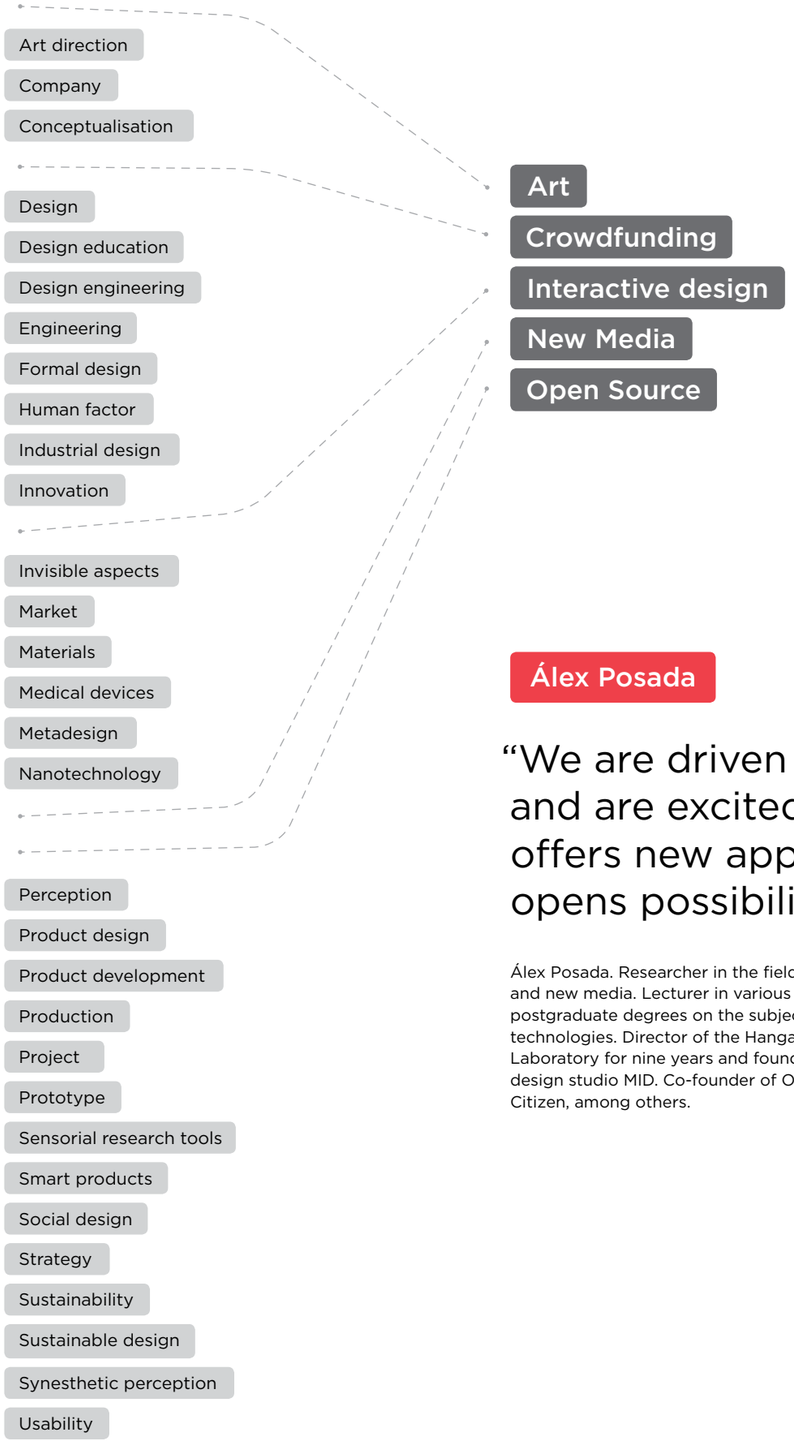


Álex Posada

“We are driven by creativity and are excited that our work offers new approaches and opens possibilities”

Álex Posada. Researcher in the field of interaction and new media. Lecturer in various masters and postgraduate degrees on the subject of interactive technologies. Director of the Hangar Interaction Laboratory for nine years and founder of the interactive design studio MID. Co-founder of Ovalsound and Smart Citizen, among others.

