Designing a Business Unit and Creating the First Ever Responsive Kitchen

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Is it possible to combine strategy, design thinking and scientific approach to develop a method that combines quality, creativity and efficiency, developing learning-samples to inspire change inside organizations? What tools do medium-sized companies own to enhance innovative processes with low financial exposure? How can we develop new know-how from team work? The "Offmat" case demonstrates how it is possible to propose effective multidisciplinary hybrid approaches in conservative contexts such as the secondary industry, with a designed and tested new process. This sample let us identify a new holistic approach to business innovation.

INTRODUCTION

Is it possible to transform stone into a technological and innovative device? The meeting with one of the main stone transformers in Europe produced the intention of a disruptive operation that could affect the strategy of the whole company. A contagious singularity.

By intertwining LEAN methodologies and the human-centric approach of design thinking, we mapped the value creation in the company activating a dialogue with the workers and the management, listening to people, asking for ambitions, discovering problems and the potential of production. This qualitative and quantitative analysis conducted with a multidisciplinary approach by designers, architects and marketing strategists allowed us to define a new method. We used it to design a platform that could let all the players express their potential to the maximum.

This is how the group's research laboratory was born, with the aim of promoting the relationship between humans and stone through product innovation. With this goal, we coordinated the new team, developing technologies that would allow creating a more direct relationship between man and surface, making the stone reactive. The result was the first responsive kitchen ever.

CONTEXT & PROBLEM / OPPORTUNITY AREA

The worktops market is one of the main sectors of consumption for natural and synthetic stones with 133.24 million square meters sold in 2016 globally. A relevant part of this amount (7 parts on 8) goes to

the kitchen and bathroom industry. The companies that produce and process stone slabs on an industrial scale are therefore closely connected to the world of furniture, its behavior, networks and production approach.

One of the leading European stone processors has hired us to design a demo product that could express the technical capabilities of the company, to launch a branding initiative for the Milan Furniture Fair (i Saloni).The company wanted to enhance the value perception of its worktops and its range of surfaces for architecture & design.

The company's plan posed a risk. Launching a demo to the public in the same exhibit where its clients were unveiling their new products could present the company as a competitor to her partners. For this reason, we proposed a re-briefing: instead of creating a demonstrative product (a kitchen) to show the technical potential of the company, we would research the know-how potential of the company to understand how to apply it and to build the best storytelling of it.

This reverse process aimed at mapping for the problem-solving practices implemented by the company during the years in a sort of "native" PDCA iterative approach (Plan–Do–Check–Act) as in the TQM's continuous improvement of processes and products. Our ultimate goal was to make explicit the innovative behavior of the firm and, subsequently, to apply it methodically on new subjects through a pilot-unit devoted to b-to-b special projects development. Something similar to the Value Stream Mapping in the Lean methodology.

This re-briefing allowed:

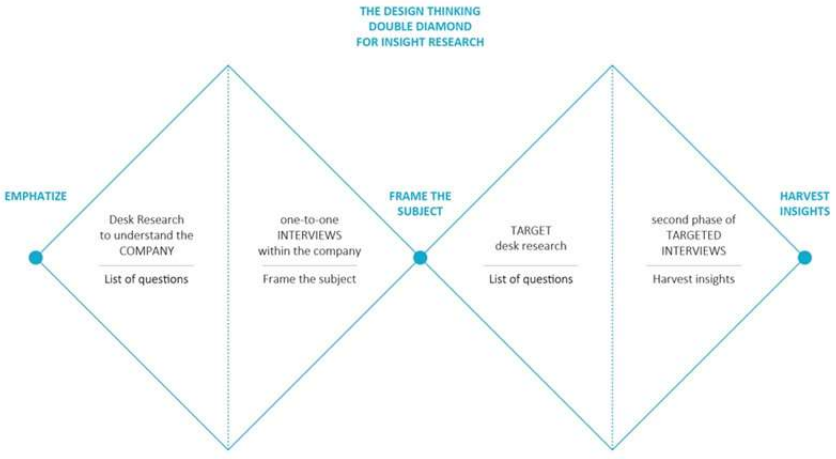
1. to refine the focus of the initiative: to establish the firm as the best partner in its field, consolidating existing business relations and creating new ones;
2. to initiate a company that considered innovation as a product's upgrade, to the concept of innovation as a contaminating internal agent inside the organization.

