

**Mutabilidad en las tecnologías comunicativas:  
El proyecto cyad.tv y la adopción de las tecnologías  
streaming de producción y transmisión audiovisual**

***Mutability in communicative technologies:  
The cyad.tv project and the adoption of streaming technologies for  
audiovisual production and transmission***

***Mutabilidade nas tecnologias comunicativas:  
O projeto cyad.tv e a adoção de tecnologias de transmissão para produção  
e transmissão audiovisual***

**Jorge Gabriel Ortiz Leroux**

División de Ciencias y Artes para el Diseño, UAM Azcapotzalco, México  
[coso966@yahoo.com.mx](mailto:coso966@yahoo.com.mx)

**Iván Torres Ochoa**

División de Ciencias y Artes para el Diseño, UAM Azcapotzalco, México  
[dcg.ito@gmail.com](mailto:dcg.ito@gmail.com)

**Adriana Dávila Ulloa**

División de Ciencias y Artes para el Diseño, UAM Azcapotzalco, México  
[adu09\\_@gmail.com](mailto:adu09_@gmail.com)

## Resumen

El presente artículo aborda las tecnologías de transmisión de contenidos audiovisuales (*streaming*) a través de sus modalidades “en vivo” y en forma diferida como parte del desarrollo y la reconfiguración persistente de las tecnologías de información y comunicación, en particular el conglomerado complejo de las tecnologías digitales que se entrelaza con las tecnologías analógicas de comunicación a través de las llamadas tecnologías *streaming*. A partir del reconocimiento de los rasgos y las características formales y significativas de estas redes y plataformas, el artículo se enfoca en el proyecto *cyad.tv*, desarrollado desde 2013 en la UAM Azcapotzalco como prototipo y experiencia para la construcción de un canal universitario de producción y transmisión de contenidos audiovisuales enfocados hacia la difusión de la investigación y promoción cultural.

El proyecto *cyad.tv* se problematiza en función de los retos claves que enfrenta: la dinámica interna de los procesos tecnológicos y significativos que lo componen; la generación de públicos internos y externos al ámbito universitario en que se desenvuelve; la multiplicación de contenidos como base para el futuro de un canal de divulgación y difusión universitaria. En la Introducción, se aborda el estado actual de las transmisiones *streaming* a nivel global dentro del contexto del acelerado crecimiento y la transformación de las redes. Asimismo, se explora la metodología constructiva en la que se basa el proyecto *cyad.tv*. El segundo apartado aborda los dilemas de las transmisiones *en vivo* o tiempo real, así como la potencialidad de este medio emergente de comunicación. El tercer apartado muestra el proyecto *cyad.tv*, su dinámica de trabajo y sus alcances. El cuarto apartado ejemplifica sus resultados en términos del diseño de imagen de canal y de difusión de sus contenidos. El último apartado explora las conclusiones y retos futuros del proyecto.

**Palabras clave:** *streaming*, televisión universitaria, comunicación, interactividad, audiovisual.

## Abstract

The present article explores the technologies of transmission of audiovisual contents (streaming or videostreaming) through its modalities “live” and “not live”, as part of the development and persistent reconfiguration of information and communication technologies, in particular the complex conglomerate of Digital technologies that interacts with analog communication technologies. The article focuses on the *cyad.tv* project, developed at Autonomous Metropolitan University Azcapotzalco as a prototype and experience for the construction of a university channel for the production and transmission of Audiovisual content, concentrated on the dissemination of research and cultural promotion. The *cyad.tv* project is problematized in terms of the key challenges it faces: the internal dynamics of the technological and significant processes that make it up; the generation of internal and external audiences to the university environment in which it operates; the multiplication of contents as a basis for the future of this channel of dissemination and university diffusion.

The article addresses in the Introduction the current state of streaming transmissions at a global level within the context of accelerated growth and transformation of networks. It also explores the constructive methodology on which the *cyad.tv* project is based. The second section addresses the dilemmas of live or real-time transmissions, as well as the potential of this emerging Media. The third section shows the *cyad.tv* project, its dynamics of work and its scope. The fourth section exemplifies its results in terms of channel image design and dissemination of its contents. The last section explores the conclusions and challenges of the project.

**Keywords:** streaming, university television, communication, interactivity, audiovisual.

## Resumo

O presente artigo trata das tecnologias de transmissão de conteúdo audiovisual (transmissão) através de suas modalidades "ao vivo" e em uma forma diferida como parte do desenvolvimento e a persistente reconfiguração das tecnologias da informação e da comunicação, em particular o conglomerado complexo da tecnologias digitais interligadas com tecnologias de comunicação analógicas através das chamadas tecnologias de transmissão. O artigo se concentra no projeto cyad.tv, desenvolvido desde 2013 na UAM Azcapotzalco como um protótipo e experiência para a construção de um canal de produção universitário e a transmissão de conteúdos audiovisuais voltados para a divulgação da pesquisa e promoção cultural.

O projeto cyad.tv é problematizado em termos dos principais desafios que enfrenta: a dinâmica interna dos processos tecnológicos e significativos que o compõem; a geração de públicos internos e externos ao ambiente universitário em que atua; a multiplicação de conteúdos como base para o futuro de um canal de divulgação e difusão universitária. A Introdução aborda o estado atual das transmissões de transmissão a nível global no contexto do crescimento acelerado e da transformação das redes. Ele também explora a metodologia construtiva em que o projeto cyad.tv se baseia. A segunda seção aborda os dilemas das transmissões ao vivo ou em tempo real, bem como o potencial desse meio emergente de comunicação. A terceira seção mostra o projeto cyad.tv, sua dinâmica de trabalho e seu escopo. A quarta seção exemplifica seus resultados em termos de design de imagem do canal e disseminação de seus conteúdos. A última seção explora as conclusões e os desafios futuros do projeto.

**Palavras-chave:** transmissão, televisão universitária, comunicação, interatividade, audiovisual.

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## 1. Introduction

### The proliferation of significant productions in

Our country is one of the 12 nations with the largest number of netizens worldwide, totaling more than 70 million people connected until 2016, according to a recent study by the Mexican Internet Association.<sup>1</sup> In this context, it is important to recognize and problematize the public effects of these increases, in particular the way in which platforms are created and constructed focused on the creation of audiovisual contents, as well as the process of construction and validation of codes and work tools that allow to establish interactions between the publics attending said contents.