Interaction, design and new media

The real revolution of art and design is not happening with contents but with tools. From this standpoint, during my career I have worked on interaction design, new media and interactive technology consulting, always combined with a creative and intelligent approach to design and audiovisual system integration. My work focuses on artistic creation, technology and design. I propose and develop ideas and concepts that combine areas which are commonly separated such as audiovisual media, sound art, robotics, electronics and lighting design. In this article we highlight the different research fields of the studio with examples of outstanding projects in the area of interactive communication.

Introduction

Democratised access to new technologies and the rise of free software and hardware are enabling new digital artists, designers and creators to work in ways that were unthinkable ten years ago. If in the past one had to be an engineer to access advanced electronic tools, now anyone can set up a relatively complete application with a couple of weeks of training and a few hours spent on Google. The real revolution in art and design is not happening with contents but with tools. Open source platforms like Arduino, Processing, Pure Data and OpenFrameWorks are changing the way we work in the field of creation. And at the same time crowdfunding platforms such as Kickstarter, Indiegogo and Goteo are revolutionising the way we finance projects and collaborative work processes.

The MID studio (Media Interactive Design),[1] based in Barcelona, works with designers, engineers, artists, programmers, architects, scientists and musicians on the development and production of exhibition and museum projects, applications and interactive experiences, sensitive spaces, architecture, software, interactive products and new communication strategies applied to the cultural industry.

MID specialities are interaction design, new media and interactive technology consulting, always combined with a creative and intelligent approach to interaction design and audiovisual system integration.

MID traces its origins to the Hanger artistic production centre[2] in Barcelona, common meeting place for creative professionals, artists, programmers and designers. Under the direction of Alex Posada, the MID team emerged after

1. http://mediainteractivedesign.com
2. http://hangar.org

successive collaborations driven by growing social demand and interest in interactive technologies. The studio began operations at the state level and soon after began to develop projects in Europe. At present, the studio also works regularly for customers in Latin America.

In recent years, MID has shown its work at international festivals and exhibitions such as Ars Electronica, Kinetica Art Fair, Mapping Festival, Sonar Festival, Kernel Festival and Art Rock Festival, as well as art centres including the Phaeno Science Museum and the Picasso Museum of Barcelona. The studio also works for communication agencies in marketing projects for clients such as Nike, Kraft and Eristoff.

Colour, light and sound in motion

The latest digital technologies enable projects intersecting artistic creation, technology and design, through the development of ideas and concepts that work in audiovisual, sound art, robotics, electronics and lighting design. The results of these research processes are embodied in prototypes and work which in some cases have been developed and presented in different art exhibitions. "The Particle" is one such piece. It has won widespread international recognition and has been exhibited in international festivals such as Ars Electrónica.

"The Particle"[3] is a kinetic sculpture that experiments with colour, sound and movement. Its continuous rotation, speed and lighting create visual effects that define the spatial structure of the object and give it volume. The object is a space for sensory and kinaesthetic experience, a body with its own internal resonance. It stands as an example of physical generative art. Everything we can see and hear is the result of a complex system that generates real-time information. The processes are similar to those used in visual generative art, where forms are born, grow and die giving way to new ones. "The Particle" works the same way but as a kinetic structure that creates four concentric coloured spheres from four pixels of information. The resulting work explores the possibilities of a technology that, despite being visually limited, can generate three-dimensional shapes. The structure comprises a central shaft rotating several times per second, turning four concentric rings of LEDs 30, 60, 90 and 120 cm in diameter. Visual processes are perfectly synchronised with surround sound, resulting in an immersive, synaesthetic and in many cases hypnotic experience. Light and sound are orchestrated through the software that controls all the outputs. An audiovisual synthesizer specially created for this piece generates light and sound events. There is therefore a perfect synchronicity between the audio and image because the origin for both is in the sequences and mathematical functions generated by the initial parameters.

