INNOVATION BEYOND AESTHETIC DESIGN. USER-ORIENTED CREATIVE IDEAS

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1. INTRODUCTION

The idea to produce this paper emerged in May 2009, in the midst of the global economic and financial crisis, because we thought - and today steadfastly maintain - that it was necessary more than ever to reconsider the future of ceramic tile with a creative and innovative approach.

Starting from the premise that not everything in the ceramic tile world has been achieved or invented yet, there are many potential ways of making ceramic tile evolve and positioning it as a product with a great future ahead of it. But in order to achieve this, in our view, both manufacturers and ceramic designers need to focus more on the end-user.

The current way of developing new products in the ceramic tile sector places a heavy burden on aesthetic design, leading to a host of new designs with merely aesthetic variations. That is why new products seldom prove innovative.

There is very little innovation that is user-focused, or focused on user needs. Those needs can be verified in terms of the different consumption trends, which are clearly identifiable in the global marketplace. Globalisation means that those markets become more and more homogeneous in their consumer trends, although obligatory local adaptations are always present to a greater or lesser extent.

In this paper, without underestimating the need to innovate in aesthetic design in any way – this being, in fact, another of the consumer tendencies that impose themselves strongly, the search for pleasure in aesthetic design - we propose to reconsider the creative process and the launch of new ceramic products, focusing much more closely on consumer needs.

After revising current consumer tendencies, the authors present some innovative proposals for the sector, which have arisen from a systematic creative process applied by the authors.

These ideas are not finished proposals, rather they are at an embryonic stage, without further elaboration, and proposed more with the intention of breaking new ground in innovation as far as ceramic tiles are concerned. Also as an example of what a user-focused systematic creative process might bring forth.

We should add that we are doing this without fear of proposing things that today might appear to be impossible, because precisely the point of the most radical approach is to do things that seem very difficult or quite impossible.

Who would have thought just 15 or 20 years ago that nearly everyone would have a cell phone (and could speak from anywhere to anywhere!)? And that there would be an Internet connection (then unknown), from which we could navigate, receive and send e-mails (all of that unheard of) and which besides, was a personal agenda, and a digital photo room of high resolution pictures?

If in the course of the present presentation, any of the ideas that are presented, or some other offshoot of those ideas should be 'adopted', then we will have achieved one of the paper's main aims, namely to act as a catalyst in fostering creativity and innovation in the sector and in promoting the materialisation of concrete results.

2. THE CREATIVE PROCESS

During the creative process of this study, carried out in July and August 2009, the leading consumer tendencies were first analysed. Later, creativity sessions were carried out with each, focusing on the uses or benefits of ceramic tiles in relation to each tendency.

In the creativity sessions, different specific tools to help activate the process were used, such as analogies with other sectors, scamper and brainstorming techniques, mental maps, and the user experience cycle.

As a result of the creative process applied to each tendency, a host of ideas arose which were first linked by concept, and then grouped together by way of generic utility to users.

Users, in their experience cycle with ceramic tiles (from purchase, to disposal, passing through the stages of use, maintenance, etc.) may perceive different types of utility (called 'utility levers'):

- Productivity: time saving, money saving, performance enhancement (greater efficiency all round).
- Simplicity: simpler.
- Convenience: easier.
- Risk: less usage risk, purchase risk, etc.
- Entertainment and image: more amusing, image improving.
- Friendly: environmentally friendly, socially responsible, sustainable.

The utility enhancements provided by an innovative proposal may occur in one or several of the stages of the experience cycle of the ceramic tile user or in those of the tile buyer.

2.1. Consumer trends.

The trends addressed, without going into greater detail for lack of space, have been as follows:

Trend 1: Increasing importance of emerging countries. Both as manufacturers of products of increasing quality and design and as consumers with increasing purchasing power, along with the desire to be considered on the basis of their own individual characteristics

Trend 2: The demand for greater transparency in the producer-consumer relationship is becoming ever greater. This is not just a matter of price transparency, but rather of greater openness in use and consumption experiences, corporate behaviour, etc.

Trend 3: Valorisation of what is false, of imitation, if it is well made, as a satisfactory consumption object, and form of escapism from the surrounding crisis.

Trend 4: An increase in clear and concise consumer language, particularly in the use of the web 2.0 (social networks, blogs, etc.) which is distancing itself more and more from the traditional serious, boring, and predictable language of Business.

Trend 5: Consumers increasingly demand and value the protection, care and generosity that the businesses they are involved with can offer.

