the same"

Food is so cultural and is such an accurate reflection of who we are and where we come from that it will always translate into different designs for the kitchen space in various parts of the world. However, we will always find a number of common elements that will be very similar: a cooking surface, some type of refrigeration and a work and storage space.

We may have the theory down, but cooking is like driving. To really learn you have to get behind the wheel.

The trend is to buy from farmers markets or to grow our own food.

Therefore, if infrastructure is the same, where we will see changes in the future is in kitchens' intelligence.

"The trend is clear. We all want to buy fresh products and cut out the middleman"

We are witnessing an integration of technologies in the kitchen. We will be able to put a whole chicken in the oven and it will be weighed automatically. At the push of a button, it will detect the humidity level and a program will determine how to cook it so the meat is just right, perfectly moist inside and golden crisp outside. And the relationship between agriculture and the kitchen will also be more synergistic. In the U.S., farmers markets are a growing trend. People want to buy fresh produce, cut out the middleman (the supermarket) and feel as close to nature as possible.

Based on this trend, we will grow more at home. We will leverage a smarter arrangement featuring hydroponic systems and LED lights to combat pesticides. These systems can already be used to grow some vegetables and tomatoes, but they will expand progressively and a different infrastructure will be required.

"Restaurants and chefs create kitchen trends, from more informal spaces to healthier diets"

There is a trend towards casualization in the kitchen. Going to a restaurant used to be a big deal. You had to plan ahead and make reservations. But today we expect to enjoy the same quality of food while wearing jeans and a T-shirt. We go to a restaurant decorated with wood and metal, but we don't find it surprising that it has no tablecloth. The atmosphere is much more casual. People don't expect less when it comes to food quality, but they do want to feel comfortable.

Another trend we see is vegetarian restaurants. We used to admit it shyly, and now it's fashionable. I'm gluten-free, vegetarian, vegan! Chefs have made it an option in their restaurants and home kitchens have adopted it without skipping a beat.

Chefs will continue being influential and increasingly more approachable. In 25 years you might be able to order a chef's dishes online and have them delivered at home. And that's not it. We may be able to wear virtual reality glasses at home and feel and experience what we would at a restaurant.

"Appliances have not advanced that much, from a technological standpoint. The great revolution in the kitchen is the mobile phone that connects us to the world"

The kitchen will become the centre of the home even more. It will be a more comfortable and attractive place.

People will feel safer with new kitchen designs. It will be as if someone gives you a hand, albeit virtually, and guides you through the steps of making dinner properly.

Currently, the most important technological advancement we see in the home kitchen is our mobile devices. We use them to get recipes and tips, share with our friends, ask our mom or have an on-the-spot Skype chat to see if somebody in India gives us a thumbs up on how we make our masala. This trend will continue.

"The food system will witness a 360° cycle where we will use surplus food as compost to fertilize our own garden"

In the future we will be able to grow some of our food at home. People may join forces to share patios or terraces. We will garden with friends and will use technology to get information from the garden: it's time to fertilize, remember to add fertilizer, etc.

Composting will also be important. We will be able to manage waste more effectively. We will learn how to use surplus food either to prepare other dishes or for use as composting fertilizer for kitchen-grown food. Kitchens will be smart and able to save resources.

The great innovation in the kitchen is the mobile phone and being connected to the world.



Sandy Gordon

Interior designer, consultant in SGI Interiors and instructor at University of Wisconsin-Madison. *United States*.

Sandy Gordon is former Chair of the National Board of the American Society of Interior Designers (ASID), and specializes in designing sustainable strategies for built environments. Her commitment to sustainable design, coupled with her progressive vision, equip her with an innate ability to develop accessible, innovative and functionally impeccable interiors. Her professional activity focuses on the retail field and the design of kitchens and bathrooms.

"We tend toward such a seamless integration of technology in the kitchen that we won't even notice that technological elements are present"

In the next twenty years, the kitchen will become the heart of the home. I see it with multigenerational people living with in that kitchen. It will be a nexus where technology, design and people's needs will converge.

This change will hinge on a real integration of technology into the kitchen. It is currently only an add-on, as technological elements coexist with non-technological items. However, in the future the very design of the kitchen will change and technology will be fully embedded to the point that we won't notice its presence.

"Health concerns in kitchen design lead to an increasing prevalence of cleaning materials that do not include aggressive chemicals for cleaning"

Issues related to health and the environment influence kitchen design basically in two areas. On the one hand, we need to consider the type of materials we select. So, are they healthy from the standpoint of what are the ingredients within those materials? Do they leave a gaseous residue? Is there something that wipes the dust, that wipes off, or do they collect dirt?

The second health-related issue has to do with how and what we need to clean kitchen items. I am referring to the use of materials which do not require aggressive chemicals for cleaning. For example, the ultra-compact surface can be cleaned with a water-based agent or even a bit of water. They are much healthier, not only for people in the home but also for the environment, because when you pour cleaning products down the drain they enter the water system and it also has its effects.

"The multigenerational use of the kitchen is one of the trends which in coming years will gain strength and will clearly change kitchen design"

At present, one of the most important innovations in kitchen design is the induction cooker. It marries technology with design and allow people of all generations to use the kitchen space safely.

I think aspects like this play an important role in one of the major factors driving kitchen design today, and will even have a greater impact 20 or 25 years from now. The multigenerational use of the kitchen and how several generations live in the

Kitchen will adapt to the foodie movement and the new food awareness.

The multigenerational use of the kitchen will gain momentum and will lead to design changes.

same house is a trend that I don't see going away. No doubt it will change the way we design our kitchens, how they are used and how we equip those spaces.

As designers, if we do know there are people of all ages and generations using the kitchen, we have to approach it differently. We need to think about how each age group uses it, when they do so and how technology fits into the whole.

"If residential buildings were planned with the kitchen as a central element, they would surely be better adapted to people's needs"

When designing a residential building it's very important that the architect, the designer, and all other professionals involved think seriously about that kitchen space. It really is the heart of the home and so if you build and design the space from the kitchen out, including to the exterior of the home, I think you're going to find that spaces and homes would be better suited for the inhabitants using them.

"We are increasingly more interested in eating healthy foods and making our own food. This is a trend that will also influence kitchen design"

A societal shift or change that I see as really important in kitchen design is the foodie movement and food awareness. What I mean is that as humans we are realizing that sitting down at a table and eating together builds community. And we not only eat together. We cook together and know where food is coming from. Indeed, it could even come from our own garden.

The question we must ask ourselves is whether we are designing kitchens and homes that cater to people who go to the garden in search of food, bring it home, cook it with their family multigenerational and then eat together. This trend is very important and will gain momentum over time.

"The world has changed and designers need to think differently: seeing the kitchen as a space where we cohabit, not where we store food"

Designers have to think differently about kitchens. It is important to think of the kitchen as a place where we live together, not a storage space where we enter and exit throughout the day. It is a place we call home. It's our hub. It is the place that attracts and unites us.

As professionals, we must notice all these elements and see them in another perspective. There are many designers who are merely engaged in filling the wall, installing the same components ... and they do it over and over. However, that's not what society wants. The world has changed and designers must lead this change and think differently. Think about it as an art form. How does that provide beauty and function to our clients?

Residential buildings will be better suited to people's needs when their designs become kitchen-centred.



Piero Lissoni

Architect, designer, art director and co-founder at Lissoni Associati and Lissoni Architettura. *Milan, Italy*.

In over 30 years of experience, the work of Piero Lissoni covers disciplines as diverse as architecture, design, graphic arts, art direction and advertising. He has worked for large and reputable brands such as Boffi, De Padova, Alessi, Flos, Living Divani, Kartell, Knoll and Porro. He has received many professional recognitions during his career, including the *Good Design Award*, the *Red Dot Award* and the *Compasso d'Oro*.

"The kitchen is evolving into a more professional space, but it is also becoming more elegant and relaxed"

As a person brought up on the Mediterranean, I feel the kitchen is at the core of everyday human life. I see it as a sort of United Nations, where people talk, fight, come together and make peace.

It is also a very special space from an architectural and technological standpoint — relaxed and yet elegant — so we must be very discriminating when it comes to the type of machines we bring into this space. The past 25 years have brought us many technological advances, and in the next 25 we are sure to achieve even more amazing things. We will integrate new technologies and cook differently.