One of these forms of interaction is the one developed by technologies and the languages streaming. The *cyad.tv* project,<sup>2</sup> emanated from the Design Semiotics Area of the CyAD Division of the UAM Azcapotzalco, it has been considered from the outset to recognize and put into practice these new communication technologies, including their potential to intervene in contemporary computer processes. In this sense, the purpose of this article is to problematize this project-platform within the context in which it is inscribed, in the light of current dilemmas and challenges of the networked audiovisual media, and of its generic

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De acuerdo con dicho estudio, cada año se incrementa en más de 5% el acceso social a los servicios de Internet, mientras que el tiempo de consumo diario sobrepasa las ocho horas por persona. Ver: <https://www.publimetro.com.mx/mx/pais/2017/05/18/mexico-ya-70-millones-usuarios-internet.html>

<sup>2</sup> El proyecto *cyad.tv* tiene como origen la organización del “Seminario-Taller Videostreaming y Medios Internet” impartido en 2007 por el colectivo DOGONeff de Barcelona a través de una invitación del Área de Semiótica del Diseño de la UAM Azcapotzalco. En dicho curso-taller se trabajó con la experimentación del medio a través de la conformación de equipos colaborativos interdisciplinarios en la producción de contenidos documentales, artísticos y didácticos, haciendo uso de la potencialidad comunicativa de las tecnologías *streaming*, así como sus alcances y limitaciones a la luz de los cambios acelerados que desde entonces caracterizan a los soportes computacionales y en red. Para revisar la experiencia de dicho colectivo, ver: <http://www.dogoneff.org/>

becoming as technology positioned in Internet under a constant process of development and transformation.

Streaming technologies and languages condense various characteristics of the transition between analog media and digital media. The streaming language accumulates and expands the quality of audiovisual transmission in real time, that is to say, the live or live transmissions initiated by radio and television, enhancing the "human-machine interactivity" by means of numerous and enriched tools, whose effect is that described by Umberto Eco as the man-machine-man relationship: "a man not freed from the machine, but free from the machine" (Eco, 1984). Internet networks currently accumulate some communicative practices such as chat, bloggear and broadcast (broadcasting), which come in turn from telephony and mail, that is, analog mass communication technologies. Today, these media and technologies have expanded rapidly and explosively, functioning in a synthetic way under modes of perception that are both collective and individualized that recover and transform traditional communicative schemes.<sup>3</sup> As Manuel Castells says, in the networks individuality works socially; just as socialization has been individualized through the pre-eminence of the self present on the social scale. "Individuals build their networks, online and offline, on the basis of their interests, affinities and projects" (Castells, 2003, p 172).

Technologically speaking, streaming is defined as:

The distribution of audio or video over the Internet. The word streaming refers to a continuous stream (without interruption), which the user can access by listening to or viewing audiovisual content at any time. This type of technology allows to store in a buffer what is being heard or heard (<http://en.wikipedia.org/wiki/Streaming>).

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<sup>3</sup> La exploración sobre las tecnologías *streaming* en este artículo tiene como referencia una serie de aproximaciones emanadas del trabajo doctoral propio titulado "Las redes sociales interactivas: tecnologías streaming y urbanización virtual", presentado en el programa doctoral de Diseño y Estudios Urbanos, CyAD-UAM Azcapotzalco (Ortiz Leroux, 2013).

Technologies and streaming codes have been able to expand and spread their access and exit to a vast interconnected world population, gathering in a short time millions of users. As streaming technology has advanced, the uses and forms of audiovisual production have been modified and updated, diversifying content, quantity and types of production, through a set of interrelated devices and purposes.

The behavior of one of the most prominent platforms in this respect (YouTube) shows the transformations that have taken place in its interior, from the updating and permanent relay of its coding systems (flv-mov- html5), to the reformulation and rearrangement of its contents musical-tutorial-social). The movement generated by the streaming environments works in a similar way to the merchandise, segmented and hierarchical based on generic and thematic options, qualities and services added, as well as free and restricted access or payment. If in the beginning the social sites of videostreaming offered free and free access to all the transmissions, with the multiplication of consumers and producers of audiovisual contents, little by little accesses began to diversify and to be offered with fluctuating costs and opportunities. This happened clearly with the streaming transmissions that replicate contents of regional and global channels of cable, offered by agents and users that distribute popularized events from their accounts, as they are usually in massive form the sporting events or the commercial series (it is enough to see the proliferation of cable channels facing the persistence of free or open television).<sup>4</sup>

In these cases, both the use and the market have been those that are shaping the development of the medium, while the supply and demand establish a set of tensions that outlines the character of the streaming audiovisual industry. For example, the Hulu.com and Veoh.com sites are aimed at audiences who demand free access to television shows and commercial programs, becoming virtually an extension of television to the Internet, while

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<sup>4</sup> Según datos de *El Economista*, en nuestro país el 80% de la población utiliza la televisión abierta como medio de entretenimiento, mientras que el 29% cuenta con canales de paga o bajo demanda. De los canales de televisión abierta, la población ve el Canal de las Estrellas, con 66% de preferencia, seguido de Azteca 13 con 45% de preferencia. De los canales de paga, los más vistos son Fox, seguido de TNT, Discovery Chanel y Fox Sports.

<http://eleconomista.com.mx/industrias/2016/08/11/9-datos-sobre-consumo-tv-mexico>

sites such as Vimeo. com are directed to the market of professionals and artists of audiovisual production, with a high quality and resolution in the files deposited and, for its part, Metacafé.com is intended for the public who wishes to make money by uploading their own material to win the public and adepts

The Internet viewer has transformed the so-called passive-receptive character of the viewer into a more active or productive participation of textual, visual and audible contents. The modalities of the live and delayed presence of the streaming make it a support with strong possibilities of development. Its qualities as a reservoir of digital memory and as a means of telematic transmission are only its starting point. In this measure the extension of new resources in the streaming will have to develop in correlation with the intensification of its contents. The predominance of the real, present and simultaneous instant of live streaming, which currently defines the supremacy of the overcoded present and the contemporary excess of the image, as Paul Virilio puts it, will have to conflict with itself: "Real-time interface replaces definitively to the interval that not long ago had constructed and organized the history and the geography of our societies, culminating a true culture of the paradox "(Virilio, 1997, p.33). From excess to emptiness there is only one step, which is that of its limits to respond to reality, both in its physical form and in its imaginary and virtual effects.