Trend 6: Luxury, related to shortage, will always have a future, but at present with certain particular connotations based on discretion, on exclusivity, limited editions or bespoke products.

Trend 7: Consumers are seeking ever-more customised products, in particular where these are considered to contribute to their personal image; besides, they wish to combine this with their acceptance by the group or tribe they belong to or aspire to.

Trend 8: Consumers are more interested in developing their personal image, in fostering their personal brand (ME Ltd,) something the Internet greatly facilitates, in order to tell their story and the distinctive abilities and experiences in their own lives.

Trend 9: Speed, an increasing tendency for years, is evolving towards even greater speed. Time is scarce, increasingly valued by the consumer, who wants to use it to the greatest possible advantage.

Trend 10: The Internet connection is already at 100%. We can log on with different machines, in almost any place. Integration between real and virtual worlds is almost complete. Particularly amongst the youngest.

Trend 11: Another trend that has been developing for years now, but which is getting ever stronger is that of eco-awareness. Massive development is expected here.

Trend 12: Local products, returning to roots, products with a story to tell, are back again. This means exploiting the attractive elements of exclusive products that are only produced or distributed locally.

Trend 13: Consumers want to live the present moment to the fullest, enjoying the greatest possible number of experiences in the shortest possible time and seeking immediate gratification of their needs.

Trend 14: The recession we are living through affects consumption habits, promoting products or attitudes that provide savings, but which also furnish minor indulgences in order to help cope or to make the most of assets that we possess. (both physical and intangible: knowledge, experiences, etc.)

Trend 15: There are also a fair number of less novel trends but that nevertheless have had a growing impact in recent years, which call for a specific response and enable good money to be earned: the importance of mini-consumers (spending on children is growing all the time); women have a growing purchasing power and decision-making capacity, the niches constituted by older baby boomers in good health, with money to spend and the desire to have a good time, etc.

3. SELECTION

All these trends have been addressed at a creative level and, as mentioned, have led to a great many ideas. But, precisely due to their high number (over 350 in all), we've felt obliged to choose between them.

As a result, only a few ideas are being presented in this paper, which means that not all the trends are to be found among all the selected ideas, just those which are most valued by their authors.

To perform the selection, a series of criteria were established, whose post-evaluation for each individual idea allowed the most interesting ones to be singled out. These criteria relate to enhanced user value, the novelty factor in the sector, potential market size, and apparent viability.

The first two criteria, enhanced user value and sector novelty factor, are necessary conditions for innovation. Potential market size, if large, can allow the novelty to succeed and thus develop into a true novelty that will win over the marketplace.

Apparent viability has been underweighted, with the intention of not killing off any ideas that we considered of interest. It was attempted not to leave out radical innovations, bearing in mind that the aim of this paper is to act as a catalyst for the development of truly innovative ideas by other people, since radical innovations would probably be the most promising innovations.

4. INNOVATION PROPOSALS

Our proposals for innovation ideas, note once again in their incipient state, only as a sample of everything that still remains to be done, and of the creative process that has been followed, are now presented linked by type or utility levers for the user.

It should be pointed out that when we consider the final user, we can detect the emergence of a myriad of ideas and concepts relating to new types of ceramic tile functionalities, turning the tile into a product with active properties instead of it being simply a passive product, as has consistently been the case up to now.

4.1. Health.

A fair number of the most interesting ideas that have come to the fore are linked to the idea that ceramic tiles provide active properties for health. Health would be a specific component of the most generic utility lever, which is productivity for the user.

Tiles are products that may be present in multiple locations, in public places as much as in private dwellings. This ubiquity allows tiles to contribute properties linked to health, because tiles are out there where the people stay, where they live and where they work.

In other sectors there are many innovations linked to active properties for health. In the food sector, there is the paradigmatic case of Actimel by Danone, which needs no further introduction here and has been one of the driving forces behind an avalanche of products with properties that are beneficial to health.

In fact, a whole new industry has been developing, nutraceutics engineering, a combination of nutrition and pharmaceuticals, which is devoted to creating functional foodstuffs by adding supplements that have medical benefits for the organism to different foodstuffs.

For example, Nestlé has launched Glowelle, a daily drinking supplement developed by a group of employees, which promises to enhance beauty and to delay ageing effects. Danone is developing Souvenaid, a multi-nutrient drink that combines a series of nutrient active agents for Alzheimer sufferers.