Following this project MID continued to create projects that explore the relationship between generative processes using sound and light technology as a common element. Since 2012, MID collaborates on artistic projects with the "Playmodes"[4] creative studio. Based on this collaboration, all subsequent projects

▲ "The Particle". 2009. © Media Interactive Design.

3. The Particle. 2009. Media Interactive Design. See: http://mediainteractivedesign.com/la-particula/

4. http://playmodes.com

▲ "Blaus". 2009. © Media Interactive Design.

were branded "PlayMID", the union of both studios that collaborate and share resources to create works of great beauty and strong artistic content.

Some major works by PlayMID are "Blaus", developed for the Girona Video and Digital Arts Festival (VAD) and awarded an honourable mention in interactive art by the Ars Electrónica festival in 2013. Blaus is an immersive installation that investigates the relationship between light and architecture, creating a resonant space that functions as an amplified musical instrument.[5]

Another example of the use of these technologies is the "Radial" project[6] and the "Phi"[7] project, two separate audiovisual shows presented at different festivals of the city of Barcelona.

The "Suspes" show uses a three-dimensional screen and a musical composition. It consists of the deployment of an array of one hundred 60 cm helium balloons at heights between 20 and 40 meters. The balloons feature a LED inside and a control system that allows individually controlling each of them by turning them off and on and synchronising the show with music thanks to a pixel mapping process, thus simulating the appearance of stars and constellations that pulsate in an expansive aerial choreography.[8]

"Porta Estel·lar" is one of the last PlayMID creations, custom-developed for the Barcelona Institute of Culture. The project developed during the summer of

5. Blaus, 2012. PlayMID. Available at: https://www.youtube.com/watch?v=A4BrC-2xjcA

6. Radial, 2012. PlayMID. Available at: https://vimeo.com/60887882

7. Phi, 2014. PlayMID. Available at: https://vimeo.com/110722242

8. Suspès, 2015. PlayMID. Available at: https://www.youtube.com/watch?v=6ZAeBwYav5s

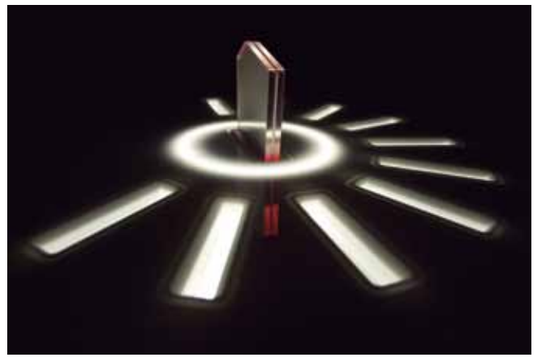
▲ "Porta Estel·lar". 2015. © PlayMID.

2015 is an immersive sound and light installation within a rebuilt airplane converted into an art gallery. The installation invites the audience to experience simulated space travel. Through the creation of visual and sound sequences that give visitors the feeling of interstellar travel, the audience is transported to outer space in an intense six-minute audiovisual passage created from 20,000 LED pixels distributed throughout the space.[9]

▲ "Suspès". 2015. © PlayMID.

Design and space

Another key focus area for MID is the design of exhibitions employing new technologies and, in particular, interactive systems geared toward content and visitor experience. "1936, Huellas de una Exposición" is an exhibit by the Picasso Museum in Barcelona that evokes a historical exhibition made by Picasso for the Sala Esteva in Barcelona in 1936. For this project, MID designed and implemented four exhibition areas that use different interfaces and interaction techniques applied to the interpretation, visualisation and structuring of historical documentation, graphic material and audio recordings. The exhibition area called "Ontology" featured hands-on data display tables, and the "Speech File" area showcased contextual relationships between historical documents by digital mapping and physical interaction techniques.[10]



▲ "1936, huellas de una exposición". Museo Picasso 2011. © Media Interactive Design.