In this sense, the present article approaches the space generated by the flow of the live image through streaming transmissions as a complex environment, which socially can be understood as an anthropological and philosophical space, where the Virtual is constructed as a tension between (Levy, 1999, pp. 17-24) and, at the same time, as an intensive space, as described by Marías and Colquhoun (2008), who allude to the work of Deleuze and Guattari and their rhizomatic perspective as a background of the network environments: "Substantially, we consider that the rhizome is the perfect description of the World Wide Web, while the Spatium Intensive refers to the experience and intensity of that experience, contributing a positive character of depth in the determination of ideal connections and differential relations "(De Marías, 2008, p.9). For these media in constant development, the

user experience becomes fundamental in this sense, because as it intensifies, the permanence of models or modalities of content will tend to conform a distinctive language and, at the same time, its renewal.

The methodology of the UAM Design Process Model (S. De Antuñano, 1992) allows us to recognize the theme that is here problematized, since it places the Project in the center of the investigation, in which the Case and the Problem are condensed which are inter- and intradisciplinary, respectively), as well as the Design Hypothesis, which in this case corresponds to the prototype routed through cyad.tv from its beginnings as an ICI (Research and Intermediate Creation) project in 2009. Given the methodology as a constructive process, it is equally pertinent to recognize the process of building a project such as the one addressed here from the so-called virtual ethnography (Hine, 2004), which observes the Internet as a cultural artifact that entails different accesses and uses, where the researcher performs an interstitial, fluid, approximate, adaptive and critical work, as described in the principles of this virtual ethnography (Hine, 2004, pp. 80- 83).

The results of the cyad.tv project, with more than 150 live events, seminars and forums, highlight the digital media as a valid alternative for the extension of teaching and research at university and extra-university level. As long as live broadcasting tools continue to be developed, such as the use of chat, blogs, and social networks associated with outreach channels, as well as broadcast reach recognition resources (such as statistics of visits and places local and global connection), the results of the broadcasting of streaming transmissions will be more optimal and relevant. In this sense, it is fundamental to recognize university dissemination as an integral communication strategy and linking in and out of the university.

## **2. Communication dilemmas and real-time feedback**

Computers and networks have changed the way they produce and distribute video and audio content. Streaming has a dual mode: "live" reception (produced live), and the reception of audio and video "on demand". Both emerge, to a large extent, as a response to the fading of symbolic power and the influence of live and direct contact between sender and viewer configured under the television medium. Streaming technologies have traveled through a variety of cumulative genres, from the epistolary genre, the telephone, radio, television, video and film. Streaming media have become a conduit of generalized attitudes and purposes, based on producing and consuming audiovisual content that has multiplied the emergence of new themes and treatments, a significant network of technical resources, as well as unique ways of telling and showing things , events and situations.

Diversification of the uses of the medium has been possible after its implicit "democratization", resulting from its global extension in a relatively short period by the integration of enriched tools (blog, chat, live transmissions, social networks) that adapt to the demands of a user-audience that replicates and intensifies their participation and "demands" new forms of interaction, participation and creation. This environment, which simultaneously demands and fosters new interactions, is driven by strategies that allow language to evolve and adapt to the changing conditions of networks and to access more fluently the global public. Below we list a series of dilemmas on which we can problematize the context in which the streaming productions take place.

1. The values of the "Internet culture" are developed under the principles of instantaneity, transparency and artificial environments (De Kerckhove, 1999, pp. 210-219), forming a "skin of culture" based on the favorable technological conditions and the individual and collective motivations that animate them from their structure and modes of operation. The character of the interactive networks makes them work under virtual, informal and fluctuating models, which allow the actors to be aware of their own doing, as well as the scope and limitations of the environment.

2. The activities and procedures of production and distribution are given under a global recognition and exchange of production tools, as well as of the phases and processes involved. The division of labor implies that the functions and modalities of production (for example, taking a camera, directing its frames or designing the stage set), generate a distribution of creative plurality and the proliferation of formal and aesthetic approaches in the field of the informative, the visual and communicative.

3. Activity interaction strategies focus in particular on the construction and generation of audiences, based on the creation of dissemination mechanisms and the design of an own image, consistent with its purposes and scope. This synchronous creation of an interactive space and an image of its own and coherent with that environment (channel identity, program, identity of actors or agents), causes an appropriation of the work from the various creative folds that it offers.

In this sense, the paradox of streaming is that of an anonymity transgressed by the user exposed to the public, who verifies the instantaneity and immediacy of his world intermediated by the machine and at the same time separated from its interlocutors. In this sense, the intensity of access and streaming production is experienced as a form of collectivized isolation. It can be with thousands and thousands, but the complete experience is still isolated and individualized. That is to say, it is lived, on the one hand, under the personalized television modality, but also, on the other, under a collective environment fragmented in space and simultaneously integrated and massified in the virtual transmission, which is a characteristic feature of the television medium itself. "The era of television brought an era of individualism unsupportive, selfish, uncritical, aboriginal, at the mercy of manipulation and the whims of power" (Cotarelo, 2011, p. 249).

Streaming broadcasts appear largely as a response to the fading of live and live contact between broadcaster and viewer offered by television. The reduction of distances of the streaming phenomenon is caused by forms of approach and placement in front of the medium characterized by instantaneity, immediacy, transience. The approach to the "near",

to the present and to the verisimilitude in the streaming takes place in peculiar forms: in the realm of the individual real and intimate events of the daily life proliferate and extraordinary personal events circulate, hardly credited to be exposed openly By television; autobiographical expressions and personal intimate tastes have also had an unprecedented boom, perhaps as a result of cultural hybridization and subcultural proliferation at every scale.