Everything is becoming cleaner but also more professional, including the fridge, microwave and induction systems

What excites me about the future is that we might be able to stop using 95% of our energy, we could learn to cook with extremely high or low temperatures. The real technological breakthrough would be using energy differently.

"Appliances will tend to be smarter and simpler. Currently, some appliances are overly complicated and cause unnecessary frustration"

As humans, we have come a long way, making an evolutionary leap from primates to homo sapiens. However, we seem to have suffered a strange masochistic regression early on. And now, 600,000 years later, our masochistic obsession is clearly confirmed. We insist on using machines as simple devices when we could get much more out of them. Some modern appliances are truly baffling.

"In projects for Boffi, we try to control all steps of the process: concept, design and communication"

When we design a kitchen for Boffi, we think carefully about how we can drive the market forward and hand-pick our clients from around the world. Moreover, we try to control the entire process — designing style, enhancing creativity and finally crafting communication. I choose to design kitchens for a very select number of people. The idea of design for everyone does not appeal to me. Appliances should help us do things —not necessarily do them for us.

I see the kitchen as the United Nations: a space where people talk, argue and come together to make peace...

"We are animals with some intelligence which we have to learn to use more responsibly: that is what creativity is all about"

Innovation is our undeniable destiny. But the underlying fact is that we are rather stupid animals: we must be more responsible in terms of technology. In earlier times, we used 100% of energy and resources in the form of trees, marble and surfaces of various materials. Now we can get better results and use only 20% of energy and materials. That is creativity, and that is what the future holds. We can paint things with another colour, use another type of material but ultimately that's just an exercise in style. True creativity is linked to the responsible use of resources.

"When thinking about the kitchen, we have to imagine its interior and exterior as related, but we must also consider what happens inside, how we live inside that space"

When you think like an architect, you design spaces bearing in mind their interior, their exterior and how the two dimensions intersect. I find this part of the process appealing because I enjoy designing from scratch, but at the same time I am an industrial designer and I need to also show sensitivity to the life, dynamics and surroundings of the space in question.

In other words, people move around, open a bottle of wine and prepare a salad while talking. Designing an excellent kitchen for the future requires taking these activities into account as well.





Vayu Maini Rekdal

Scientist, chef and educator, Harvard University. *Boston, United States.*

Vayu Maini Rekdal was born in Stockholm in a multicultural family with roots in India, Kenya, Norway and Cuba, a reality which greatly influenced his way of approaching the kitchen, he soon pursued studies in chemistry and biology. His academic work, now at Harvard University, revolves around the relationship between cooking and science. He is convinced that conveying his insights on the balance between these two disciplines is an essential recipe for positive social change in the 21st century.

"The kitchen will be a space where we can cook and eat food, but it will also be a space for learning"

I hope that in 25 years the home kitchen will be a collaborative space dedicated to learning, a place where people do more than cook and see food as something to consume. An open window to something larger, such as science, health and culture. An open place where the creation of ideas and learning is encouraged.

Its design should be geared toward collaborative spaces, open areas and different cooktops. We will be able to cook and eat food, but more importantly, it will be a place to learn about the world, food health and various food-processing techniques.

"I imagine the kitchen as a large space full of appliances where we can relax, eat and find inspiration"

My dream is a kitchen with open spaces, kitchen islands with a lot of working space, appliances such as *sous vide* machines, a rotovap, induction burners with perfect temperature control... in a very bright open space. It will be a place of inspiration where I could invite people to work together and work on new ideas. Cooking and learning has to be fun.

But I would also like to be able to grow my own food. There would be no barriers with the living room, it would be part of a larger space. You'll be eating and have an ample space to hang out, relax and be inspired.

"If you understand how food changes as you cook it, you can make more delicious and nutritious food"

With the rise of technology and social networking, we will witness a period where people exchange ideas and learn from each other. We will use cooking methods, techniques and recipes from different cultures and we will have to design the kitchen space according to these influences. Perhaps we won't see a global convergence but we will see more open and connected discussions.

It will be similar to the influence of *haute cuisine* and the foodie movement on the home kitchen. I worked at the Alicia Foundation in Barcelona, an association that promotes good eating habits, and I learned how to use science to create succulent dishes. At first, I was frustrated by thinking that few people can afford the luxury of *haute cuisine*. However, I realized that this philosophy has already reached the home kitchen.

The kitchen is another means of approaching science universities should create spaces for cooking, learning and exchanging ideas.

54 panel of experts

Scientific knowledge is the catalyst for progress on issues related to healthy eating habits.

People not only use new techniques and ingredients but also learn science. For example, if you make bread you learn how yeast breathes, how it creates CO_2 , and you understand why dough rises. You learn what *haute cuisine* chefs learned some time ago.

"Haute cuisine chefs are an inspiration who will continue to share their idea and help us see the world with different eyes"

We're seeing a shift in how we value cooking. In the US for a long time we've been focused on processed food, and now my generation sees cooking as more than just subsistence. Young people seek inspiration in chefs and many of them aspire to become high-profile professionals.

Over time, chefs will have even greater influence on society. They will transmit their way of thinking and will inspire people.

"We find innovation in appliances, in the way of accessing food and also in the appearance of new products for cooking"

Sous-vide devices are one of the greatest current technological advances. Using machines to cook at a controlled temperature is a great help to obtaining high-quality dishes. Although the technique comes from *haute cuisine*, we can now buy these devices for about \$100. But these devices are not the only major innovation in the culinary world. In the future we will see advances in growing our own food in a controlled home setting. It is not a matter of having large urban spaces for agriculture but perhaps small enclosures where we can grow our herbs, tomatoes and vegetables. This will be a very important practice that can change the way we think about food and how we prepare it.

"Cooking is another means of approaching science and universities should create spaces for cooking, learning and exchanging ideas"

The Biology and Chemistry departments of Carleton College (US), remodelled their kitchens because administrators realized their great value in building community life among students. That revitalized the campus because it allowed us to be together. We could cook and hang out. It was really part of the learning process at the university.

I think that's the right approach: not limiting kitchens for small spaces. Why not integrate them into a global experience and foster community? The kitchen as a place for learning and exchanging ideas.

"Healthier eating is not just a matter of buying organic food. It requires prior learning to help you recognize diet options"

The fact that there is a new food philosophy is in itself inspiring, but it should not be limited merely to buying organic products. The first step should be to learn how to cook. Not everyone has the resources to invest heavily in organic food. For such people, the first step is simply to learn how to cook and think more about the foods they eat.

"A comprehensive change in how we see the kitchen has to take into account all the outlooks of industry players"

We must go beyond people interested in the kitchen and be aware and think about how to involve everyone else in order to foster a truly global change. We need to involve policy makers, the media, industry leaders, restaurant operators, academics, etc. and join forces together. We need to find out how to create an inclusive food movement where we think about how to transform the kitchen so that it is accessible to everyone.

It is very exciting to see young professionals excited about nutrition and fruits or vegetables from this place or that, but working together is vital. We have different viewpoints and it is essential that we take all of them into account to transform the kitchen into a learning space.

Technology will serve as a catalyst to accelerate all these changes. Social media clearly shows how people are willing to share and exchange ideas. This will move us forward and maybe in 15 or 20 years we will be in a position, which we would never have anticipated.

The new kitchen philosophy is more than merely buying organic products — it involves choosing among all options.



Ignacio Martín

Global Head of Smart Home Services at Telefónica. *Madrid, Spain.*

Ignacio Martín holds a Bachelor's Degree in Business Administration from the Carlos III University of Madrid and an MBA from IE Business School. He has spent much of his career with the Telefónica group, an international leader in the field of communications. In recent years, he has been involved in defining management and marketing strategy for key corporate projects. He currently heads up the area geared toward smart home services.

"Kitchen devices will play a new role and will support the social environment within the household"

The kitchen is becoming an important social hub within the home, both in terms of size and location. Kitchens are being built closer and closer to the living room, which is where families traditionally spend most of their time together. Over the next 25 years, technology will further boost this trend. We are moving towards a smart home — and the kitchen will not be an exception. The smart home will actually promote many changes in how family members interact with their home and will transform single-function devices that had to be controlled physically into truly multifunctional devices that can be controlled from anywhere.