Our most valuable ideas, related to the concept of developing active properties for health at the same time as benefiting from the product's ubiquity, would be active tiles (like Actimel), which bring health-giving bacteria into the environment. Or anti-flu tiles which would create areas 'resistant' to the flu virus, of particularly appropriate use in public places, such as hospitals or in private dwellings where there are young children or elderly people.

We also have anti-fly or anti-insect performing tiles, which could prevent illnesses transmitted by flies or insects or simply avoid the inconvenience of using traditional poisons. In this context, there is the example of the Apple I-phone application, which promises to get rid of mosquitoes by means of ultrasound waves that apparently frighten them: the phone as an anti-fly tool? Well, why not ceramic tiles?

Tiles that will wake (or still) the appetite would be especially interesting for school dining rooms or for people with problems with anorexia or bulimic problems.

Or tiles capable of treating water, for tanks, wells, etc., this being something that could be incredibly useful in countries or places with problems of access to drinking water. In the group of health-related ideas one might find ultra-hygienic tiles, for households with small children, public places, or hospitals, which operate actively against any type of infectious or pollutant element. When drafting the final version of this paper in September 2009, we learned that this idea is already being investigated at the University of Valencia.

If we already have tiles that carry out chemical processes in order to eliminate pollutant composites from the environment, why not imagine tiles that could convert CO_2 into oxygen, or tiles that could eliminate radioactivity? We might well be imagining tiles that would be trying to tackle two of the most important problems that humankind has in the 21st century, together with that of the scarcity of water and other natural resources

Not linked to health, but still with the most generic productivity utility lever, would be ventilated façades that generate wind power by means of micro pores in the tiles, and the air currents that circulate inside the structures. Note that ventilated façades can take up large surface areas and are exposed to the effects of the wind and sun. We must ensure that they are active and not only passive.

There are different examples in other sectors related to novel forms of harnessing energy, such as the Light Blossom lamp designed by Philips which only lights up in the dark, as and when necessary, through a technology of proximity sensors and in daylight opens out into petals like a flower storing up solar energy.

Another example of unexpected collection of energy for later use is that of KERS in Formula 1. This technology accumulates the energy expended in the friction of brake discs, and allows its subsequent use for a few seconds during overtaking manoeuvres.

4.2. Convenience.

Making life easier is a characteristic of progress, and ceramic tiles can play their part in making life more comfortable. Once more, there are many examples of this in other sectors.

Only the simple case of IKEA in Denmark will be mentioned: after noticing that about 20% of their customers came to their stores on bicycles, IKEA decided to offer a free bicycle cart service. In this way, they offered their customers greater convenience at the same time as allowing them to purchase more items, since they could be easily transported in these carts.

A case of ceramic tiles making life easier could be that of self-cleaning tiles, which clean themselves and require no maintenance, something especially appropriate for people unwilling to waste time on boring or merely unpleasant chores. In particular, the growing niche market of 'singles' (people that live alone), or those households where both partners have jobs.

Anti-odour tiles, particularly suitable for areas where ceramic tiles are traditionally fixed: kitchens and bathrooms. But they would be incredibly useful in restaurants, public eateries and diners, or in the bathrooms of public buildings as well. This is an example of a product with a new functionality linked to wherever it happens to be used.

One of the characteristics that cause inconvenience with ceramic products is their removal or disassembly, not only for the amount of physical work required but also for the amount of waste involved, and the need to get rid of this and to take it to suitable disposal sites, as well as the fact of it being a slow and drawn-out task, totally against the quick work that both users and installers are looking for.

For that reason, it would be very useful to produce tiles that could be easily destroyed, for example tiles that turn into sand particles straight away when combined with an agent or special product. Adding a touch of humour to this idea, imagine tiles with a sell-by date, which self-destruct on reaching it. We could have up to date environments, and the rotation so desired by manufacturers.

Other interesting possibilities that have been identified as linked to convenience could be: sound-absorbing tiles (which eliminate noise and are soundproof as well).

Light-absorbing tiles (to avoid luminous contamination) or moisture-regulating tiles (which absorb or release moisture to create a more pleasant environment or to simply make the atmosphere more stable where necessary).

4.3. Security.

Security or risk reduction is also a factor much valued by consumers. Once again, since ceramic tiles can be installed in any room, tiles have the capacity to act positively in matters of security.

Some ideas that have emerged linked to this concept are anti-wifi, anti-Bluetooth, or anti-coverage tiles. Nowadays, where everyone can have a 100% Internet connection and have wifi connection tools, it could be interesting to use tiles as a means of security in certain areas such as banks, data banks, public organisms, etc.

