

La fascinante aventura del conocimiento

MALOKA THE FASCINATING ADVENTURE OF KNOWLEDGE  
A PLACE TO MEET SCIENCE AND TECHNOLOGY

# IDEASS

COLOMBIA

Innovation for Development and South-South Cooperation



# Introduction

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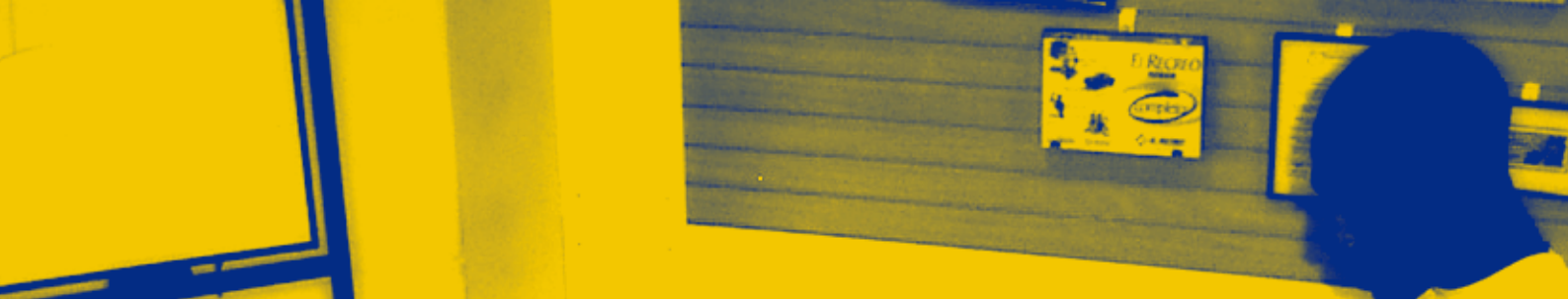
For many native tribes, the Maloka is the most important house in the village, built by the shaman, medicine man or chief. They go there to gain the knowledge of the universe. Not only is it the centre of political decision-making and religious activity, but it is also a place for relaxation, recreation and refuge. The community meets there and finds enrichment. Maloka with a 'k' is also a centre for social mobilisation and bringing people together.

In Colombia, Maloka is a nationwide programme for social improvement, which operates through a variety of strategies involving democratised and permanent education, the attainment of knowledge, the recovery of ethical values and commitment towards Colombia. Particularly successful is the Interactive Centre, which organises exhibitions in an area that covers about 10,000 square metres. Additional activities are developed around these interactive exhibitions to give extra curricula support to the teaching of science and technology, thus providing a pedagogical tool benefiting both the school community and the general public.

Maloka is a private non-profit making organisation, receiving contributions from national government bodies, the District of Bogotá, private enterprises and private individuals. Maloka is self-sustainable, providing its own activities, its own technology, and run through public and private institutions.

The project was the result of an initiative by the Colombian Association for the Advancement of Science (A.C.A.C.), as a strategy to make science and technology known to society at large and promote a culture that is based on knowledge. The project aims to bring technology into people's daily lives and the industrial system within a framework of sustainable development. Not only is Maloka one of the most important interactive science and technology centres in South America, it is also the most dynamic centre for tourist, social, cultural and educational development in Bogotá.





Maloka is first of all a place for experimentation. The Centre has 12 exhibition halls, which make up a great living museum in which people learn about science and technology through touching and playing. The Centre is also a place where children and adults can meet and exchange views. These strategies aim to foster an analytical view of science through discussions involving different sectors of society on issues of democracy, education, culture, science and technology.

Maloka's pedagogical experience goes beyond this varied array of exhibitions. In its five years of activity, Maloka has come up with answers to many of the problems affecting the education sector in the areas of science and technology. It has continuously offered teacher training and updates in scientific developments; it has given teachers a opportunity to socialise and discuss their concerns and educational experiences with pedagogical experts; it has set up science and technology clubs that encourage children of all ages to take an interest in these subjects through a philosophy of learning to learn, learning to do, and learning to undertake.

With the backing of the public institutions and private enterprises of the city of Bogota, Maloka has extended its commitment to marginal areas of the city, promoting environmental self-governance among local communities; it has generated technological development for many public and private sectors in fields such as robotics and



simulators, it has been active in the communications sector; its has generated discussions about the things that need doing and promoted research through special radio and television programmes. It has developed a package of external programmes, decentralising the museum, and has been active on the local, national and international scenes.