The extensive (technological) possibilities of the medium streaming have given rise to millions of actors, fragmented, differentiated and participative, not only are "television" consumers but also, and mainly, network producers. "The technological convergence of media, media and services and the generalization of social networks provoke a physical and symbolic rearrangement of all practices and areas of consumption of electronic, print and digital media" (Winocur, 2015, p.70) . The same can be said of streaming media: what before could add a few "creators", now integrates millions, making it a popular medium, home, amateur (which does not exclude their modalities and professional qualities, increasingly present ), which translates into a showcase for the public's thoughts, perceptions, feelings and moods, as it had been able to consolidate television in its moments of development, transit and crisis since the second half of the twentieth century.

In other words, the streaming medium has become a conduit of widespread attitudes and purposes: consuming and producing audiovisual content that, beyond the unilateralism of television, give rise to the emergence of different themes and treatments, as well as various technical resources, ways of narrating and showing things. In this sense, the streaming transmissions place us in the sociality of the medium, as well as in the way in which this is inserted in the technological advances. Manuel Castells performs this exercise by recognizing in interactive networks the emergence of "a new culture: the culture of real virtuality" (Castells, 2006, p.362). If the McLahanian galaxy had already put the importance of the Media in the center of the debate (the medium is the message), Castells updates the discussion by arguing that under the Internet the message is the medium, thus affirming that the characteristics of the message address the characteristics medium. Chains

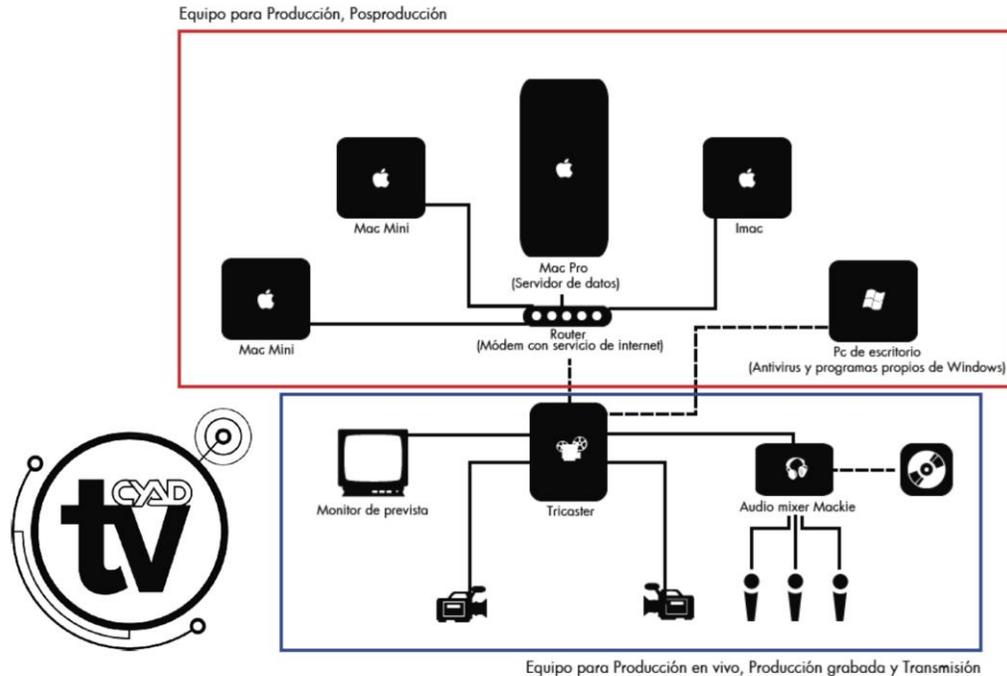
and channels are constructed according to the specificities of consumers, the way of constructing messages towards them, "shaping different media for different messages" (Castells, 2006, p.373). The difference between the galaxy MacLuhan and the information age of Castells is that communication no longer circulates in a single sense, allowing audiences to speak with their own voice, multiple, but also uncertain and improbable.

### **3. The cyad.tv project as a university channel prototype**

The methodology proposed here is of the constructive and iterative order, which involves addressing the problem of interactive networks in the light of the practices and experiences generated in cyad.tv, which involve both technological, social and cultural problems. To say, they join the accelerated transformations in the techniques, tools and technologies (software and hardware), with the agents and subjects that intervene in their access and use. Based on this, we take into account both the infrastructure of the project (physical and human resources), products generated on its own platform (video files produced), as well as statistical information from the servers used in the cyad.tv website

The site cyad.tv aims to transmit audiovisual content that favors the dissemination of research and dissemination projects of the Azcapotzalco Unit of the UAM. The cyad.tv live transmission platform includes an infrastructure that is composed of physical technological resources of transmission (Fig. 1), human resources (Fig. 2) and a web presence site (Fig. 3), which in coordination with those who hold academic events, enables cyad.tv to establish itself as a channel to disseminate topics relevant to design and the arts, social sciences and humanities, as well as basic sciences and engineering, from the three divisions of the UAM Azcapotzalco.

**Figure 1.** Recursos tecnológicos y físicos de transmisión.



Elaboración propia: Adriana Dávila Ulloa.

The exchange between practices and purposes of this project is nourished by a demanding environment. Innovation, in this sense, comes from the recognition of the work process in each of its phases, as well as personal initiative and the skills to develop creativity in order to respond to that demand of the context. These values are based on the recognition of the subjectivity, autonomy, decision-making capacity, communication and coordination among the members of the project, each of them being the most promising capital for its development.