THE NARRATIVE

Empathy

To start the exploration phase, we activated a round of desk research and one-to-one interviews within the company. The first interviews led our group to define desk research that led to the second phase of more targeted interviews in order to dig into the VOC (voice of the customer both internal and external).

FIGURE 1
THE DOUBLE DIAMOND OF INSIGHT RESEARCH.



We interviewed key people working in diverse positions inside (department heads, production supervisors, marketers, sales, board) and outside the company (suppliers, distributors/retailers, architects). In this way we managed to collect a wide information base on industrial production, customers, market, employees commitment and we analysed them looking for insights (See Figure 1).

The survey team was made by a multidisciplinary group of professionals like strategic marketers, architects, industrial designers and mechanical engineers, in order to capture the diverse typology of relations and decision making inside the company and their strategic, economic, productive impact on the firm's proposal to clients. The project managing team included the marketing manager and the company's research and development manager in order to maintain a strong connection with the corporate structure.

The multidisciplinary composition of the group supported an open platform for debriefing and analysis based on mutual integration, essential for the understanding of such diversified data. In an extremely compressed time (only six weeks) we visited the corporate factories in Italy and Germany, mapped the company's distinctive capabilities, verified the reference markets, and the main trends.

The Definition

The research allowed us to identify the three main company know-how macro-areas:

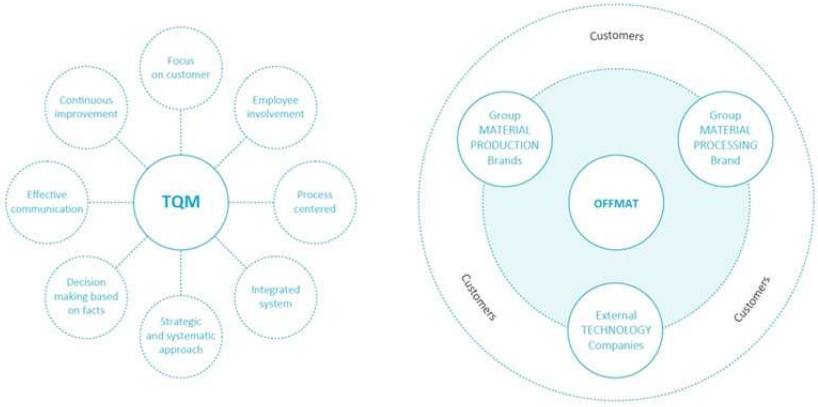
1. The production of synthetic stone (the culture of the material);
2. The industrial processing of stone worktops (the company's core business);
3. The inclusion of technologies (a relevant theme as worktops are the playground to many devices).

We crossed the insights from our investigation to the three know-how areas to identify potential innovations responding to the emerging insights from the empathy phase: "customizable integrated devices insanely easy to use" and "new durable materials with natural touch". However, we were missing the tool that could stream the action without affecting the company's D.N.A. but bringing value to the all group through its work. Thus we outlined the guidelines for a "Group Product Research Laboratory", an independent business unit that could engage experimentation, operating dynamically and building bridges towards new directions. The new unit would have been devoted to prototyping new ideas, products and solutions based on the collaboration of the different group competencies and technologies. Its pillar are:

1. Customer centricity;
2. Strategic approach;
3. Employee involvement;
4. System and competencies integration.

Common principles with the fundamentals of TQM system used by companies engaged in organizational advancement through a commitment to customer requirements (See Figure 2).

FIGURE 2
TQM PILLARS AND THE OFFMAT ECOSYSTEM.