Maloka's activities have earned it international renown. Thanks to its experience and management capabilities, Maloka has advised on similar projects in countries such as Venezuela, Panama, Peru, Salvador, Bolivia and Mexico. Maloka is also a member of the most important international science associations and giant screen theatre organisations such as the Association of Science and Technology Centers (ASTC); the Giant Screen Theater Association (GSTA); the Large Format Cinema Association (LFCA); the Network for the Popularisation of Science and Technology in Latin America and the Caribbean (RED POP); and the International Council of Museums (ICOM).

# ■ What problem does it solve?

Colombia is a country that invests little in science and technology, a sector that receives only 0.4 per cent of the gross domestic product. This low level of investment has led to repercussions on the teaching of science and technology and has limited the strategies for making these subjects familiar to communities that are currently deprived of schooling. This situation has brought about a certain level of technological and scientific dependency. Proof of this is that Colombia has one of the lowest invention rates in the southern hemisphere, and although over the last 10 years there has been an increase in numbers of students going on to study science after completing basic school education, it is still lower than other Latin American countries.

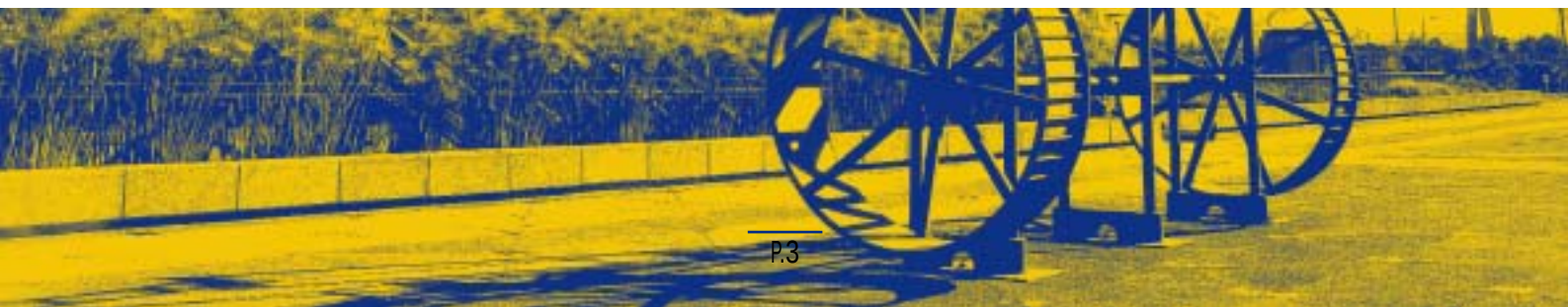


As an educational organisation for the familiarisation of scientific and technological values, Maloka has had a great impact on Colombian society. Since it first opened on 4 December 1998, after 18 months construction work, Maloka has hosted about 6 million visitors in its first five years of activity. These results have given Maloka a significant public image and it has received the backing of many social sectors concerned with science and technology.

The world's most important interactive centres have benefited from a great amount of cash

investment. Most exhibitions usually confine themselves to presenting and illustrating the principles of science and technology. Furthermore, studies show that most visitors are well educated. In these respects, Maloka is a different undertaking.

Maloka has faced and overcome the challenge of building a centre equal to other great science museums by managing its resources in conjunction with public and private bodies and enterprises whose services and products are concerned with science and technology. Another



economic factor that has been fundamental in the creation and maintenance of the centre has been its capacity to develop and produce its own technology in setting up the exhibitions. This technological self-sufficiency breaks the traditional patterns of technology transfer typical of developing countries.

Over and above the economic issues, Maloka has striven to broaden the level of representation of the country's scientific community. In terms of public relations, compared to the world's other great museums, Maloka attracts visitors from all

social sectors. In fact, a great number of them are children from schools with low resources, who are given the chance to visit Maloka thanks to the work of the district education offices.

Compared to other interactive centres or informal educational programmes for the promotion of science and technology, Maloka is committed to broadening the social context. It has developed educational programmes that involve both public institutions (ministries, district education and environmental offices, local authorities, service providers) and private



enterprise (Shell, Gas Natural, and other private energy companies). Maloka is committed to extending operations beyond the museum in Bogota, shifting activity to areas which otherwise would not have the chance to visit the centre.