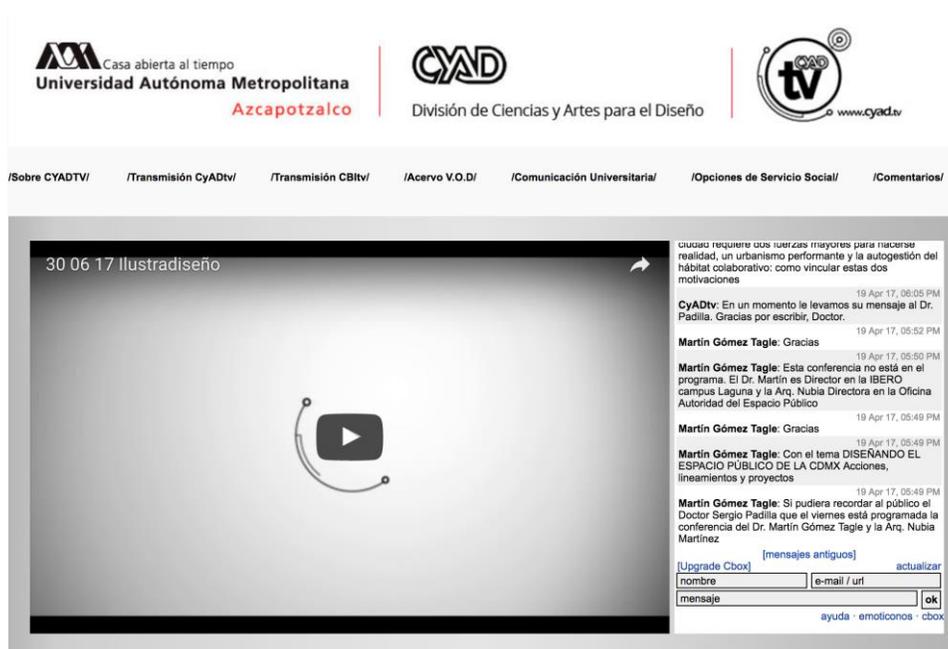
**Figure 2.** Recursos humanos y funciones.

<p><b>Preproducción</b> Planeación del evento, en fecha, hora y contenido</p>	<p>Los participantes deberán conformar un consejo para discutir e formato, los horarios y fecha de transmisión de evento en vivo.</p>
<p><b>Producción y posproducción</b> El levantamiento de imagen y la edición de audio y video se hace en tiempo real vía videostreaming.  trabajo de edición y composición en tiempo real</p>	<p>2 camarógrafos. 1 ingeniero en audio 1 Asistente general 1 Director de producción 1 Switcher (Tricaster)</p>
<p><b>Transmisión</b> La transmisión se hace al mismo tiempo que la producción por lo que la comunicación entre ambos equipos en el momento es fundamental</p>	<p>1 supervisor de transmisión vía web. 1 responsable del chat. 1 ingeniero con conocimiento en redes de transmisión vía web.</p>
	<p>*Locutor/ Entrevistador/Voz Institucional/Iluminación</p>

Elaboración propia: Adriana Dávila Ulloa.

The transmission of live events requires that these technological and human resources are made available to the agent (university or cultural entity, group, area, collective or individual) who wishes to broadcast an event through cyad.tv. The events that are transmitted through the platform are carried out in the auditoriums of the Unit (Auditorium Incalli Ixcahuicopa, Room K001 Martín Gutiérrez, Rooms W and W1, Rooms D001 to D007), in forums or spaces of the UAM outside of the Unit (House of the First Printing house, House of Time, Casa Rafael Galván, Metropolitan Gallery), or in cultural forums or institutions outside the university that have links at different levels with the UAM or with its community.

**Figure 3.** Plataforma de transmisión <http://www.cyad.tv>. Página de entrada del sitio.



The approach by cyad.tv with the agent that performs an event, allows unleash the processes of pre-production, production and postproduction that form the basis of cyad.tv's work organization. These phases have been shaped as an organic process, which has responded, on the one hand, to the needs of all television production in its "traditional" form, but also have adapted to the modes of operation of the streaming productions to the interior of interactive networks.

National television, for example, comes in this sense from the models of television organization (as it is clear in the channels of IPN-Canal 11 and TvUNAM), that with the passage of time have adapted or have incorporated in a or other measure the models of generalist (traditional) television production, to thematic (pay-TV) or convergent (Internet streaming), as classified by Cebrian Herreros (2004), as well as to the incorporation of hybrid forms of production audiovisual also driven by the languages of video and cinema. The convergent model is characterized, according to Cebrián Herreros (2004, p.205). specifically by:

- The heterogeneity of integrated channels in package offers.
- Simultaneity-convergent sequentiality with Internet theme channels of the same or different theme.
- The ability of channel interaction.
- Interactivity and searches.
- A browsing user and an exacerbated search engine for content, channels and media interrelations

In the case of cyad.tv, the project emerged from a research project (ICI-Research and Intermediate Creation), which began in 2009, under which a series of inter-quarterly events called "LiveMedia" Casa de la Primera Imprenta and UAM Azcapotzalco, where teams of teachers and students of design were grouped, focused on the transmission of live projects, aimed at documentary, experimental, artistic or didactic creation. These events, which lasted from three to six hours over a period of one to three days, allowed for the adaptation to the medium of streaming, the use of the television medium in combination with the videographic medium, the application of performative resources, of the didactic resources of the teaching, as well as the experimentation with the scope that the own medium offered from its initial moment of emergency.

Recognition of technological possibilities and limitations, such as the low resolutions achieved by live broadcast platforms (either through platforms such as livestreaming or others), allowed the exploration of the indistinct use of various reproduction and distribution cadences (8, 12, 24 or 30 frames per second) of audio or video channels, as well as color depths (black and white or color), and output format resolution qualities in pixels (240 x 180 pixels, 320 x 240 pixels, etc.) or audio quality (telephone, voice, cd), making it possible to use some or other options depending on the purposes of audiovisual projects. The medium, in this sense, singularly conditioned the messages (as McLuhan anticipated), allowing the results to act in favor of the habilitation in the technical and communicative configuration of the audiovisual products.

In the current context, explosive in terms of live streaming transmissions (already incorporated fluidly on platforms such as Facebook), HD qualities have been technologically positioned, showing as the scope of future future transmissions in 4K qualities (four times Full HD quality ), with emerging resources such as the use of high-quality devices and plasticity (IP cameras, drones, 3D imaging environments, etc.). The preproduction, production and postproduction phases on which cyad.tv works, which we describe below, contemplate the need to integrate these technological processes.

In the initial phase of Pre-production, cyad.tv performs a series of activities that are divided between those involving the agent diffuser and those that are given inside the cyad.tv. Among the preproduction activities that involve the coordination of the agents with cyad.tv, we recognize:

- > Compilation of elements of the event image (posters, promotional, speakers and participating academics, guests, participants).
- > Compilation of materials for live transmission (Power Point and digital slides, images, diagrams or photographs of participants' support).
- > Management of logistical support for the development of the event (available network and features thereof, cyad.tv infrastructure workspace, equipment transport, etc.)
- > Collection of databases (e-mail accounts, Facebook or Twitter) of UAM university audiences nearby or linked to the profile of the event to be broadcast.