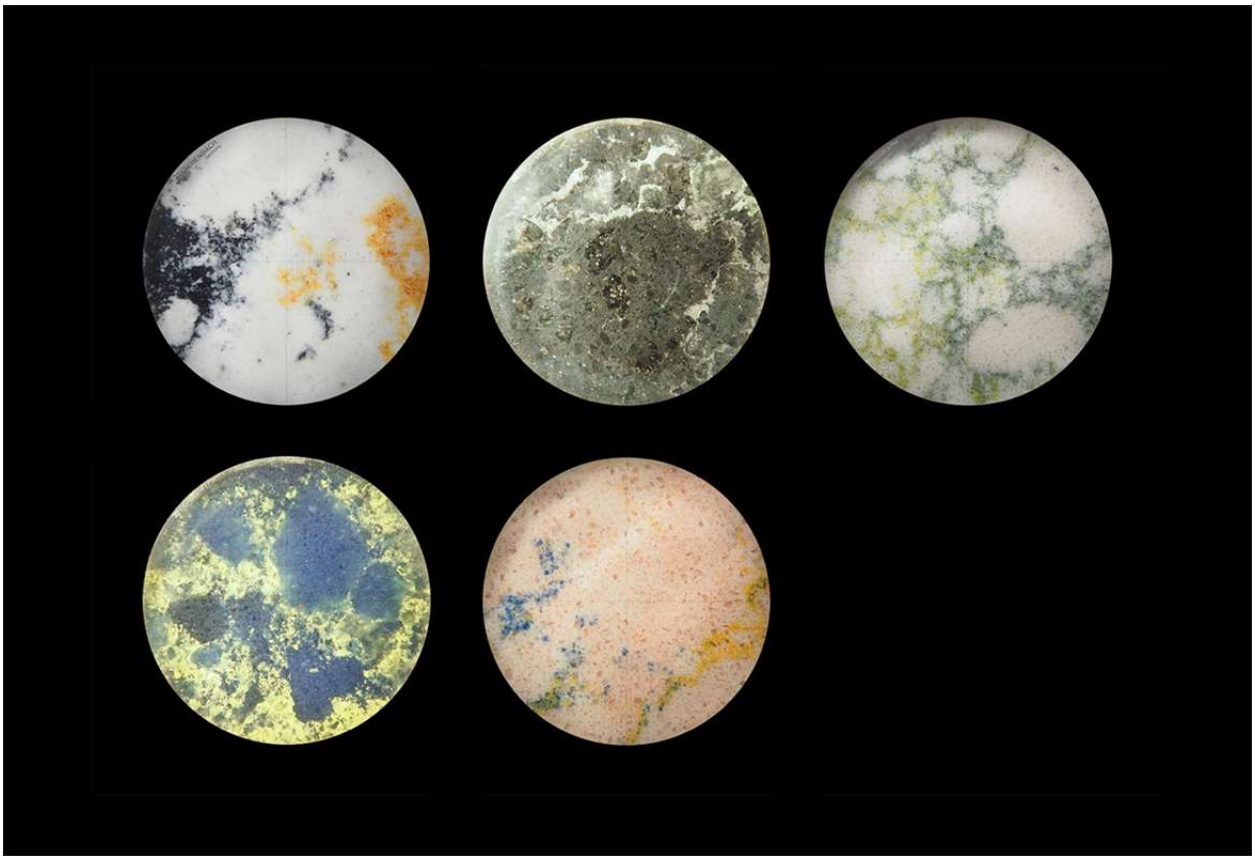


Since the company identity is intimately connected to the stone processing and its products are sold as technical elements to design furniture brands, we defined a strategic framework based on quality, collaboration and mutual enhancement: the ingredient brand approach (like Intel, Gore-Tex, Vibram). This allowed us to create the necessary coherence filter to activate parallel experiments which could then be summarized in a common synthesis. We called the new unit "Offmat", from the union of "Officine" (Workshop) and "Materia" (Matter).

Impossible Stones

Starting from the synthetic stone production, we reversed the common design approach based on the Market Follower strategy in a Customer Centric Strategy. Instead of designing a new perfect imitation of the natural stone we activated the research team to identify a series of macro trends in design and architecture projects. We then selected a panel of blends proposal based on the different cultures and market areas and implemented it in the industrial process of engineered stone production prototyping samples in a series of iterations to optimize possible technical and qualitative issues (See Figure 3). The final result was a collection of "impossible stones" proposed as tools for architects in the design process.