"Globalization will also affect how the kitchen is used as a social element"

Technology, by nature, tends to be global and that will make the kitchen evolution global as well. Intelligent electronic elements — and the way people interact with them — will be increasingly similar in all parts of the world. As tends to be the case with technological innovation, this new reality will most likely begin in Asia and the United States, spread to Europe and then to Latin America.

"The menial, routine tasks will no longer take up our time because machines will do them autonomously"

The smart home will be an increasingly real concept for the average consumer. Household appliances will have built-in intelligence, allowing them to connect with family members and among themselves. We will thus be able to manage them from anywhere and include them in our daily routines to make our lives easier. I think that the kitchen will be one of the areas in the house that will evolve the most. And it will be a gradual change. The first thing that will happen is that the most "hostile" elements will be eliminated. Everything taking place in the kitchen will be safer and if there is ever an incident we will be alerted in real time, which will allow us to avoid many problems. We will also see how less attractive chores will become increasingly invisible. Clothes and dishes will be washed while we are away. They will no longer take up our time because machines will do them autonomously and with no supervision.

The smart home will allow appliances to communicate with each other and also with all family members.

The more hostile or dangerous parts of the kitchen will gradually disappear and it will be a safer environment.

"Smart elements will have different functions. Some will be food-related but others will have nothing to do with what we have now"

The third change in the kitchen will be to promote sustainability and efficient energy management. It is something that will benefit us from both the economic and the environmental standpoint. In addition to boosting our efficiency, the devices themselves will be able to tell us when something does not work quite well or, for example, requires higher energy consumption than usual. This in turn will also help us keep appliances running well and avoid having to invest in repairs.

Lastly, the kitchen will also become the second social hub of the home. Smart single-purpose elements will become multifunctional. For example, the Silestone countertop now has a single purpose but when it becomes "smart" it will be useful for many other things. What until now has served as a cutting surface or a platform for kitchen objects will feature entertainment functionalities that until now we only enjoyed in the living room. It may allow users to watch TV or listen to music. It will still help us cook, but not in the traditional sense. It will offer tips, communicate with other rooms in the house, etc. We may even stop sticking post-it notes on the fridge because the countertop will record messages for the rest of the family.

"We will interact with appliances through voice more and more, and this will make everything easier"

Our interfaces will be much more digital, probably through touch screens, but also through voice-responsive technology. We will speak more with home elements and objects, and this will make everything easier to automate. In fact, artificial intelligence will enable devices to operate virtually unaided. Routine tasks will disappear. These functions will be done behind the scenes, because the house will learn when to take care of them based on the family's behaviour patterns.

"In smart homes we will have healthier diets and a more orderly life"

The need to keep a healthy diet is one of the main challenges for people in the developed world. I think smart kitchens will play a key role in improving the situation, helping us eat healthier by giving us the necessary information and advice so we can enjoy a more balanced lifestyle.

"Smart homes will require simplicity, accessibility and appropriate data management"

Three things must happen for smart homes to become a reality. First, technology must be simple to us, because otherwise people will not use it on a daily basis. The second thing that must happen is for all these changes to be accessible to the mass market. The various players involved need to coordinate and create ecosystems that will attract shared innovation that is increasingly affordable to the average consumer. Finally, the third key element is how data and information are managed. The smart home involves an avalanche of data that must be kept private and safe, but that can also be used to create added-value customer reports. The proper use of artificial intelligence will make life easier for us all.

Everyday, boring tasks will be invisible and appliances won't even ask for our input.



Patricia Moore

Designer gerontolist and president at MooreDesign Associates. *Arizona*, *United States*.

Patricia Moore is recognized worldwide for her great social awareness. Her work as head of MooreDesign Associates pursues the creation of useful products based on the observation of consumer behaviour. Between 1979 and 1982 she travelled across the U.S. and Canada disguised as elderly women, personally experiencing the sensory changes associated with aging and then implementing her conclusions as part of her designs.

"In the future, we won't go to the kitchen. Appliances, storage spaces and food preparation areas will come to us"

The next generation of kitchens will embrace adaptability and enhance individual ability. Kitchens will continue to become more flexible. We won't rely on connected cabinets and maybe some elements, like water sources and cooking stations, will become moveable. We will understand the kitchen, including appliances, as pieces of furniture rather than as integrated elements. A new concept of the kitchen will emerge that will differ greatly from the definition we have known for centuries.

The kitchen will adapt more and more to people. If we don't feel well, we'll be able to make a cup of tea or even self-medicate without even getting out of bed. The evolution of the kitchen we will witness will focus around food "islands" spread around all the rooms of a house to meet the needs of every resident for their lifespan.

"With the broader range of choices provided by decentralized kitchens, individuals families will improve autonomy and independence"

A "Cultural Imperative" will make the kitchen of the future completely different from what we expect today. It will be a better reflection of how people live, their lifestyle and local community.

The attitudinal necessity of improved nutrition combined with a "Self-Care" health maintenance philosophy All these things — combined with appropriate nutrition food accompanying us throughout the day — will trigger this revolutionary decentralization. Activities traditionally relegated to the kitchen will be spread throughout all rooms.

"The home will also evolve into a space for taking care of personal health and that will also involve a new kitchen design"

As technology advances, we will have more and more opportunities for the kitchen to include and adapt to new forms and features. Advances in the kitchen and food technology will affect health technology. What we call "home care" will increase. We can all move towards healthier lifestyles, thanks to environments that support choice and control for the quality of our lives.

The kitchen will give us more and more information and we will speak with it.

Countertops will evolve and adapt to our needs.

"Appliances — especially the fridge — will be increasingly smarter"

Perhaps the refrigerator is most important household appliance. Beyond its original role of keeping food fresh, refrigerators will become smarter and smarter, with a broader functional range. This appliance will be key to healthier people and healthier homes. It will notify a supplier when we run low on milk, it will let mothers know the best food to give a sick child, it will help us maintain a healthy weight and to take care of ourselves if we develop a chronic condition, such as diabetes. I envision the refrigerator becoming the communication and provision brain of our home and I am very excited to see what technology has in store for us.

"Kitchens will evolve because we need elements in our daily lives that can adapt easily to different situations and to each person's specific characteristics"

I often think of my mother who, at 88 years of age, finds it difficult to stand for prolonged periods. When she cooks with me in my house home in Phoenix, she sits down at a nice table, on a bench with cushions which she arranges to her comfort. She works at a different height as I remain standing in front of the countertop. We must be able to choose at all times what suits us. Some people have to work sitting down or in a wheelchair. A small child should be able to help Mom and Dad prepare food. And our grandparents, who will experience reductions in have less physical strength and mental capacity, should be able to prepare a meal with comfort and safety.

"If kitchens made decisions for us, we would avoid mistakes and our elders could live independently longer"

Inclusive Lifespan Design will support "aging in place", the design initiative that insists we all have a right to the home of our choosing for the entirety of our lives. At the very least design must deliver on the promise of a dignified existence and at its best design helps us to thrive all our days.

"I like the idea of being able to have a conversation with my kitchen, being able to ask: 'What should I eat today?'"

The kitchen should serve as a helpmate in making the best choices for nutrition and support health and wellness with medication management. It should part-

ner with the other essential component in our home, the bathroom, complementing and enhancing personal hygiene. I imagine a true "Smart House", the intelligent nest we have been promising consumers for more than fifty years, is finally possible now that we have the advent of Amazon and Google "assistants" for our homes.

Homes will be designed as personal healthcare spaces.

"With new technologies, material science, and new exciting kitchen design expanding throughout the home, we will be in a position to provide true quality and dignity of life for all"

My hope is that a rapid evolution of the kitchen, the heart of our homes, will encourage the same enthusiasm we have in our youth, when we first become a home owner, when we plan for a new baby, to all the phases of life and especially late life, when the challenges change with our capacity and we have unique considerations for design. If we can focus on equity by design, with the kitchen leading the inspiration, tomorrow's homes will give us the sense of security and well-being we all crave, worldwide. And, just as Dorothy Gale reminds us in *The Wizard of OZ*, "there is no place like home".



Piero Pracchi

Brand & Digital Marketing - Senior Director at Whirlpool Corporation. *Peterborough, United Kingdom.*

Piero Prachhi is responsible for developing the company's integrated marketing plan for the Whirlpool, Hotpoint, Indesit and Bauknecht brands. He focuses much of his effort on consumer knowledge and innovation. He previously led the areas of intellectual property and overall planning for innovation in industrial operations at the Merloni Group. He led the launch of successful products and later, as director of marketing in the UK opted for a digital strategy clearly integrated with the product.