That is to say, in all those places with internal networks, which require maximum security in the traffic flow of their data in order to prevent intrusion into their networks and data emission. Or simply to wipe out Internet use on grounds of security. All this could be achieved by the emission of connection-breaking signals from the ceramic coverings.

The anti-Bluetooth option would avoid the insidious reception of messages with viruses or spam publicity in public places as is already happening.

Cell phone coverage could be annulled, in order to assure free space in hospitals, museums, cinemas, theatres, conference halls, etc. We wouldn’t just have signs forbidding cell phones, they simply wouldn’t work.

Tiles can also be used to do things while we are absent. In addition, we are interested in creating a safe environment: to do so, security systems could be created by installing tiles that transmit infrared rays from each tile, in different directions, or by tiles with movement or footstep sensors, which allow immediate detection of intruders.

Another possibility linked to security is tiles that detect above-normal temperature increases by sensors that would immediately signal security services or even emergency services, such as the fire brigade to avoid fire risk.

On the other hand, tiles could keep lower temperatures in areas where low temperatures are required. The same also applies to places, like research centres, where maximum temperature stability is required.

4.4. Entertainment.

Entertainment is also something that ceramic tiles can offer, and why not? Particularly for young children.

Ceramic tiles that could be painted and wiped clean again could be developed (like Villeda boards), which would spare families with artistic children a lot of upsets, which is every family. And the kids would think they were in heaven.

Still, on the subject of children, but not with a new tile functionality, we believe tile producers could form tie ups with big entertainment firms like Disney or Marvel, and have considerable potential to capture their interests, in order to create a series of tiles with their characters and designs. It appears an obvious option, even though it hasn't been pursued yet. And this is something that is actually happening in other areas, and intensely so.

4.5. Image.

Ultimately, consumption is a question of personal status, of image. Let's not deceive ourselves. As a result, any consumption that helps us enhance or renew our image in an attractive way will be of interest to us.

In fact, the trend related to the drive for an own image brand is bringing many new products and businesses to the fore, which satisfy these needs: Ziggs is a business that helps people manage their social lives on-line, creating a virtual brand for them. Users learn to improve their visibility on Google, to improve their social image and to manage their relationships online.

Does this seem an exaggeration? As evidence that this is growing, we have the yardstick of celebrity, Wired, which shows its users their popularity in cyberspace based on the number of Web hits related to them, the number of friends on their social-networking pages, and the number with a link to their photos.

At the head of this trend, we have the Vanity Ring, designed by the German artist Markus Kison, which is a piece of jewellery that displays social status instead

of financial status, indicating the number of Google entries the person has or the number with that name (the ring is updated by plugging it into the hardware with a USB connection)

In relation to image, and without needing to do anything on-line, though there are interesting ideas linked to this, we propose that manufacturers should establish alliances with brands closely linked to fashion and design, such as ZARA and IKEA on a broad level of consumption, or a jewellery firm like TOUS, on a more exclusive level, to develop tiles with their brands. And that these tiles should be distributed, by means of special displays, in their shop chains.

This would also involve innovation in the distribution chain, in the form of getting ceramic proposals across to the public (especially to women, who generally make most of the purchasing decisions for such items). Imagine the case of Tous: 'tiles only available at the jeweller's shop'. We would also be working with the sub-trend search for exclusiveness in luxury goods.

A traditional example of channel switch, such as the previous case, is that of drug stores at petrol stations, where pretty much everything is sold, especially foodstuffs, in places that were originally intended only to 'replenish' vehicles.

Another highly in-vogue option to be exploited, as already been mentioned, with room for growth, would be eco-tiles: tiles made from 100% recycled materials, with a manufacturing and distribution process respectful of the environment.

That would allow manufacturers to obtain the mark of environmentally clean material, which would soon undoubtedly become a differentiating aspect of the offer...until it became a minimum factor for success, as has already occurred with quality control and the corresponding certification.

There are an array of innovations in all sectors linked to ecology, though the example that most strikes one's attention here is the F3000 vehicle presented at the last Valencia Formula 1 Grand Prix, which took place in August 2009. This vehicle is constructed with a plant-based chassis, the steering wheel is made out of potato starch, and the exhaust cleans CO_2 from the air that circulates through the car. Finally, the petrol is liquid chocolate. Impressive!.

4.6. The process applied to other actors in the clain.

These are the ideas, linked to the end-users, which have been most apparent in the need to 'stimulate' the creativity of ceramic producers; however, creativity shouldn't stop there, it can and should work with all the actors in the value chain, beginning with suppliers and carrying on through manufacturers, advisers and traditional wholesalers.