FIGURE 3
THE VULCANS STONES SAMPLES FROM THE LABORATORY TESTS

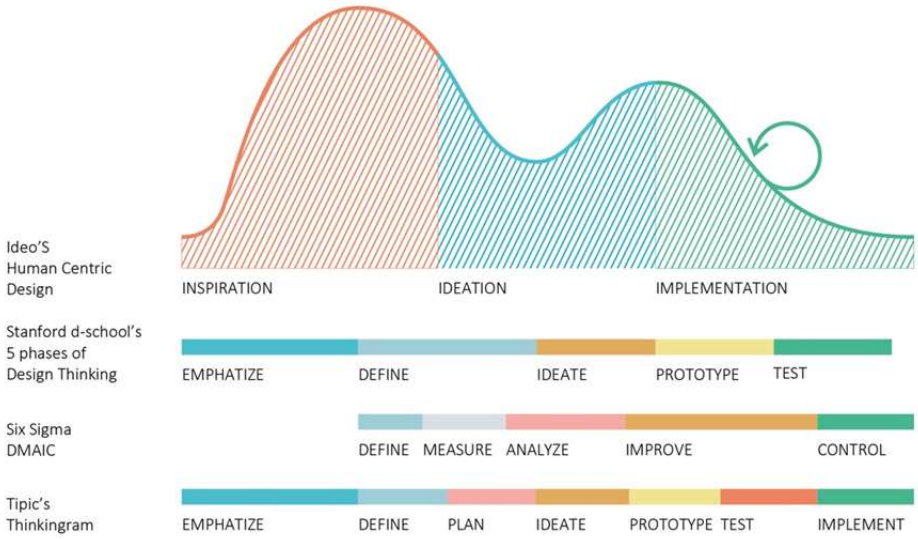


It was a small revolution in an industrial sector (the production of synthetic stone) where technology had always been used to produce better and better imitations of natural stone and not to create "new design tools" (a step forward from push to pull strategy).

The collection was named "Vulcans", inspired by the place where mother nature mixes matters. This process, a sequence of customer centric research, ideation, prototyping and industrial implementation, results can be read as a contamination between the 6 sigma process (DMAIC) and the Design Thinking. It

mixes the advantage of the Design Thinking emphatic approach and sprint execution with the 6 sigma scientific approach through analysis, prioritization and measurement for effectiveness (See Figure 4).

FIGURE 4
COMPARISON BETWEEN THE IDEO HUMAN CENTRIC DESIGN DIAGRAM, THE D.SCHOOL 5 PHASES OF DESIGN THINKING AND THE 6 SIGMA DMAIC



A New Relationship With Stone

The inclusion of technology is a recurring issue in the worktop processing industry. Every worktop, especially in the kitchen, must support diverse devices that manage washing, heating, cooling with different technologies (electricity, magnetic induction, gas, water) matching strong safety standards both on individual products and on their possible interaction. It is an overcrowded technical playground in which the stone worktop declines in relevance.

Thus we mapped the actions that take place in the kitchen like in the production line stations. We cleaned the area from the unnecessary and focused the attention on the essential user actions to design a simple and efficient process using Lean methodologies like Spaghetti Diagrams in production flow analysis (See Figure 5).

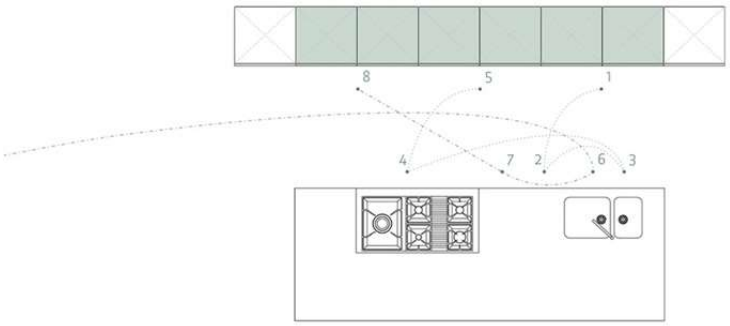
To enhance natural gestures in the kitchen we removed all unnecessary accessories creating a more direct relationship between the user and the worktop. To go deeper, we tried to understand if it was possible to cook, wash, prepare on the stone without accessories. So we disassembled induction cooking systems, faucets, scales, loaders, drawers, to understand how they worked and we redesigned them as integrated elements on the same worktop, testing and testing evolutions of devices gradually customized (a practice known as "reverse engineering" in the lean methodology).