"Home appliance trends include low consumption and other benefits that go beyond cooking"

The main trends we see now in home kitchen design have to do with sustainability and the use of technology to achieve greater efficiency. Within 25 years, oven consumption will probably be 50% lower than modern ovens.

Appliances will not only feature elements for cooking, but will also help users throughout the process, from the moment we buy food until we serve it at the table.

In terms of design, the debate today focuses on how to use kitchen materials also for appliances, and vice versa. For example, stainless steel began to be used in oven and cooking surfaces and, after some time, was implemented in other kitchen elements, which resulted in a certain uniformity. Now we have to see what will happen to new, more environmentally-friendly materials and how they will be introduced.

"Consumers want devices that are manufactured in a sustainable and environmentally friendly manner"

The appliance manufacturing process, especially for larger appliances, has to be environmentally friendly. Year after year we strive to reduce manufacturing complexity for cost reasons, but also because the less time you invest in production, the less energy you need.

In the past 25 years, the acceleration in production speed has been tremendous. The manufacturing time for a washing machine, for example, has been slashed by 75%. If you take measures for sustainability, the company's reputation increases. At Whirlpool we are well aware that consumers look for environmentally friendliness even at the beginning of the supply chain.

"The most visible revolution in the coming years will be the presence of the internet in the kitchen, which has not yet happened"

The greatest technological revolution in the home kitchen will be, I'm not sure whether to say luckily or unfortunately, the internet of things and connected devices. Does it add an awful lot of value? I don't know. But it's definitely what consumers call for. This innovation implies the convergence of many elements in

We expect appliances to cook but also help us in other ways and be energy efficient.

The internet of things in kitchen appliances will be the next great revolution.

a single device. In the near future, we will see a device that will control all other appliances around us: it will turn on the radio, preheat the oven and will notify us when the dishwasher cycle is done.

The kitchen space is not losing surface area in proportion to the rest of the house, but rather the living room is becoming smaller and smaller. The fact that TVs increasingly take up less space is one of the other factors. Clearly, the fact that buildings and apartments are increasingly smaller is also a factor.

But I don't think this trend will continue. It will stop eventually. People will discover that there's life outside of big towns and will go back to their roots, investing more in large spaces.

"The evolution of the kitchen has to be result from understanding what consumers want and their habits"

The kitchen has evolved as the consumer habits have evolved. Our tendency is to want things done more easily. Now we push, rather than pull, a drawer to open it. That makes a big difference in terms of effort.

And appliances follow along the same lines. Some microwaves allow you to cook and have a dish ready in 5 minutes. Some refrigerators allow you to extend the expiration date of fresh food, it keeps its flavour longer so we don't need to go grocery shopping every day... These breakthroughs in appliances are possible thanks to being focused on consumers, understanding what they want and what their habits are. Products must meet needs.

"If appliances help us cook, people are more likely to be willing to try new recipes"

The technical innovations we are developing in terms of user experience are very representative. Touchscreen technology, for example, can be easily integrated into appliances. We will witness a revolution in the way we control appliances.

We will have cooktops that will heat a pan but will also tell us when, how much and at what time we have to add each ingredient. So, we will cut back on cooking time but also on food preparation time.

"The key deciding factors for choosing good materials are sustainability, harmony, hygiene and durability"

In terms of materials, the main criterion has to do with sustainability and harmonization from a standpoint of colours and shapes. However, other factors are becoming more important, including hygiene and durability.

We must bear in mind that materials themselves can also kill bacteria, which would make life so much easier. Moreover, for financial reasons we also expect products' life cycle to be long. We must therefore convince consumers not only that we're sustainable, that we're the best from a technological standpoint, but also that our product is built to last a long time.

"The centrality of the kitchen in relation to other areas of the house is not only physical but also economic and we prioritize it accordingly in our budget"

People spend more and more time in the kitchen and this is something that architects should take into account in their designs. In a way, it is already happening when builders ask us for the greenest appliances in our range, because they know it's important to consumers.

The role and use of the kitchen even influences the design of other areas in the home. Very few people would build the house of their dreams without thinking twice about cost. First we look at our hearts and then at our pockets. In this sense, the economic consideration will prioritize the kitchen over other rooms and therefore the rest of the house will adapt to budget constraints.

A knowledge of consumers and their habits is key for any change to deliver truly useful value.



Anabel Rodríguez Santos

Executive Director at the Circular Economy Foundation. *Madrid, Spain.*

Dr. Anabel Rodríguez is the Executive Director of the Circular Economy Foundation (FEC), an organization working specifically on improving the quality of life of individuals by optimizing the use of resources and promoting society's sustainable development. Based in Madrid, FEC is currently the undisputed leader in knowledge about these sectors and it projects its work on fostering environmental excellence to Spain and Portugal, Europe, the Mediterranean region, Latin America and island nations around the world.

"We can only begin to apply circular economy principles once we know what we buy, how we cook it and what we are going to waste"

The kitchen of the future will leverage all the circular economy principles. In this type of economy, the value of products, resources and materials is maintained for as long as possible while at the same time cutting down on waste.

Circular economy principles can be applied in environments where families acquire habits that take into account materials, energy efficiency, eco-diet and efficient water use. Now they are only prospects, but it is important that we all start considering what we buy, what we cook, how we cook ... and everything we are wasting.

"The kitchen should be more hi-tech, no doubt, but should also make our lives easier and help us be more sustainable"

We tend to cook more food than we actually use so we end up having to throw away food. We have to change this habit because we simply cannot afford to waste food.

To avoid food from being spoiled, we have to plan ahead before we go shopping and cook. Knowing how to shop implies a series of sustainable attitudes that we need to bear in mind when we go into supermarkets. A lot is being done now to boost separate collection of organic matter. This requires us to have space in the kitchen to separate the various materials. So the kitchen has to be modern, but not just in terms of technology. It has to make things easier for users, but also help them be more sustainable, be able to act according to their principles and the demands of environmental regulations.

"The circular economy covers all elements around the life of a product: from the extraction of resources to where generated waste ends up"

The circular economy takes into account the entire value chain of a product. For example, with electronic products you must take into account the extraction of resources and the agents involved in management. We must think of materials, who distributes them and where waste products end up once they have been used. We must also make sure they are easy to repair and recyclable.

Following this line of thought, extending the life of a home kitchen should involve agents such as architects (who design the kitchen space inside homes),

We need to plan what we are going to cook because we can't afford to waste food.

New appliances will be driven by "multi r" criteria, redesigned to be repairable, reusable, recyclable... and re-thought. appliance manufacturers and furniture manufacturers. They all should give close attention to their products and manufacture them according to ecodesign criteria.

"The European Union's target for 2030 is to reach 70% in waste recycling, and that figure can only be achieved with everyone's cooperation"

We will tend towards globalization as regards the main elements in a kitchen. There will be common elements across all countries, although they will also coexist with other elements specific to each region. A Japanese user does not have the same habits as a Spanish user, and they are not under the same legislation. Regulations vary.

The European Union is currently discussing whether to set the recycling target for 2030 at 70%. That means that member States will have to comply with that figure and governments will have to take it into account in their management plans. But all citizens need to collaborate to reach this objective.

"We are starting to apply sustainability criteria in the production stage, but there is still much more to be done"

Many companies have already detected business opportunities in the field of sustainability, technology and health. In terms of material design, it is better to make simple, single-component furniture that can then be separated when their useful life is over.

The energy label is also increasingly important because it allows consumers to know the energy efficiency of each appliance. The same goes for water consumption, since appliances require different amounts of water for cooking. Many kitchen elements have modified their features to become much more simple and sustainable.

"The Multi-R approach is the hallmark of sustainable kitchen appliances: rethink, redesign, repair, reuse, recycle, remanufacture.."

Until now we talked of a sustainable kitchen driven by three Rs: reduce, reuse and recycle. That concept is now obsolete and we talk of a Multi-R approach that involves redesigning products to make them easily repairable, reusable and recyclable, but also rethink the services that substitute these products. The idea

is to reduce meaningless purchases, for the sake of owning the latest model on the market.