In terms of educational proposals for the community, Maloka has organised exhibitions and activities that have travelled all over the country. Exploiting local installed capacity, as for example working with local guides, Maloka Viajera has been able to recreate centres for the familiarisation of science at the local level.





## MALOKA in practice

The Maloka Interactive Centre is located in an important commercial and financial sector of Bogotá. On the ground floor, the Maloka building extends over a public square covering an area of 7,000 square metres, with another 10,000 square metres underground. It is located in a zone that is easily accessed from many parts of the city.

Maloka has 12 exhibition rooms, each with a different theme, comprising the universe, water, life, biodiversity, human life, telecommunications, the petrochemical industry, the city, and a children's area. The different exhibition rooms are made up of various interactive modules. Maloka has developed over 300 modules on various themes. With its own cutting edge technology and workshops, Maloka can offer purpose-built modules for third parties based on plans developed jointly with Maloka experts.

Maloka boasts the first giant screen theatre in South America, which has 314 seats and the most advanced image and sound technology. Apart from providing different types of entertainment for the general public, the films shown are also aimed at educational institutions and chosen in conjunction with teachers.

Maloka also offers the opportunity of taking the concept of play and education to young people and families of other communities with an itinerant exhibition entitled Maloka Viajera. Maloka Viajera has extended the activities of the centre throughout the country, generating permanent ties with the communities visited. Maloka Viajera also has an international vision. This itinerant exhibition includes interactive rooms on mathematics, electricity, magnetism and astronomy. Maloka Viajera is designed to be highly flexible, so that it can adapt exhibitions to local needs and available space. It has its own team to set up exhibitions and educational coordinators that train young local people to work as guides during the visit.





Maloka can provide consultancy at various levels: architectural and technical consultancy for the installation of giant screen cinemas; educational consultancy for science museums or centres, educational material, teacher training and advice on creating similar projects both in the planning stage and in targeting audiences.

More than just a physical or geographical location between two streets, Maloka is an experience offering continuous development and enrichment, pushing Colombia to trust in its capabilities and set itself great goals. It lives up to its name because, as its name suggests, it is a place for everyone, no matter where they live or who they are.

Maloka's pedagogical model is based on three major principles:

- Learning by doing, where experience, concrete action and abstract concepts go hand in hand.
- Learning to learn, so that people go beyond mere content and information, and are encouraged to ask and actively explore multiple questions.
- Learning to undertake, so that what we have gained is transformed into action, change and innovation.

This pedagogical model pervades the design and implementation of all the products and services that Maloka offers the general public.

## MALOKA PROGRAMMES

**School for Guides.** An important example of Maloka's pedagogical model is the School Guide Programme, which aims to promote the training, participation and independence of young people that work as facilitators of the centre's learning experience. These guides are generally university students that receive continuous training in Maloka and who are also given the chance to propose and design their own educational activities for the public.

**Science and Technology Clubs.** Other examples of how Maloka's pedagogical proposals are applied are the science and technology clubs, the programmes organised for teachers, and interactive missions aimed at students. The science and technology clubs give children of different ages the chance to explore biology, ecology, chemistry and robotics, approaching the basic concepts of each subject through experimentation. However, it also allows them to generate proposals that concern the problems of their own local contexts. This is made possible through the backing and guidance of researchers that assist participants in their scientific projects.

BIENVENIDOS

Programming of teacher activities. Maloka offers forums, workshops and seminars designed as academic settings for debate and discussion of current issues with experts. Maloka also organises Teacher Days, providing refresher courses in physics, chemistry, biology and mathematics.

Interactive missions are designed to explore and investigate curricular subjects that the students are studying in class. Courses are structured by teachers in conjunction a team of educational experts from Maloka.



Mediateka. Another significant service provided by the centre is the Mediateka or media library, which was built with the backing of the Culture Ministry and was designed as a centre of documentation and exploration of new media, aimed at familiarising people with the language of new communication technologies.

Exhibitions. Maloka provides added stimulus for the centre's exhibitions through its 'temporadas' (seasons), involving a cross-section of the themes explored in the exhibition rooms, such as water, human life, and the history of science amongst others. Experts in education and science, with the backing of exhibition guides, design multiple activities that renew the exhibitions, turning them into laboratories and offering regular visitors a different Maloka.