▲ "Sueños de un grifo". Roca Gallery. 2011. © Media Interactive Design.

Physical interaction is also leveraged in the "Sueños de un Grifo" exhibition. This exhibition presents more than forty objects that reflect the re-

9. Porta Estel·lar, 2015. PlayMID. Available at: https://www.youtube.com/watch?v=k37WtFVfDfs

10. "1936, huellas de una exposicion", Museo Picasso. 2011. Media Interactive Design. Available at: https://vimeo.com/52569264

lationship between humans and water. The exhibition is divided into three areas (called Re-interpret, Facilitate and Evolve) which in turn represent three different interaction modes. In all of them, the tap plays the role of conceptual object while functioning as a sensor that activates and modifies the exhibition contents.[11]

11. "Sueños de un grifo", Roca Gallery Barcelona. 2011. Media Interactive Design. Available at: https://vimeo.com/52589335

From idea to product

If the user experience and narrative are hallmarks for developing museum and exhibition projects, MID's interactive product design is driven by prototyping techniques and the ability to forge a particular creative construct. Besides working on its own products, the studio develops projects for third parties. This is the case of the Chicks on Speed performing group, for which the studio developed the E-shoe, a guitar-heel shoe that triggers sounds wirelessly. The E-shoe is the result of a collaboration with shoe designer Max Kibardin and the Hangar Interaction Laboratory. The uniqueness of this design was captured in 2011 in the lens of renowned photographer Mario Testino in a photo session in which model Kate Moss wore a pair of E-shoes.

One of the problems the studio has encountered in recent years, which at the same time is widespread and affects many designers and creators, is how to finance an idea to turn a prototype into a viable and marketable product when you have no resources to do so. This is where "crowdfunding" comes in as a serious and real alternative to classic funding from loans or private investment. This model does not aim to replace private funding but it does become a good initial choice that will also help us submit our design to a good market test prior to the production phase, where it would be too late to correct failures or implement further improvements required by the potential user.

▲ "E-shoe". Chicks On Speed. 2010. © Chicks On Speed.

Crowdfunding and collaborative design

Crowdfunding, collaborative finance or micro-patronage, is the practice of funding a project or venture by raising monetary contributions from a large number of people. It is used for many industrial or creative activities, political campaigns, business creation, and also for social and cultural projects. As a concept, it has originated in the English-speaking world and is growing fast in Spain, raising high (often excessive) expectations. These new forms of funding point clearly to the fact that the crisis in the social and cultural sector is not only economic but also involving models that no longer work, and the need for new models which we still find it hard to adopt.

Today there are many crowdfunding platforms worldwide, many of them focused on specific types of projects. The most important are Kickstarter,[12] one of the pioneers, and Indiegogo,[13] which emerged very strongly a few years later. These platforms are best suited especially for projects especially more focused on product, but there is place also for cultural projects of all kinds.

12. Kickstarter. http://kickstarter.com
13. Indiegogo. http://indiegogo.com

In Spain we have several platforms. The best-known are Verkami[14] and Goteo.[15] The latter is focused on social, collaborative and open-source projects, undoubtedly one of the most interesting and innovative projects out there.

MID continues relying on crowdfunding to help finance the design and development of various products. Some of these projects are shown below. Almost all of them are currently still in development and production stage.

14. Verkami. http://verkami.com
15. Goteo. http://goteo.com

Smart Citizen, open data and citizen networks

A particularly noteworthy project given its social character is the Smart Citizen Kit (SCK) developed in collaboration with Fab Lab Barcelona and the Goteo.org crowdfunding platform.