Likewise, the greatest technological innovation in terms of sustainability in recent years has been associated with everything to do with energy efficiency. The fact of consuming less power implies that the remaining energy can continue circulating around the same living area.

"We must enjoy the kitchen again. The kitchen of the future will be more sustainable but also more family-friendly"

In my opinion, the kitchen used to be a more intimate space where family members gathered and there was time to talk. All this has changed because our way of life has changed.

Women have joined the workforce and, since they also take care of the home, we have less time to enjoy the kitchen as a family, and it is something that should change. We must again make it a place where we can talk, share concerns, worries or chat about trifles.

Energy efficiency will be a hallmark in the kitchen of the future. Appliances, furniture and materials will take sustainability into account. Kitchen cabinets will be beautiful but also ergonomic, simple and will provide more storage space. We will even think of what to do with this furniture when it is no longer useful. For me, the kitchen of the future will be the kitchen that bears in mind the life cycles of all its elements.

The kitchen of the future will be the kitchen that bears in mind the life cycles of all its elements.



Susan Serra

Kitchen designer, blogger and president at Susan Serra Associates Inc. New York, United States.

She is one of the most influential expert voices in the field of kitchen design. In 2010, she founded Bornholm Kitchen, an American kitchen furniture company inspired by Scandinavian functional lines. She serves as a design and trend consultant for major brands in the kitchen and bath industry and is a frequent speaker on kitchen design. She creates new design concepts and has an interest in behavioral trends in the kitchen. Her design work has been published regularly since the 1990s in many national publications.

"In the near future the home kitchen will become smaller. We are becoming aware of the environmental costs of always wanting to live in larger spaces"

In the next 25 years, the kitchen will take up a smaller footprint. We are becoming aware that when our living spaces are so large, there is always an environmental price to be paid. In the United States, we have historically given importance and status to large spaces, products and more with little benefit for our society. As a more mature society, many of us in the US now think about the quality of the environment for our children and grandchildren. We are moving towards giving less importance to size and looking instead to satisfaction in product quality, the impact our purchases have on our environment and how general health and well-being can factor into those values.

"The kitchen will also become more comfortable. It will be like a second sitting room where you can just relax, work or even take a nap"

In the future, household size will also be reduced. In addition, the kitchen will become a multifunctional area that will have to accommodate several generations. It will be more comfortable, similar to a second living room where one can relax. We will see less cabinetry, larger windows, natural light ... the design will be focused on well-being. Technology will contribute towards a more functional, warmer and cosier kitchen via smart appliances, speakers and streaming services, iPad use and performance surfaces and materials. We want a kitchen that is not only utilitarian as a workplace, but that has features that encourage comfort. Socializing in the kitchen will become more important and more rewarding as we focus on this new element of design in addition to function and aesthetics.

"Technology has enhanced materials and surfaces and make the kitchen more comfortable, hygienic and healthier"

One of the most exciting aspects when it comes to designing kitchens is how to integrate health and wellness issues. For example, homeowners prefer large windows to enjoy natural light, but there are related issues such as how to design windows most efficiently for natural help in heating and cooling our homes as well as to serve as a substitute for artificial light. We are living in a time when we have busier lives but where technology is increasingly integrated into our

The kitchen is an emotional place. It's where all five senses reside, and that will always be the case.

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Materials and products in the marketplace continue to evolve, creating new definitions of beauty and performance.

routine. There are surfaces that have an attractive aesthetic and are practical too. Ultra-compact surfaces, for example, make kitchen living easier. I use a Dekton X-gloss table in my kitchen and I simply do not understand why all tables in the US are not made of engineered stone. The properties of Dekton surfaces - beauty, strength, durability over many years, a hygienic surface and easy maintenance, combine to make this important element in the kitchen design a joy to use.

The steam oven is an appliance which has become very popular in recent years. Cooking with steam or a combination of steam and thermal heat contributes to a healthy lifestyle. Induction cooking is also on the rise. It is a technology which conserves energy, is powerful, has instant response and is safe for all ages. New options for kitchen ventilation keep air clean and healthy. Taller downdraft ventilation appliances capture more cooking toxins than ever before.

"It's important to look at the energy efficiency classification of appliances we buy: a good way of managing our annual power consumption"

In the US, buying Energy Star rated appliances assures the consumer that the appliance will be among those to use the least energy compared to other appliances. And from a functional standpoint, faucets such as hands-free taps, which work by simply placing your hands under the spout, help save water and energy. LED lighting solutions in appliances and in our kitchen lighting plans drastically reduce energy consumption.

"Technology helps everyone who enjoys cooking and wants to have better-quality food"

Local farmers' markets are nothing new, but now we are getting fresh fruits, vegetables and even meat delivered at home, a great convenience simply by ordering what we need online. As we have more reason to be comfortable at home thanks to the ease of ordering what we need when we need it, we are cooking more, enjoying the process more and eating more healthfully. A home kitchen may already have a sous vide cooking appliance, a convection steam oven, a quick freezer or vacuum sealer. These and other kitchen tools help preserve the quality of food.

"Every family has its own needs and their kitchen has to be different from everyone else. Therefore, we cannot speak of homogeneity"

When we assume that globalization is impacting kitchen design, we have to be very cautious. Every culture has different needs, both aesthetic and functional: different cooking methods, different interests in appliances (features, sizes, or types), different habits and behaviors in the kitchen, among other differences. A designer must discover each client's unique lifestyle patterns. Trends often tell a story, illustrating how design is affected by world events, targeted interest in particular cultures or demographics, emerging styles, colors and more. It is up to designers to consider current and future trends, clients' habits, and anticipated present and future lifestyles in an effort to create a kitchen which will have the longest lifespan possible.

"The kitchen has three components: aesthetic, functional and emotional. We often forget that the kitchen is a place that arouses emotions"

The kitchen is the place where all five senses reside! This special space in the home should be designed with three attributes in mind: one's personal aesthetic, smart function and the presence of an emotional component, although the emotional factor is typically not considered. We are working more at home and there is less need to venture out for food and virtually every other type of purchase. Our homes are and will continue to be a place of refuge, joy and peace more than ever; thus, the emotional component in kitchen design is emerging as an important element for designers to be aware of and to uncover.

Bigger windows, quality art, music and comfortable furniture are elements that contribute to a wonderful feeling of well-being, cultivating a positive emotional response. Smart, efficient appliances, environmental sensitivity, design that is personalized with an aesthetic layer in balance with function (both aesthetics and function must be considered equally at the start of the design process) will nudge "form follows function" aside.

The kitchen will become an ever more personalised expression of living healthfully, intentional well-being, flexible social interacting and an emotional piece of increased joy.



Sian Supski

Doctor in Sociology and Research Fellow at Monash University. *Melbourne, Australia*.

Australian sociologist Sian Supski specializes in analyzing the influence of food in different cultures. Her doctoral thesis focused on the role of the kitchen on women in western Australia in the early 50s. She analyzed the relationship between kitchen design and the changing role of women in society at the time.

"The kitchen was transformed from a family gathering place to a space designed for only one person, a woman, who was isolated from the rest of the family"

Throughout the 20th century, the kitchen went from being a space around which the family gathered to being influenced by efficiency experts. The aim was to enhance the professionalism of work in the home. The scientific management being applied in factories was transferred to kitchens.

This phenomenon started in the U.S. in the 1910s and 1920s and moved to Europe in the 1920s and 1930s. It is part of a modernist design driven by the idea of a "work triangle", which proposes that the sink, refrigerator and oven should all be in a particular triangular arrangement. The space was transformed from a family meeting place to a space designed for women, who were separated from the family and family life.

Later, in the 1960s, kitchen design changed again. Although still influenced by the "work triangle" it was renamed "work areas". The kitchen is now becoming a kind of living room and dining room. The space will continue to grow so that all family activities which once took place in separate rooms will occur in the same place, which we will continue calling "kitchen".

The other side of the coin is that in 25 years we could see some homes with no kitchen, only a sink and a heating plate, because it is convenient to go eat out at affordable or expensive restaurants.

"The space devoted to the kitchen will grow and we will need more food storage cabinets"

There are women who cook three times on a single night. For example, a family member has a gluten allergy, another eats everything and another just likes whole food. Surely something like this has an impact on kitchen design and how ingredients should be stored. There should be different kinds of cupboards and work surfaces and perhaps various utensils and appliances to deal with those kinds of issues.