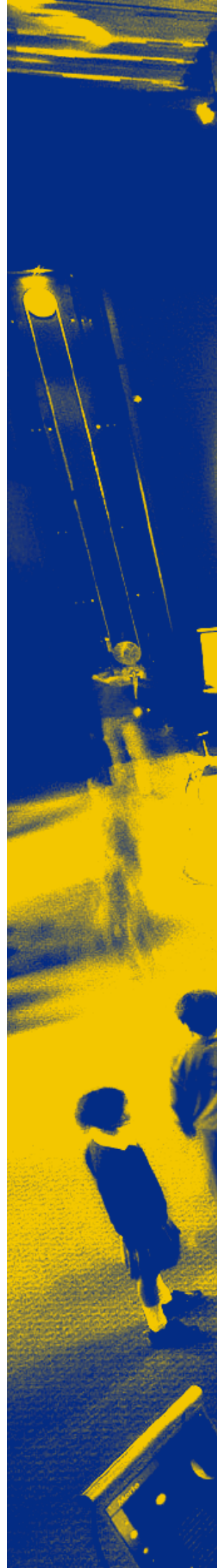
Conference cycles. As a meeting point for the society in general, Maloka offers conference cycles, where the public is offered an everyday, accessible approach to the issues of pure and social sciences. Similarly, the scientific, academic and industrial communities are given the chance to share or relay various topical issues of public interest.

The cultural fringe. Maloka offers classical concerts by national symphonic orchestras and bands, storytelling activities, puppets, and other events, bringing families, young people and children closer to the issues of science and technology in an informal non-conventional way.

## MALOKA PEOPLE

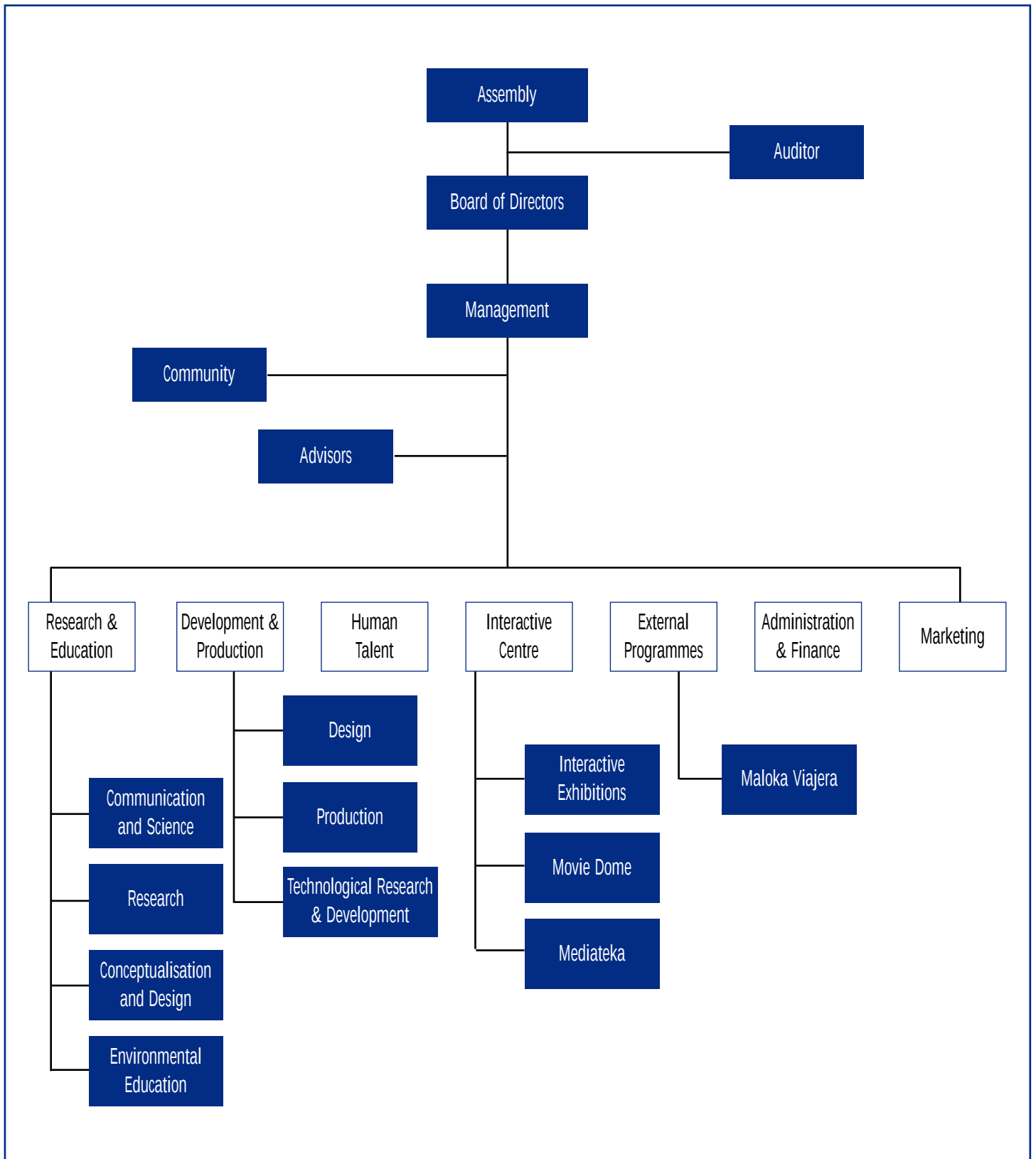
Maloka has a staff of nearly 300, divided into 7 workgroups: research and education; development and production; human talent; interactive centre; external programmes; administration and finance, and marketing. The research and development groups establish the guidelines that the other groups follow in accomplishing the mission that Maloka has set itself.