We focused primarily on the three main phases of food preparation:

1. Stage one, the washing: thanks to I.O.T. sensor technology we coded the gestures that could control the flow of water and the opening of a hidden sink without touching any object when operating with hands in direct contact with food ingredients (See Figure 6);
2. Stage two, the fitting: we designed a new visual scale U.I. to integrate it into the worktop and make the stone itself capable of weighing for an effective preparation area (See Figure 7);
3. Stage three, the cooking: we studied many materials couplings in order to manage the thermal stress due to the cooking process to integrate an induction system in the stone worktop (See Figure 8);

This is how the modular system of integrated solutions was conceived, a line of innovative accessories for the stone worktop: the “Offmat Solutions”.

FIGURE 5
MAPPING THE USER ACTIONS IN THE KITCHEN. SPAGHETTI DIAGRAM AS A DESIGN TOOL



Processing to the Limit

Still today the company core business is the processing of stone worktops, with significant efficiency and quality. Furthermore, the company patented an invisible junction system that allowed to join slabs of stone without signs of evidence.

To express this know-how, we developed tense and angular geometric lines that would bring to the limit the firm stone processing capacity, creating a demo worktop that would remind a slab of natural stone of unprecedented dimensions. The plan was made using the new “impossible stones” (Vulcans) and integrated the responsive solutions that enhanced natural gestures, thus proposing a coherent synthesis of the whole innovation process. We called it "Tulér" as the old 19th-century tables from the Italian kitchen culture, used to make homemade egg pasta, equipped with marble top, integrated rolling pin, cutting boards and removable shelves.Tulèr was the first ever responsive kitchen.