"Energy awareness and sustainability will become increasingly important, something that will no doubt also have an impact on kitchen design"

In terms of sustainability, appliances have been sold with energy efficiency ratings for 20 years. And there is increasing social awareness of issues such as water consumption:

The kitchen will again become the family meeting point it was in the past.

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Teaching kids to cook is basic and tv programs are helping create this new awareness. taps are more efficient, some people use buckets in their sink so that they can collect that water and then use it on their gardens, etc.

Sustainability will become increasingly visible, and the way we use energy and water will have an impact on design.

"TV shows make gastronomy approachable to all family members and that affects the configuration of kitchens, which can no longer be isolated"

The foodie movement and the proliferation of cooking shows on TV and magazines have a great impact on kitchen design. Australian chef Stephanie Alexander, for example, appears on TV and works at a foundation promoting home gardens and teaching children how to grow, cook and eat their own food.

She seeks to promote sociability and learning, helping children learn where food comes from and appreciate what they eat. Regardless of the criticisms faced by these programmes, they are teaching a new generation how to cook.

The foodie movement has its pros and cons, but the most positive thing is that it makes cooking approachable to people. And in terms of design, this will open up the kitchen space. It must serve as a kitchen, living room and dining room. People no longer cook by themselves, like women in the early twentieth century.

"Our home is our refuge and we increasingly invest more time and money on it. According to statistics, in 25 years, we will remodel our kitchens an average of three times"

Some of the trends that influence current kitchen design is women in the workforce, declining birth rates and smaller families.

The home has become a place of safety and this fact makes us spend more time and money on renovating it. In the coming 25 years, driven by the idea of having a cohabitation place where we eat, live and "dwell", we'll renovate our kitchens an average of three times in our lifetime.

"The kitchen is a magnet for people around fire and heat. That's something that comes from way back, from Australian indigenous to the working classes of the twentieth century"

Australian indigenous did not have a room called "kitchen", although for them gathering food and cooking with fire were very important activities.

Precisely due to the use of fire, upper-class homes later on often built the kitchen as a separate building or room away from the main house. The reason was the danger of fire and the presence of odours, which people did not want permeating the house.

Over time, working classes placed the kitchen and the fireplace in a central location, since it allowed them to cook and distribute heat throughout the house. The risk of fire was a given.

And what do we see now? The central kitchen island, the workplace, is a metaphor for the fire and heat that attracts people to a meeting point.

"Equipment is not the most important element. Education and learning are essential for us to be able to cook in any kitchen"

My generation from the 60s and my children's generation in the 90s have not learned to work in the kitchen. It is important to re-teach our children how to cook. If you know enough, you can cook in any environment, even if in 25 years we all end up living in kitchenless apartments furnished only with a heating plate and a sink.

Statistics indicate that in 25 years we will renovate our kitchens an average of three times.



Camiel Weijenberg

Dutch Registered Architect, founder and director of Weijenberg Pte. Ltd. *Singapore*.

Dutch architect Camiel Weijenberg is founder and director of design studio Weijenberg based in Singapore. Their projects stand out for their unusual harmony combining cutting edge technology with traditional materials. Weijenberg's most representative projects feature sustainable architecture elements including the international award winning RAW, a restaurant which has become a landmark in Taipei (Taiwan). The magnificent spatial experience has been designed not as a place to eat but as a stage for a performance where food is the main actor.

"I can imagine that the kitchen in five years will be much more efficient and more social"

In the next 25 years food preparation will be much faster. We can already see it in the way we make coffee and bread, but I suspect this trend will extend into the future and will be influenced by chefs from different cultures, including more diverse types of food.

The kitchen has always been a place of gathering, not only a meeting place for eating, and we see that it will become even more a social space. In our projects, the kitchen is seen increasingly as the centre of the home. In addressing the design of a house, we take the traditions of each country and adapt them to the requirements of a modern kitchen, ensuring a seamless integration of the functional element, yet creating a space that is exciting and allows for social interaction.

"Inevitably, the role of the kitchen is determined by each individual culture"

It is important to underscore the duality of the kitchen as a quick and efficient workspace that also serves as a cohesive social element. The social component should give it a stronger presence in the home because it is the place where people meet and connect.

But the kitchen's presence in the home is determined by the culture where the home is located. If you are in India or Southeast Asia, you have the influence of Vastu Shastra, the ancient Vedic science that studies the harmonic cohesion of housing structures with the laws of the cosmos, affecting how you build the kitchen and its position in the home. In China, Feng Shui dictates that the cooktop not be placed below a bedroom in the house, or that a wc room sits above the dining area, for example. In Europe, these principles are less important and sometimes the kitchen is even found next to the main entrance often relating to the street. So, the relationship is very close to the outdoors and it is very easy to see who is coming or leaving the house.

To design the restaurant RAW in Taipei (Taiwan), we visited local kitchens and witnessed that they are very active spaces, featuring a food steaming area on one end, a cleaning area on the other and the prep area in between. So while you eat you're surrounded by all these working spaces and the movement of staff around you. At RAW we tried to echo this model, creating a connection between

Household appliances will tend to interact with each other.

The future will belong to the most functional, efficient and social kitchens. the restaurant, diners and action in the kitchen, the bar area, the movement of staff, creating a social interactive lively place. Coupled with the way we use materials, we have sought to create a more enjoyable experience and an aesthetic appearance that fuses with function.

"Globalization can be seen in some appliances but not in all kitchen trends"

Each kitchen will have its own trends. The Chinese market, for instance, will favor the use of steam and wok-style cooking. And in Europe we can foresee a prevalence of elements for grill-style cooking.

There is no doubt that cooking is very linked to how we feel, our comfort zone and what we like to eat. It has immense relation to childhood memories and how we eat today is important in how this translates to design as well as of course closely related with the culture of each place and the traditions of a family.

"The evolution of the home kitchen will lead us to an integration of different devices"

We will find smaller kitchens with a larger number of devices all which have different uses and will be able to integrate with each other via technology to deliver the comfort food we crave in a shorter time.

We will be able to eliminate steps so processes can be more efficient and intelligent. The kitchen might become almost like a dispensary machine. You could prepare the cartridges and when you get home you're all set, ready to eat.

"The kitchen influences the distribution strategy of all elements in the home"

The placement of the kitchen in a home helps the distribution of spaces in the entire house and can be a very important starting point. We are currently designing a high-end bungalow in Penang (Malaysia) where we have made the kitchen the centre of a colonial house surrounded by pavilions. The whole house is conceptualized around the colonial house with its central dining area, an important area where people interact. It is the space where people have a drink, begin preparing meals, enjoy a snack or an aperitif. How we use the kitchen is very important for our studio. We select eco-friendly materials, and ensure that they integrate seamlessly in a clean environment.

"There are a lot of innovations that are still unresolved and we will evolve towards a reduction of intermediate steps"

One of the areas where innovation is most present is the question of solutions that ensure hygiene. Dutch company Quooker launched a product that provides boiling water instantly, a great invention that adds value to the kitchen because it provides more flexibility and efficiency. This is a clear example of how in coming years we will see innovation reduce steps in the kitchen, such as washing, preparation, cleaning and refrigeration. In this sense, there are a lot of improvements that are yet to be resolved.

As a design studio, what we would like to find is new materials that fit together better and maximise hygiene, breaking the risks intrinsic to large number of connection points and edges involved in kitchen construction. This in turn would decrease the wear of doors, drawers and constantly moving elements required in these spaces with a much more hygienic setup that is also easier to clean, embracing cutting edge technologies and solutions to create a modern kitchen with a link to the past.

The kitchen will not be a globalized space: each culture will define its own reality.



Richard Wrangham

Professor of Biological Anthropology at Harvard University. *Boston, United States.*

British expert Richard Wrangham has studied the behaviour of Kanyawara chimpanzees at the Kibale National Park in Uganda. His research traces human evolution and primates' lifestyles. He is an academic expert in chimpanzees' social systems and, more recently, has analysed kitchen use. In 2009 he published the book Catching Fire: How Cooking Made Us Human, where he posits the hypothesis that cooking food is an essential element in humans' physiological development.