The pre-production activities involving the human resources team within cyad.tv are:

- > Development of the image of the event (Headings, Title and Image of Series, Program or Event), by means of animations in 2D or 3D work platforms (After Effects, Flash, Motion).

- > Development of curtains, subtitles and animated credits to be used during the live production of the event.
- > Classification, selection and start-up of images and support schemes (format homologation and download of files in the transmission system) for live production.

On the other hand, the Production activities involving cyad.tv's human resources team are:

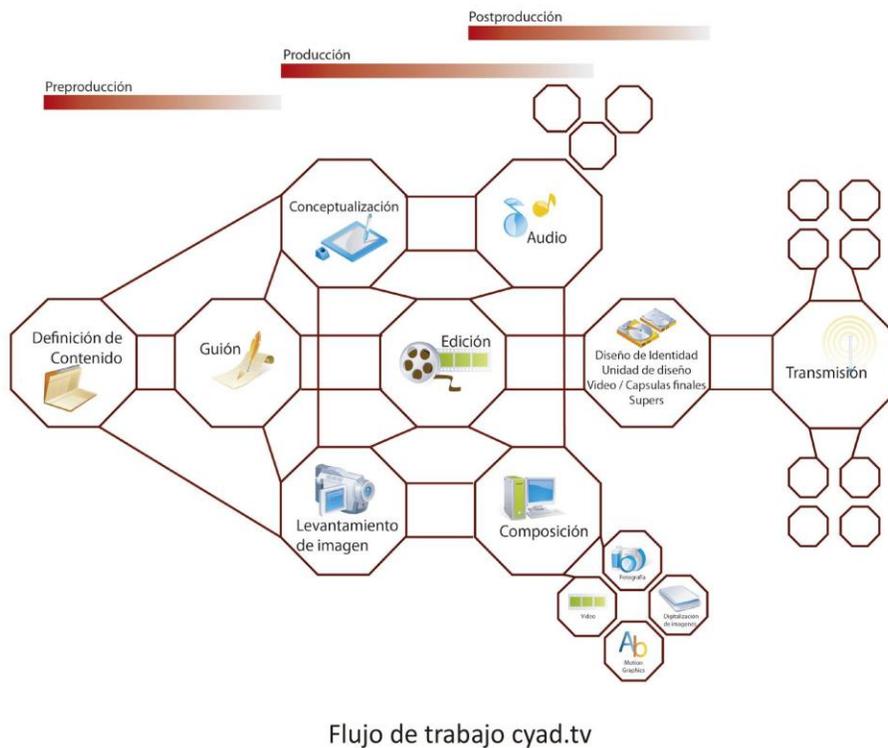
- > Management of cameras and the assignment of plans and locations according to the type of event.
- > Switcher control and transmission platform (Tricaster system, Blackmagic Studio system or platform accessible online, according to the need and magnitude of the event) for television control and mixing of audio and video signals and supporting visual resources .
- > Follow the cyad.tv platform through the chat added to the transmission window.
- > Monitoring of social networks for the generation of concurrent audiences in real time.

Finally, the Postproduction activities carried out by cyad.tv, are the following:

- > Record and record in high quality of the assembly made during the live production, as well as the signals of each camera located.
- > Qualification of audio-visual materials and the final assembly of blocks of the event: thematic, per speaker or participant.
- > Editing and postproduction of specific events. Creation of specific capsules by theme, speaker, etc.

- > Upload of edited audiovisual files of the event to the platform V.O.D. (video on demand) from cyad.tv.
- > Delivery of copies of the edited files to the diffuser agent.

**Figure 4.** Las fases de producción de cyad.tv.



Elaboración propia: Adriana Dávila Ulloa.

Over the past four years, from 2013 to 2017, cyad.tv has produced a growing amount of live events. While in 2013 there were 12 live events, in 2014 there were 43, in 2015 more than 50, and in 2016 more than 60, some of which involved transmissions of more than two or three days, each covering up to dozens of presentations or presentations. The collection of academic interventions that cyad.tv has in its section of archives V.O.D. (files on demand) has also allowed to create a reservoir of presentations and events that is housed in three servers: the computer system of the UAM has 45 collections with more than 200

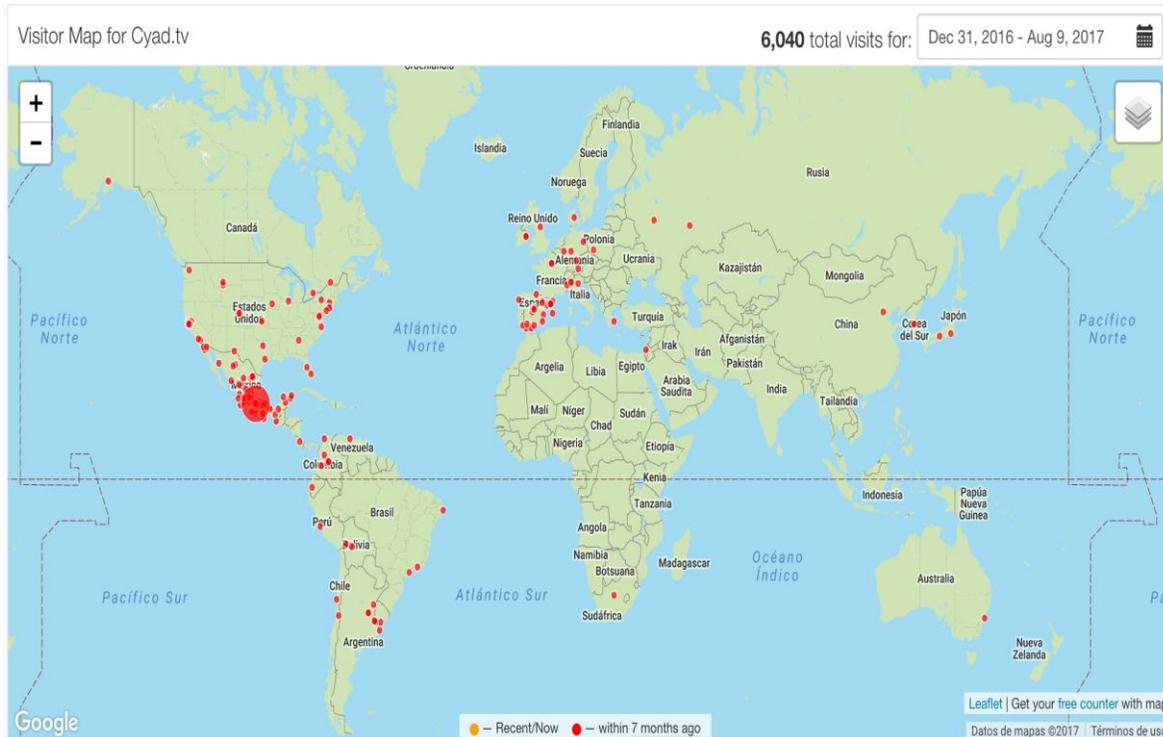
video files (<http://cyad.tv/acervo.html>); the iTunes University reservoir has more than 90 videos; and the YouTube channel has 41 collections with more than 292 videos in High Definition. The following table shows just the videos with the most visits to your own YouTube channel (<http://www.youtube.com/channel/UC2nNBReJ13F7MKPpsxDJOy0A/videos>) during the weeks of the 17-P quarter (from April to July of the present year), as well as the global locations from which cyad.tv is visited.