In this sense, how about designing tiles with a designation of origin based on the exclusive raw materials that are incorporated into the tiles? For example, Sevres clay, or Tahiti beach sand. The idea of treading on paradise beach sand doesn't sound bad.

Or perhaps manufacturers with a new cold manufacturing process, which allows energy saving and could be less polluting?

For specifications writers (architects, interior designers), we can also focus on the specific needs of a professional group with growing weight in the sector: What about a permanent internal board for designing special products, outside the standard range, for certain projects that they may have, for example in contract installations?

Tile fixers must not be forgotten, for whom we could design an ultra-rapid dry tile-fixing system that needs no structure.

Distributors must not be forgotten either, for whom more resistant packaging can be designed, which would allow ceramic products to be warehoused more securely, and hence with more guarantees. Or this packaging could be made easier to remove and dispose of.

That is the case with Amazon which, in seeking to improve the environment and avoid customer frustrations, reached an agreement with manufacturers of the 19 most sold products on its Web site (including Fisher Price, Mattel, Microsoft, etc.), to create lighter packagings that are easy to open and to recycle, which protect better but not in an exaggerated form. This is a new example of functional improvement with the user in mind.

This paper has been mainly focused on the end-user, because in our view the end-user is where the most radical innovations are to be found, but it should be stressed that the creative process can also focus on the other stakeholders in the value chain, providing them with valuable ideas and therefore being of interest to ceramic producers.

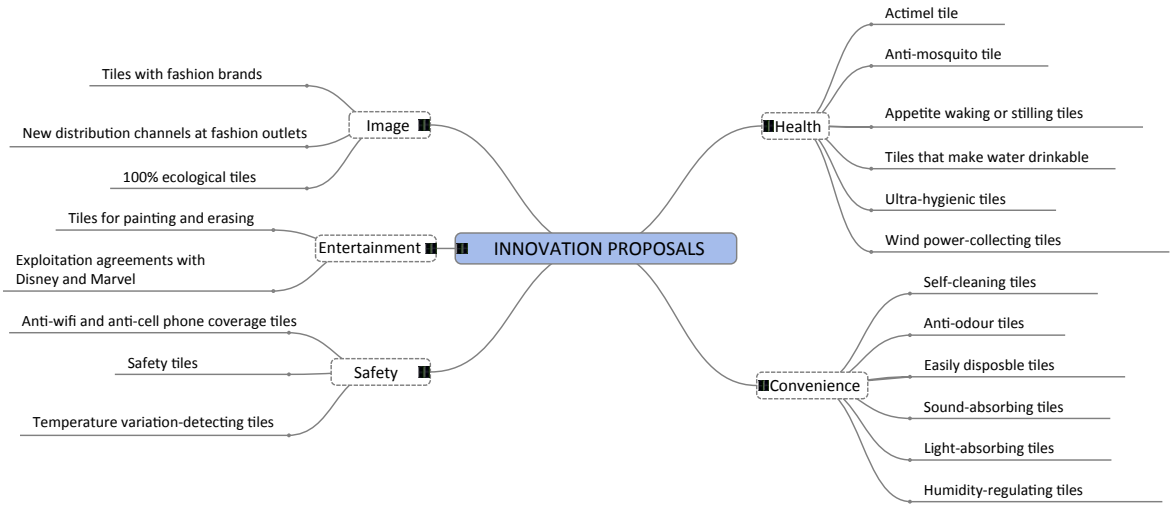

Figure 1.

5. CONCLUSIONS

We hope to have shown that not everything has been done, that we still have to go beyond innovation in design (colours, textures, relief, etc.), and that for this the user-focused creative process can be a key approach.

To do so, it will also be necessary to obtain ideas by means of a systematic process that has a consistent work base, as in this case, the main consumption trends. To get to know these trends, and examples of their applications in other fields, and to transfer them to the end-user enable a world of possibilities to be explored with immediate applications to innovative projects in the ceramic field.

We are convinced that innovation is one of the chief approaches that the ceramic sector has at its disposal to address not only the current crisis, but also to restructure the sector within a context of worldwide competition in globalised markets.

We hope that this presentation has been useful in sparking some idea linked to or derived from those that we have presented, though it must have a markedly innovative character.

In this case we urge you to start work on it, bearing in mind that innovation is 50% inspiration and 50% perspiration (at least): that is, work. We also wish to forewarn you that not all ideas are going to work, but that those that do will make up for the rest that don't, and will clearly improve company results and positioning.