The Smart Citizen Kit provides a system of low-cost environmental sensors in a single product. The aim is to allow citizens to monitor environmental parameters such as temperature, humidity, gas levels or sound pressure within their local environment and share them with the world. The Smart Citizen platform is designed to generate participatory processes in the urban environment by connecting data, users and knowledge. The aim is to create open indicators and distributed tools under the concept of collective city construction by its inhabitants. Smart Citizen is based on Internet geolocation and free hardware and software for data collection. This project is in the initial implementation phase in Barcelona, and several research projects are currently under way in different European countries.

▲ "Smart Citizen Kit". IAAC Barcelona. 2012. © Media Interactive Design.

Bhoreal, open source musical interface

Bhoreal is a product geared more towards artists and music creators. It is an open-source interface that allows controlling remote devices via a touch-screen array reconfigurable by the user. It is an open-source interface based on the Arduino platform to control all kinds of software and hardware through a surface featuring backlit RGB LED buttons. It can be used as an OSC/MIDI device to shoot live samples, as a sequencer, synthesizer, drum machine, tone map generator or remote control. It can also work in standalone mode as an algorithmic and generative controller, mathematical simulator, game interface or low-resolution LED display. The Bhoreal controller does away with the limitations imposed by manufacturers of conventional devices. It is Open Source so it can be modified and adapted freely.

▲ "Bhoreal Mini". Barcelona. 2013. © Media Interactive Design.

Oval, the first digital handpan, a Kickstarter success story

Oval is an electronic musical instrument that connects to a smartphone or tablet app or can function as a music controller for the computer. Oval gives total freedom for creating sounds and is a tool geared toward learning and musical performance.

Oval was launched as a crowdfunding campaign by the company Ovalsound on Kickstarter in mid-2015. It is a benchmark project internationally and a success story for Spain. Subsequently, it has established itself as a technology-based startup focusing primarily on developing music technology.

The project was born from the need of one of its members, who wanted to find a way to simplify his musical performances. He used various chromatic percussion instruments which very heavy and difficult to transport. Oval is inspired by the HandPan, a musical instrument created in Switzerland in 2000, adopting the handpan's design, ergonomics and musical qualities. The ensuing electronic instrument is simple enough for a beginner to start exploring music as a means of expression, and yet as complex as a professional musician wants it, because it allows you to change sounds and scales, make layers of samples, real-time looping and taking wherever your imagination takes you. The external housing is made of Corian®, composed of natural materials—such as ores bauxite, marble and quartz—natural resins and acrylic material. Ovalsound was founded in 2014 in Barcelona by Ravid Goldschmidt and Alex Posada.[16]

"Recently we have witnessed a real surge of creative tools that allow us to do things that just few years ago seemed unattainable"

▼► "Oval". Barcelona. 2016. © Ovalsound SL

And now what...?

The next few years will certainly be exciting. Many surprises are in store in terms of collective creation and participatory processes. The question is whether we will be prepared for it, how to prevent the large amount of information we are exposed to every day from conditioning us, and keeping isolated from the excessive external stimuli to which we are subjected in order to perform. One of the cornerstones of collective creation is just that—constant feedback between various creators. But where is the limit of this process? The pursuit of perfection has always existed but the key is finding the balance between an acceptable quality and a "time to market" as short as possible. We live in a society where mass consumerism is ubiquitous. The gap between conception of an idea to product design and subsequent mass industrialisation must be shorter and shorter if we want to retain any innovation and market competitiveness. Open creation tools with large communities within reach and co-financing and co-creation platforms help us greatly to make this possible.

As a digital creator I think that we must learn to use technology to do things that we are passionate about, things that are really useful and bring innovation to the society in which we live. Very often technological tools are used very superficially. Technology itself can fascinate us so much that we create things without a soul, without a clear idea or concept. These things become worthless, since there is no in-depth analysis or research work. This is a widespread problem among many "artists" or technologists who develop products, software, video games, installations or general works using technology. To avoid this scenario, multidisciplinary collaboration in teams makes more and more sense, where the artistic technological, scientific and even human spheres can coexist perfectly.

16. Oval. OVALSOUND. Available at: https://www.youtube.com/watch?v=bvhEpz_syjM