FIGURE 6
RESPONSIVE SOLUTIONS ENHANCING NATURAL GESTURES, GESTURE CONTROLED SINK

FIGURE 7
RESPONSIVE SOLUTIONS ENHANCING NATURAL GESTURES, INTEGRATED SCALE

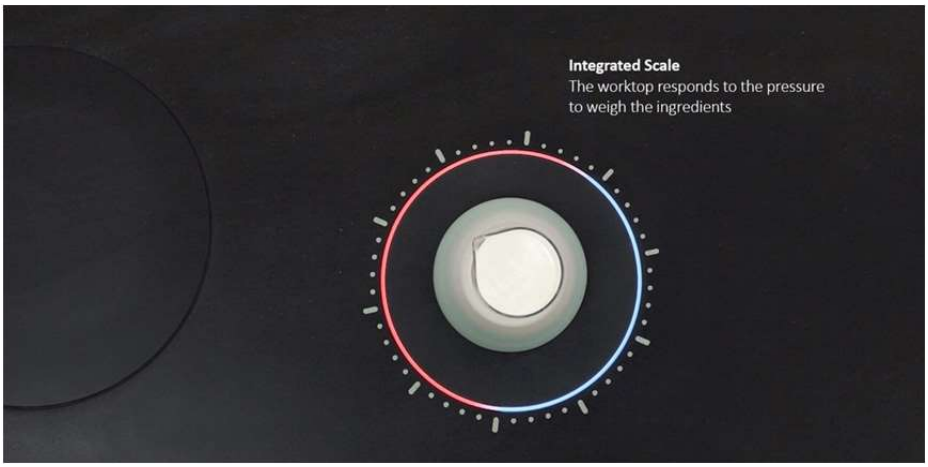


FIGURE 8
RESPONSIVE SOLUTIONS ENHANCING NATURAL GESTURES, INDUCTION COOKING

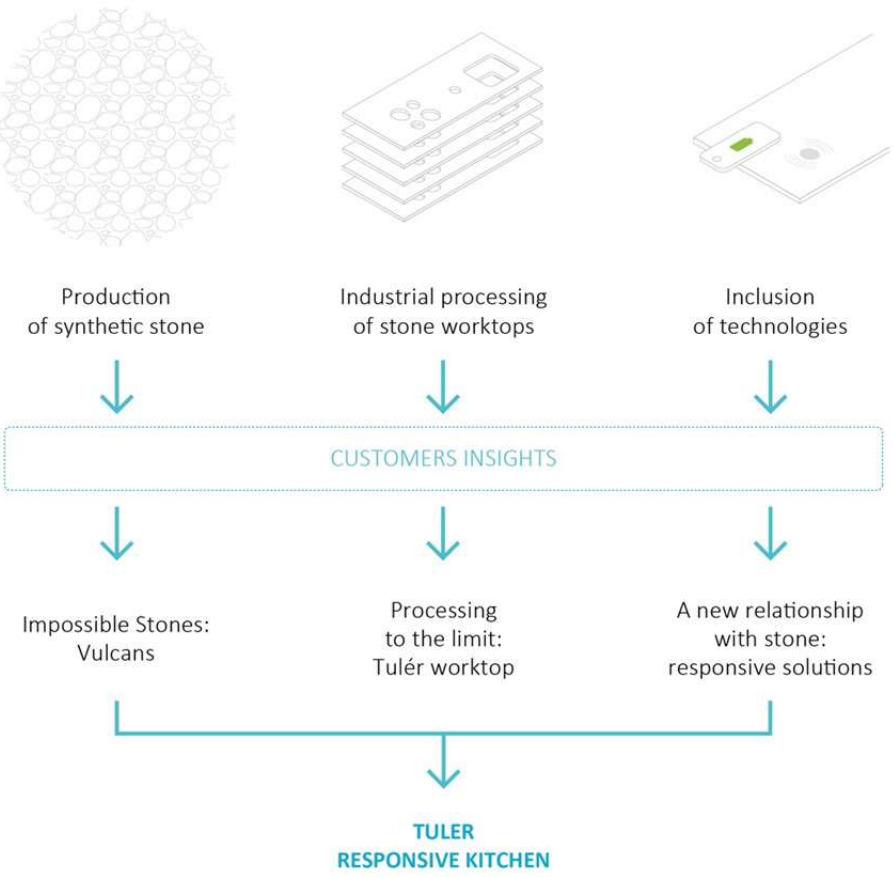
CONCLUSION: THE KEY LEARNINGS

The “Offmat project” met excellent feedback, but it was especially a contagious singularity. Not all the Offmat products have become standard products, but the company has recognized the value of the experimental process and the effectiveness of devoting pilot units to exploration and prototyping, to test ideas in a fast and effective process (See Figure 9).

The Firm has today launched a new reorganization of its company group of which Offmat has become a central element. Other companies in the field have started to present experiments in the direction of simplification of gestures and functions and are now exploring a growing integration between technologies and materials. The human-centric culture is pervading the industry.

On the other hand, the empirical approach based on the reiteration with increasing awareness, usual in workshops and formalized in the "ideation-prototyping-test" cycle of Design Thinking, has allowed us to find precious and faster "insights", even in strategic research, and to implement them in the short term.

FIGURE 9
FROM GROUP KNOW-HOW MACRO AREAS MAPPING TO OFFMAT INITIATIVES



Working between strategy, marketing, product and frequenting the production line has allowed us to identify similar patterns in methods coming from different disciplines, such as the Lean / Six Sigma Methodology, the Design Thinking, the Design Sprint and the Mapping of distinctive capabilities in Strategic studies. They are discrete tools that merge along the line of the project, notably in the face of complex issues that require multiple validations.

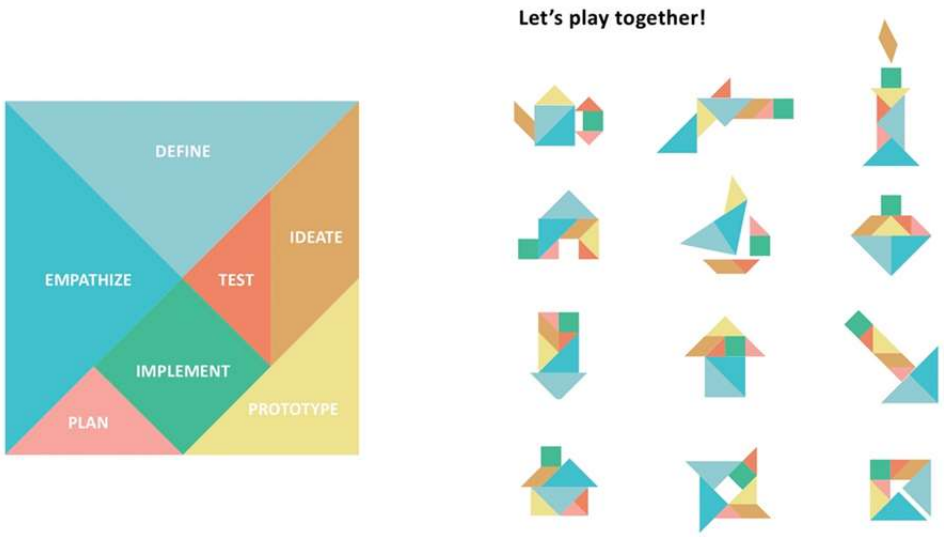
In such circumstances, our working group horizontal structure proved to be fundamental to allow the needed flexibility in face of the “fluid” challenges that occurred.