"The kitchen defines the home everywhere in the world, regardless of physical differences in the kitchen space"

Throughout my career I have studied the behaviour of chimpanzees. When I think of the kitchen space, I inevitably compare how humans and primates act. And I not only think of kitchens in the U.S. or the Western world but also how the space is used by people I work with in Uganda. There are people who live in one-room households featuring a small fireplace with three stones and three crossed sticks from which to hang a pot.

For billions of people, that is the kitchen. The contrast is extraordinary. In Western countries, we have a room dedicated specifically to food preparation. And in other places, the kitchen is a corner of the room where we sleep.

The amazing thing is that what defines a home worldwide is the kitchen. That's true whether you live in Boston or in a simple hut on the plains of Tanzania. You can be anywhere in the world and the human experience of cooking is the same: preparing food and waiting while it cooks, with others around you.

"In the next 25 years, we will see wealth redistribution and all homes in the world will have a separate space for the kitchen, and an oven"

In the coming years, we will witness a redistribution of wealth. I am optimistic and I believe the poor will be richer. Access to electricity and other forms of fuel is going to become much more widespread and we will lose the classic 'hearth', the three-stone hearth. In 25 years, I imagine a world where the kitchen will change for people living very simply in regions such as Africa, India, South America and China. We will see a real transformation. Every home will have a space designated as a kitchen, featuring and energy-efficient oven or stove.

"The kitchen will also evolve in Western countries. There will be more robots and mechanical devices that will make life easier"

The kitchen of the future will evolve in parallel in various places, but the biggest change is going to be for the people who have the most basic kitchens: the three-stone hearths. But while these people will get kitchens more similar to the kitchens we use today in Western countries, the kitchens in developed countries will also evolve.

The kitchen has a common element in any culture: preparing food together we have always gathered around the fire.

We will witness a redistribution of wealth and homes around the world will have a separate space for the kitchen.

Most changes will come from kitchen robots and automation systems that we can't even imagine at the moment which will make things extraordinarily easy. Fifty years ago, our families would have been surprised to see automatic vacuum cleaners darting around and dishwashers taking care of our dirty dishes. Is it going to be that much easier to make a *roux*, to prepare a *soufflé*? I imagine that machines will just make all of these things simpler.

"As we become more sophisticated, we look for richer and more varied tastes in our cuisine"

Some people imagine that food in the future is going to be some kind of synthetic, liquid stuff that will be piped into homes, making things incredibly easy and standard. But this approach seems very unlikely. What people want as they get more sophisticated and wealthier is a wider array of flavours.

"We will eat less meat, because it's really a luxurious way of producing food and we are seeing related health problems"

With regard to nutrition, I believe we will witness less meat consumption. And that will be something that is going to be imposed by the growing population of the earth. Meat is a luxurious way of producing food.

We are also increasingly aware of the health problems associated with eating meat. So, I imagine there will be an increase in plant-origin food, but since they have less interesting flavours, all the more effort will be invested into making recipes to enhance these flavours.

I look forward to seeing how the brilliant innovators of molecular gastronomy find, in the absence of meat substitutes, creative ways of giving us foods that will replace meat.

"I would love for the future kitchen to be seen as part of the living room, because this would imply less space between the cook and the rest of the family"

I live in the United States and kitchens here tend to be relatively large. They are large to the point that people eat in the kitchen and, of course, this is a fascinating approach. What will prevail the American model or a more Japanese or European model where food is prepared in the kitchen then brought out to a dining room?

Having experienced both, I think it's rather wonderful if the kitchen is conceived of as a part of the living room. It would imply less separation between the cook and the rest of the family.

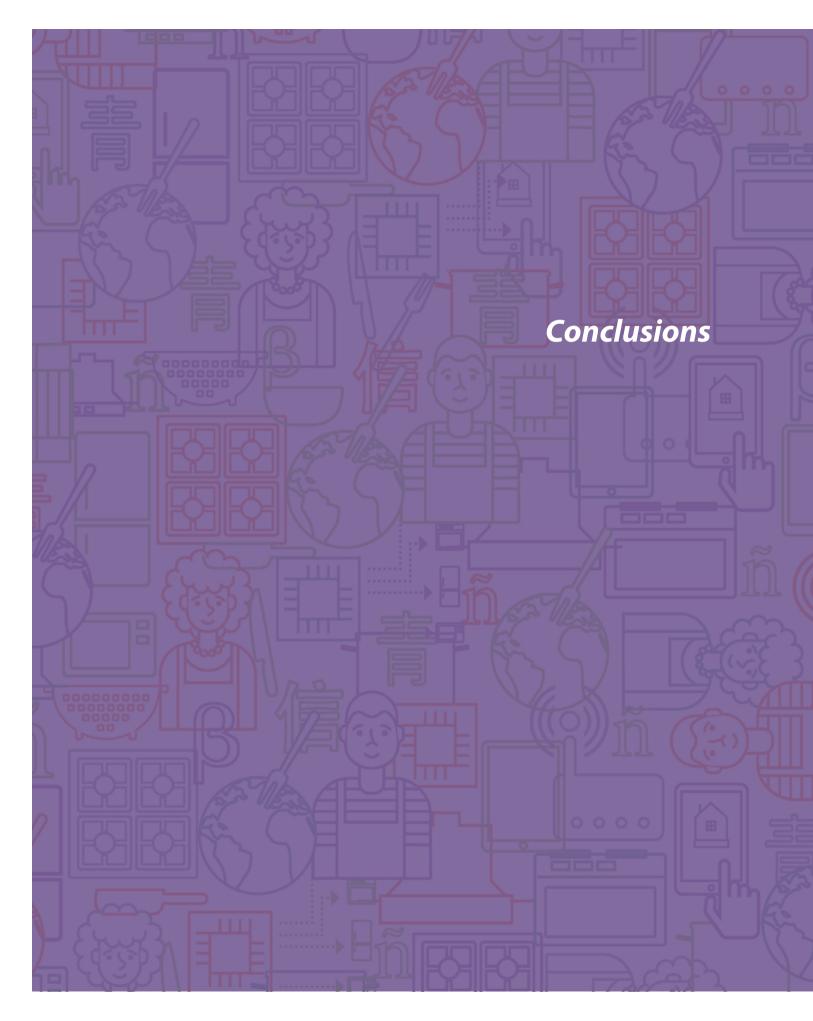
Having children sitting around the table doing their homework while listening to the bubbling food just makes for a more united family. So, I would hope that that is the future.

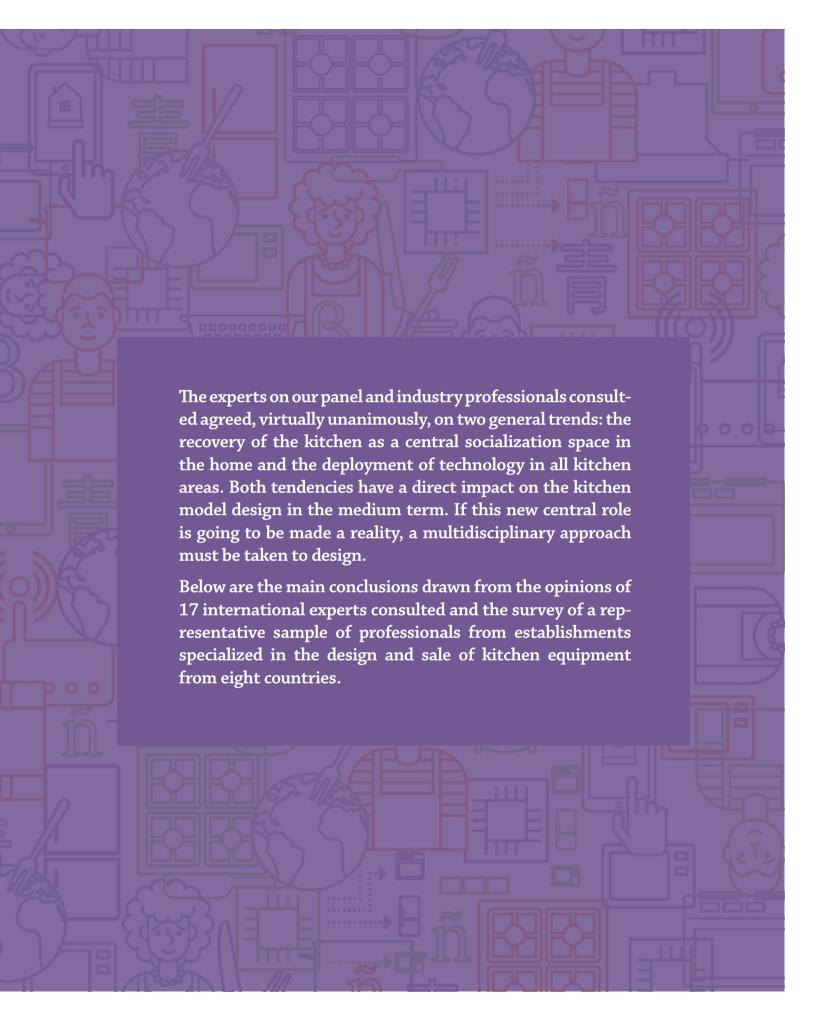
"We will witness a global convergence in terms of food. And in terms of cooking techniques, the future will be more homogeneous"

I think we're witnessing a great global convergence in terms of food. There is obviously interest in finding regional foods and appreciating them, but they get brought into the global conversation and become part of everybody's diet.