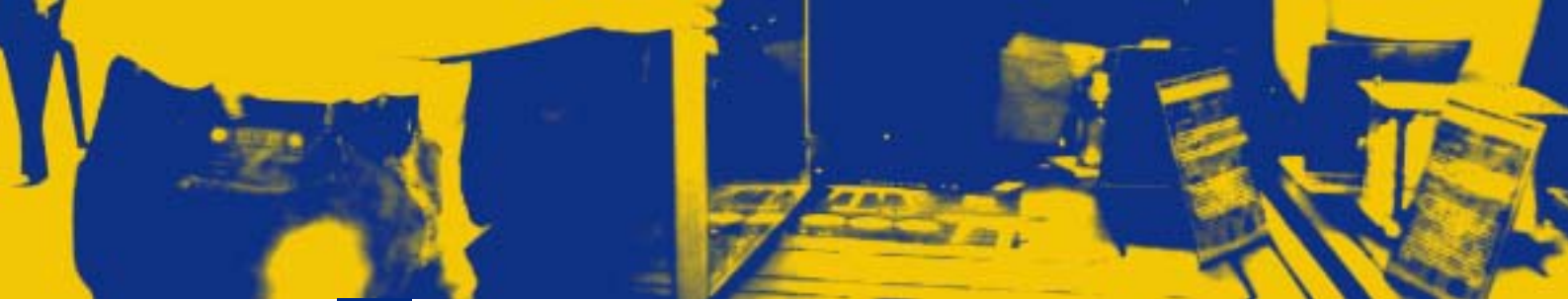
The scientific community and a group of external advisers support the work of these seven groups. At the head of the organisation is a general assembly, with a board of directors representing the country's various public and private sectors. They provide guidelines for the Maloka management committee.





The following flow chart illustrates how Maloka is organised:





## Results

Maloka's efforts to promote science and technology throughout the country have earned it second place in a survey carried out in Colombia on the promotion of science, behind COLCIENCIAS, the state institution responsible for the promotion of science research. This is due in part to the contribution made by the National Science Academy, which has given continuous advice on the generation of Maloka's educational proposals. Maloka has also established close ties with the nation's universities in designing exhibitions, training exhibition guides, and developing follow-up strategies, which are taken to other areas of Bogotá and the rest of the country.

Another practical demonstration of the results achieved by Maloka can be seen in the high percentage of capital investment from business sectors such as energy, which has contributed to the design of interactive proposals aimed at illustrating the themes of water, oil, energy and others in a more accessible, everyday way.





## International interest

A symbol of confidence in the country, a dream that we may one day live in a different kind of city, only makes sense if it is perceived and accepted as such. The most important indication that this is so is the great number of visitors flocking to the different proposals. In the first three years of activity, the centre has hosted more than three million people. The organisation and the image it projects have also received many awards and public recognitions, which are a demonstration of the general impact it has had on the community. These include:

- Two architectural awards, two industrial design awards, and a national graphic design prize.
- A project designed by Maloka was selected by the Colombian Biennial of Architecture as an example of excellence in town planning.