**Figure 5.** Videos más visitados en el canal *cyad.tv* de Youtube.

Vídeo	Tiempo de visualización (minutos) ⌚	Visualizaciones ⌚ ↓	Duración media de las reproducciones ⌚
TEDx - Azcapotzalco	6.468 (11%)	340 (14%)	19:01
17 06 02 1er encuentro de Ingeniería Industrial	1.579 (2,6%)	112 (4,5%)	14:06
Jornadas de Pensamiento Sociológico / 07 de ...	4.734 (7,8%)	111 (4,5%)	42:39
17 06 01 1er encuentro de Ingeniería Industrial	2.313 (3,8%)	109 (4,4%)	21:13
17 04 17 XIII Seminario Urbanismo Internacion...	3.912 (6,4%)	109 (4,4%)	35:53
17 04 19 XIII Seminario Urbanismo Internacion...	3.085 (5,1%)	102 (4,1%)	30:14
17 04 21 XIII Seminario Urbanismo Internacion...	2.588 (4,3%)	102 (4,1%)	25:22
17 06 29 Ilustradiseño	1.775 (2,9%)	85 (3,4%)	20:52
17 03 03 Italo Rota	2.370 (3,9%)	71 (2,9%)	33:22
Jornadas de pensamiento sociológico 08 de fe...	2.944 (4,9%)	61 (2,5%)	48:15

Estadísticas procedentes de canal propio de *cyad.tv* en Youtube.

**Figure 6.** Lugares y número de visitas al sitio *cyad.tv* durante 2017.



Mapa procedente de estadísticas del sitio *cyad.tv*: ClustrMaps (*cyad.tv*, 2017: <http://clustrmaps.com/site/h8b8>).

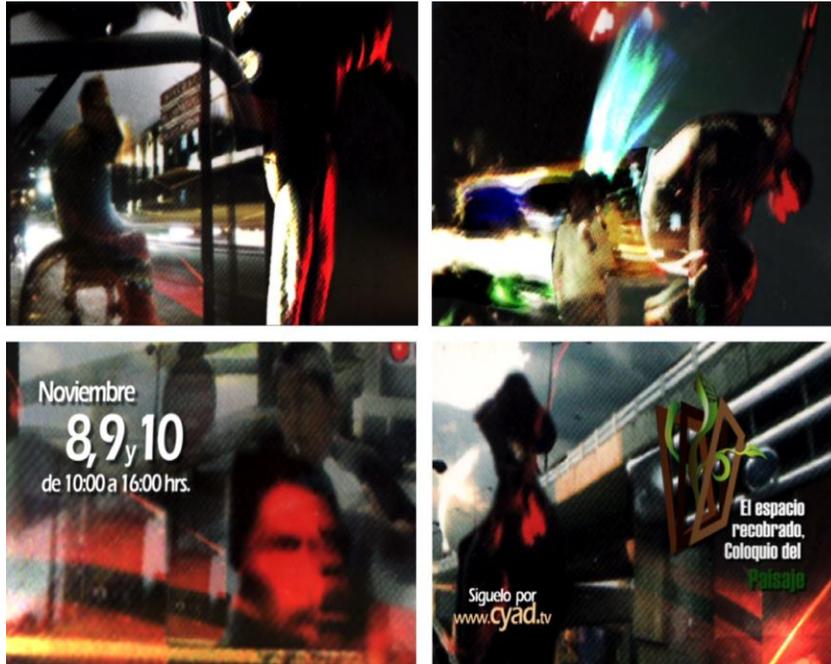
#### 4. Design of image and diffusion in networks.

An effective way to circulate content in the network is through the moving image, specifically taking advantage of the features and possibilities of Motion Graphics, which allow the manipulation of still images, recorded video and audio. This material resumes the advertising spots of the television, its duration is 30 seconds, are short, concise and its information presents several benefits, among which is the disclosure in a format not only attractive but efficient because of its multisensory nature. In addition, in the last five years video materials represent the largest number of visits on the network, whether on platforms such as Youtube or Vimeo, which can be retrieved by blogs, shared by social networks or sent by mail.

Let's see an example of how the image of a printed postcard of a specific event was manipulated to be shaped in a curtain of 30 seconds of duration for its diffusion in electronic means. The image for a transmission consists of:

- a) Corporate Identifiers, which shows us the logo that places us where we are, who is the information we are seeing and who transmits it;
- b) Flies or Mosca Logo, which is the channel sign that serves the permanent reminder function, is usually small to not compete with the image to be transmitted, static not to distract, but persistent, and its function is not to call the attention but to remain for periods of time to remember who is the one who transmits;
- c) Internal charts, which refers to the graphs that will indicate names of who is presented in table, also called supers or, well, the way of presenting tables, statistics or images;
- d) Separating screens of programs, which are brief from 10 to 20 seconds, show us the name of what we are watching or what comes next and serve to attract the viewer to the next program and keep it informed;
- e) Passage and exit of advertising, which in some transmissions indicate that the following space will be used for commercials outside the chain; Y
- f) Credits, which shows us the institutions, collaborators and production team of the event.