Likewise, I would imagine that cooking techniques in the kitchen will be converging as well. I therefore find it hard to believe that the cultural diversification in the last few hundred years will continue. The future of the human kitchen experience is going to be much more standard in the future.

When the kitchen is seen as part of the sitting room there will be less distance between the cook and the rest of the family.





90 conclusions

1. The kitchen recovers its central space in the home and takes a leading role in home design projects.

The central space of a home has historically been the room used for cooking food given the attraction of fire as a source of heat. However, the development of home heating systems and the upper classes' rejection of kitchen smells and noises pushed the kitchen to the sidelines.

Today, it has been able to recover its role as central hub for meeting and inter-generational relationships in the home, due to aspects such as smaller home surface areas, women in the workforce, the need for work/life balance, new eating models and new technology and materials to equip the kitchen. This recovered relevance will require kitchen design to be taken much more into account — both aesthetically and functionally — in home construction and refurbishment projects.

2. Its consolidation as a hub for family interaction and leisure will lead to greater integration of the kitchen within the rest of the house.

The consolidation of the kitchen as the centre of the home will mean that, in addition to maintaining its function as a space for food handling and cooking, it will be be used for family gathering and leisure activities that would have been carried out in other places of the home. The kitchen will be a multipurpose space to eat, watch TV, surf the internet, work or simply meet with family and friends.

This will mean the gradual popularization of a kitchen model that is fully integrated with the rest of the home. We can foresee the disappearance of the kitchen as a completely standalone space. Instead, it will connect with the dining room and, depending on the surface and distribution of the house, serve as kitchen, dining room and living room. This progressive integration will mean, on the one hand, the deployment of new solutions to guarantee hygiene and safety and, on the other, a greater personalization and flexibility in the design of this multifunctional space to ensure the comfort and well-being of users.

On this issue, experts consulted underscore the emotional value of the new kitchen models, enhancing its role as a space for relaxation, but also for fostering community and interpersonal relationships.

Connectivity and smart appliances are the main areas of technological development in the kitchen.

The transformation of the kitchen's role is inevitably linked with technological advances and the impact of digitization both in relation to food and the increasing use of the kitchen as a space for work and leisure. According to both the survey and expert opinions, the most immediate technological innovations in the kitchen environment will be connectivity and the development of smart appliances, which will naturally integrate in the space to facilitate hands-on experience and allow sharing it with other users.

In an environment of increased collective experience, technological innovations should also facilitate the use of household appliances and other equipment by all household members. These changes will specifically benefit children and the elderly, who are currently limited in the kitchen for reasons of safety and access.

Although less immediate, other relevant technological applications are directly related to sustainability: water and energy saving solutions, and waste management.

4. The technological and digital boom will contribute to a progressive professionalization of the home kitchen.

Technological progress and the awareness of digitization issues have fuelled the foodie movement, resulting in an increase in the general public's passion and interest ingastronomy. This movement has also received the support and encouragement of *haute cuisine* chefs, willing to share their expertise and positioned as advocates of values associated with healthy and sustainable eating and promoting the consumption of quality products.

The price reduction linked to technological evolution has allowed domestic kitchens to enjoy appliances that to date could be found only in professional kitchens. Similarly, digitization and connectivity have facilitated access to professional chefs and the dissemination of their expertise through new media and platforms (tablets, smart phones, etc.).

92 conclusions

Materials should evolve towards greater flexibility and functionality.

The centrality of the kitchen in the home and the multiplicity of uses will also have an impact on the evolution of materials, which should allow this flexibility of use without jeopardizing its durability, safety and hygiene. Likewise, technological advances must progressively incorporate functionalities which were unimaginable a few years ago: connectivity, integration of screens and control elements, tactile functions, etc.

An example would be, for example, the trend towards multifunction worktops, which allow cooking directly on the surface without damaging it and in keeping with the highest safety and hygiene standards. Quartz is almost unanimously mentioned as the material with the best future prospects in all countries consulted.

6. The globalization of the kitchen will be partial: it will affect design and equipment but the diversity of local customs will prevail.

The globalization of the kitchen — understood as the extension of a common model throughout the world — will mainly affect design and equipment, but most experts consulted believe that the diversity of customs of each community will prevail. The most globalized aspects listed include the tendency to consider the kitchen as the centre of the home, and the popularisation of new appliances and materials, albeit adapted to the preferences and specific resources of each place (ingredients, types of cooking, culinary tastes, etc.)

The survey carried out with kitchen shop professionals pointed to global trends in space design. There was total agreement regarding a kitchen model integrated in the home and unanimous feedback regarding cooking style and the main refurbishment criteria.

Likewise, the recovery of the central role of the kitchen and the growing foodie movement will also boost local traditions and customs, accentuating diversity.

The new kitchen model design necessarily demands multidisciplinary involvement.

Experts almost unanimously agree that the kitchen industry will undergo a transformation in the coming years and the diversity of trends observed (technological evolution, digitization, integration in the home, culinary professionalization, etc.) will force practitioners to face the design of this new model with an interdisciplinary approach. Projects must necessarily have input from designers, architects and interior designers, but also — at least when it comes to defining the different models to be implemented — from nutrition, sociology, psychology and environmental protection experts, among others.

Facedwith this challenge, industry professionals consider that they are prepared to meet new user demands, although there is also a certain reluctance to accept the scope of this transformation.

The evolution of the kitchen space can boost improved health and local economy development.

Reflections on the evolution of the kitchen space in the home shine the spotlight on the impact of this transformation on other aspects not directly related to its use or equipment but of enormous social interest. The tendencies in this regard include:

- Improved health, driven both by the generalization of healthier cooking methods and the consolidation of the foodie movement, which endorses the commitment of professional chefs for healthier cuisine.
- Local economy development: the popularization
 of healthy cooking is directly related to consuming
 seasonal ingredients and favouring local products,
 which can contribute to the development of the local economy in this sector.
- Boosting home gardens: thanks also to access to new technologies, some experts predict a boom in growing food at home.
- Transmission of knowledge: Finally, it is important to emphasize a transversal tendency in how
 the kitchen is acquiring a role as a collaborative and
 creative space for learning and transmitting health
 and culture, both in the family and, thanks to connectivity, in a much larger context.





The Silestone Institute is an international platform dedicated to the study and dissemination of knowledge about kitchen space.

Based on the definition of the kitchen as a social and work space, the Silestone Institute promotes initiatives that help to generate and disseminate knowledge from a multidisciplinary perspective: the evolution of habits, customs and behaviors; best practices; the study of materials, utensils and furnishings; the application of technology; hygiene and health, etc. Its scope includes both domestic and professional settings, with the understanding that professional practice is the source of knowledge and innovation that will later serve for domestic use.

The Silestone Institute has an international impact as a center of reference and forum for the exchange of views and knowledge about cooking, adapted to different cultures and societies. In this way, the Institute encourages the involvement of stakeholders from various fields: citizens, institutions, government agencies, regulatory agencies, health professionals, architects, interior designers, chefs, environmentalists, immunologists, global opinion leaders and private sector representatives.

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Silestone Institute Rambla Catalunya, 18, 1° 08007 Barcelona Tel. +34 93 481 36 20

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