- A national prize for business innovation (Portafolio).
- Chosen by the DNP (National Planning Department) to represent Colombia in the International Project Bank as a successful national project and model.
- Chosen by the Chamber of Commerce as a symbol of transparency, and as the venue for the signing of a transparency pact by representatives of the public and private sectors.
- Chosen as a symbol of Bogotá.
- Maloka Virtual received the Golden Web Award as one of the 100 best Web pages in the world.

- Latin-American prize for the Popularisation of Science and Technology, awarded to Maloka for its outstanding work at the national and regional levels in popularising and relaying the values of science and technology.
- Gonzalo Jiménez de Quesada Prize awarded by the Sociedad de Mejoras y Ornato de Santafé de Bogotá (Bogotá improvement society), as a recognition of Maloka's important contribution to education, science and technology in the capital.

# ■ Adopting Maloka in other countries

Maloka is interested in sharing its experience and knowledge with all national and local government authorities, municipalities, chambers of commerce, civic organisations, private businesses and mixed or joint enterprises in the development of interactive centres like Maloka in their respective environments, so that everyone may enjoy the benefits. To do this various steps have to be taken into account.

The process begins by exploring the context in which a Maloka-type experience is to be built. This is to identify the local stakeholders who are interested in taking part in the project: the scientific community, industry, lower and higher educational establishments. This exploration involves identifying, on the one hand, the stakeholders' interests and, on the other, inviting them to define pedagogical criteria, the themes to be illustrated, and the type of experience they wish visitors to experience.

Parallel to this conceptual design, established in conjunction with the key stakeholders, preliminary research is needed on how the general public perceives science and the themes that the centres wish to illustrate. This step is very important, since it provides the guidelines for generating the most appropriate educational proposals for that context.

In this initial process, Maloka can give advice on research by suggesting the best methodology and generating participative instruments to gather information on the interests and expectations of the stakeholders involved. Maloka can also advise on the analysis of the information gathered so that, in conjunction with the parties interested in replicating Maloka, the type of experience being offered to visitors, the services that are to be offered, and the centre's communicational criteria can be defined.



As for more technical issues, but which also affect the pre-implementation phase, Maloka can help establish guidelines for museum design, elaborate follow-up tools to consolidate visitors' experiences, and define criteria for the training of personnel that is to work in the centre.



Once the pedagogical foundations of the proposals and the design criteria have been identified, work can begin on legal, financial and administrative questions. In these aspects, a pre-feasibility study is needed. This includes an analysis of economic sustainability, so that the amount of pre-investment required for the development of the interactive centre is assessed. In addition, a detailed definition of the services that are to be offered, costs, and an operational outline are needed to establish the centre's financial and operational structure, as well as the necessary infrastructure.

At this point, Maloka can give financial advice to interested parties, help establish the operational structure of the centre, advise on human resources and define requirements.



Once this stage of the conceptual and operational design has been concluded, work can begin on the building phase. It is worth reiterating that to reproduce the Maloka experience successfully, proposals and activities for the popularisation of science must be adapted to the context, social needs, and economic resources. That private enterprise, local and national government institutions, and educational establishments take part in the initiative is fundamental.

In the event of interest in the construction phase, Maloka can advise on architectural design, produce new modules or replicate some of its own, and set up the modules or exhibition rooms. Maloka has technical manuals for setting up and running exhibitions, which can provide an important basis for the sustainable reproduction of the Maloka experience, or a part of it.

In the event that those interested wish to design their own products for the centre, Maloka can train local teams to produce, design and set up interactive exhibitions and follow up their work to make the initial idea a concrete reality.

## To learn more

During the last 5 years, Maloka has produced annual reports on the advances made by the centre. It also has institutional documents on the products on offer, which can be made available to the public on request.

The Maloka Documentation Centre also has a complete record of all the press articles that have been written on the centre. Copies of this information are available at the addresses listed in the following section, or you can contact:

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## Contacts

Maloka is interested in sharing its experience and knowledge with all national and local government authorities, municipalities, chambers of commerce, civic organisations, private businesses and mixed or joint enterprises in the development of interactive centres like Maloka in their respective environments, so that everyone may enjoy the benefits.



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