Figure 7. Frames del video promocional.



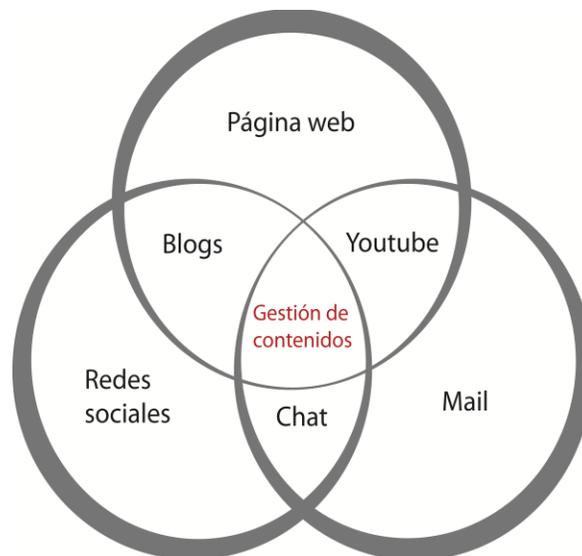
Imágenes: Jorge Ortiz Leroux para “Coloquio del Paisaje”.

In general, the workflow for the realization of audiovisual material is as follows: Selection of information> Production of screenplay> Production of support elements> Development of animation> Formatting for Internet> Transmission in Portal. The treatment of the image has to be designed in advance to provide the whole event with continuity. This example is similar for the image design of both the web page and the internal channels, as well as the particular events.

The impact of the image on the university channel implies, on the other hand, the search for strategies not only attractive, but efficient to integrate platforms such as Youtube, social networks, blogs, emails and all relevant tools and interfaces as an integral process of diffusion. The website condenses the information; mail invites, feedback; social networks

(Facebook, Twitter) keep users up to date, spread the website and call. In planning the cyad.tv project, broadcasting through social networks has proved to be a very close and efficient means of contact with the university community to call live events. In the course of the events and with the feedback of both chat on the page and comments in social networks, we observe the traffic of alumni from universities in the interior of the republic and other countries.

**Figure 8.** Gestión de contenidos.



Elaboración propia: Adriana Dávila Ulloa

This process of creating a speech and an audience represents the most important challenge of cyad.tv. The approach to the competitions by means of tools that are useful to them, as it happens in the profile in Facebook or through the live chat, contributes to tracing the routes of work that open the panorama to the creative process of the image, as we saw with the case of Motion Graphics.

**Figure 9.** Equipo de producción de *cyad.tv*.



Fotos: Adriana Dávila Ulloa

Cyad.tv involves different stages of work that require the creation of strategies and forms of organization. At all stages of the creation and production process, goals and objectives are built from a set of tools and media, thus enabling the development of skills that can be enhanced through a growing learning process focused on the permanent update. Virtual environments require design processes that constantly retrieve experiences to update their ways of working and organizing.

### **5. Conclusions. The updating of processes in the university audiovisual dissemination.**

The challenges of *cyad.tv* in response to the accelerated processes of change in the media streaming cover the following aspects:

- Creation of a video data support system (video server) to manage the content history, as well as postproduction specialized capsules in networked equipment in order to accelerate the work processes.
- Adoption of innovative technologies for live transmission, such as remotely controlled IP cameras, in order to make the most of human resources, as well as 4K cameras, drones or slow motion resources to emphasize specific situations.

- Multiplication of the live broadcast platforms, in order to simultaneously access different audiences, as well as diversify the working tools and the modalities of access to the receiving public according to the reception devices and qualities available.
- Renewing the cyad.tv channel image, recognizing the concerns and proposals that emerge from the UAM community, to extend knowledge and productions to more university audiences.
- Reconfiguration of the cyad.tv portal, updating the database V.O.D. (archived on-demand videos), their access to exchange tools with users, both live and deferred, through differentiated chats, comment pages and public and dedicated blogs.
- Development of new dissemination strategies, which implies:
  - Multiply presence in social networks (Facebook, Twitter, Youtube, Vimeo, etc.). Establish links with peer media (sites and channels of streaming university broadcasting at national level) and with nodes of transmission and dissemination of cultural character, both institutional and independent.
  - Disseminate cyad.tv campaign image and promotional material, as well as meaningful contents and capsules in social networks, cultural channels and forums, radio and television frequencies, university media of the UAM and other universities.

The cyad.tv project represents a challenge towards the formation of a university channel of UAM Azcapotzalco and of UAM in general, in agreement with other channels streaming with which this account. An example of platforms in this sense is UAMRadio 94.1fm, which broadcasts on open frequencies and is the starting point for a television project for an open frequency channel and online. The recent curricular changes in the Graphic Communication Design career at the UAM Azcapotzalco allow students to incorporate themselves in a more dedicated way to audiovisual production, representing this an important step for the diversification of contents and thematic bars, a purpose coincident

with the future tasks of cyad.tv. This also opens up new areas of opportunity for the efficient use of computer technologies to which the university has been clearly incorporated.

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Rol de Contribución	Autor
Conceptualización	Jorge Ortiz Leroux
Metodología	Jorge Ortiz Leroux, Ivan Torres Ochoa, Adriana Dávila Ulloa
Software	NO APLICA
Validación	Jorge Ortiz Leroux
Análisis Formal	Mtro. Ulises Osbaldo de la Cruz Guzmán Dra. Evangelina Cruz Barba
Investigación	Jorge Ortiz Leroux
Recursos	Ivan Torres Ochoa, Adriana Dávila Ulloa
Curación de datos	NO APLICA
Escritura - Preparación del borrador original	Jorge Ortiz Leroux
Escritura - Revisión y edición	Jorge Ortiz Leroux
Visualización	Ivan Torres Ochoa, Adriana Dávila Ulloa
Supervisión	Jorge Ortiz Leroux
Administración de Proyectos	Jorge Ortiz Leroux
Adquisición de fondos	Jorge Ortiz Leroux