The Offmat team consisted of a mix of people internal and external to the company, with different levels of responsibility and different culture. This allowed to proceed quickly without losing focus, maintaining traction, enhancing resolutory debates. It is an example of how the ability to interact accelerates knowledge and the transfer of knowledge with relevant effects on the company's growth and innovativeness.

A Hybrid Methodology

We have called this modular approach "Thinkingram", from the matching of "Design thinking" with the "Tangram" game, where each piece represents a module of the process and the modules together, depending on their order, shape unlimited figures (See Figure 10).

FIGURE 10
THE THINKINGRAM DIAGRAM



In addition to the 5 phases of Design Thinking theorized by Stanford d.school we have identified two specific moments that allow us to design a complete framework of the consulting activity from research to market.

Plan

The first phase we added is "Plan". "Plan" is when the team designs a detailed proposal of future events, allocates resources and tasks and involves possible external supports and contributors. "Plan" turns the target of "Define" in a series of actions.

Implement

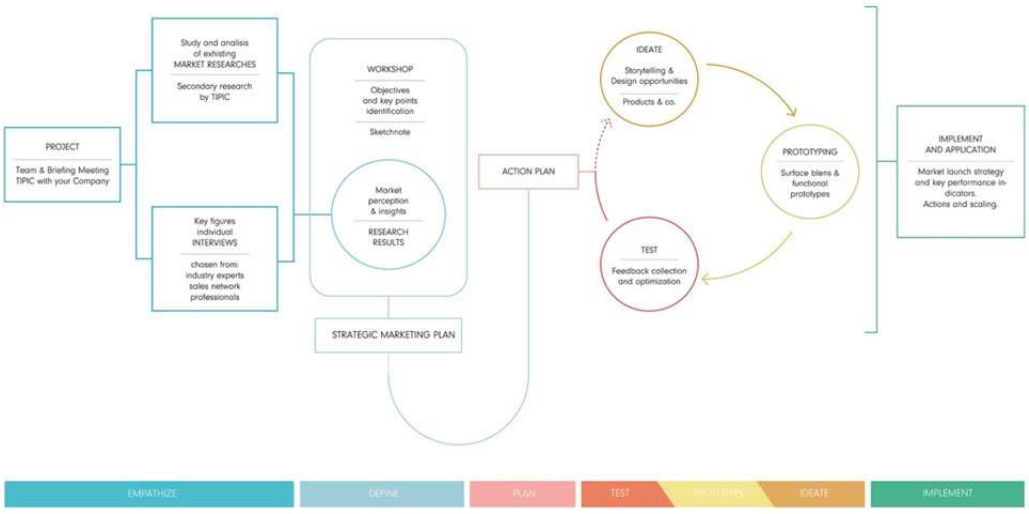
The second phase we added is "Implement". "Implement" scales the result of the "ideate-prototype-test" cycle, managing and monitoring the planned actions to integrate the product or the service in the company ecosystem or brings it to the market.

Thinkingram

The 7 resulting phases (Empathize, Define, Plan, Ideate, Prototype, Test, Implement) let us describe and organize the complete process from the beginning of research to the marketing plan implementation in a unique storyline that integrates strategy, marketing and design (See Figure 11).

The Thinkingram is our possible answer to the emerging need of integrating design thinking with strategy, marketing and efficiency methodologies in a common framework. The modularity of this approach emphasizes the single phases without losing the big-picture. It is a plus in complex projects in which multiple subjects are called to collaborate.

FIGURE 11
THE THINKINGRAM'S PHASES DIAGRAM



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