

# Technological Ecosystems in Health Sector



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# About us

GRIAL Research Group

# About us:

## Who we are

- Officially recognised research group by the University of Salamanca from 2006
- Group of Excellence by Castile and León Regional Government (GR-47) from 2007 till 2016. UIC since July 2016
- Interdisciplinary group, composed of permanent members from different fields of knowledge

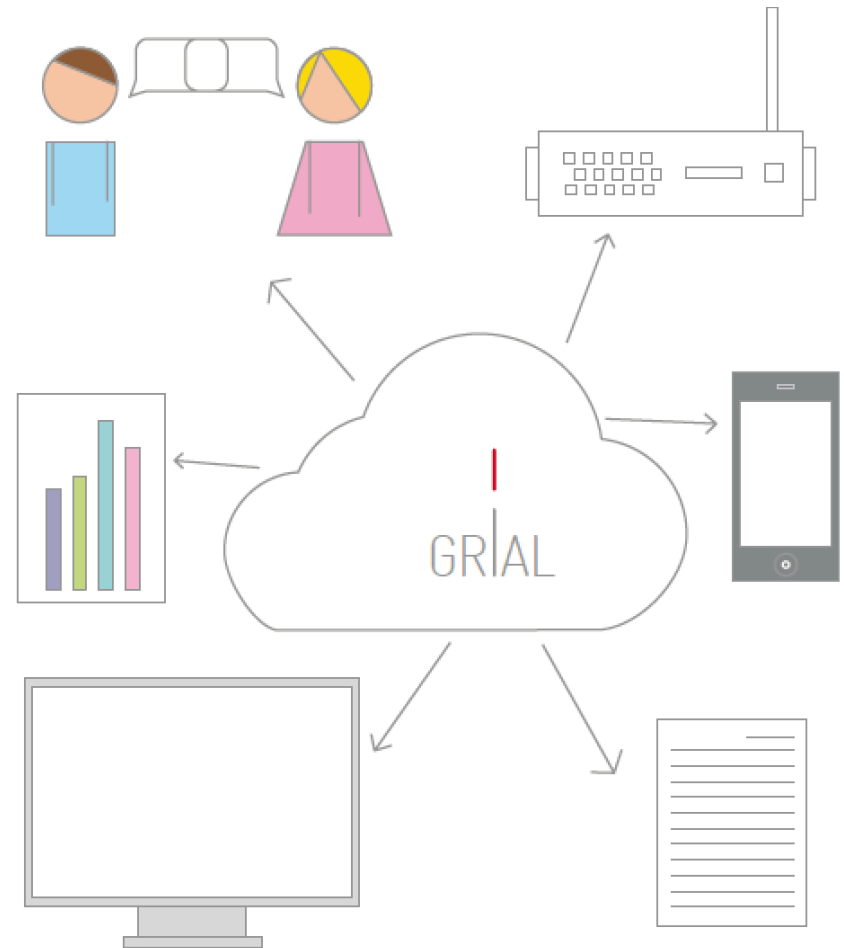


VNiVERSiDAD  
D SALAMANCA

CAMPUS OF INTERNATIONAL EXCELLENCE

# About us: what we do

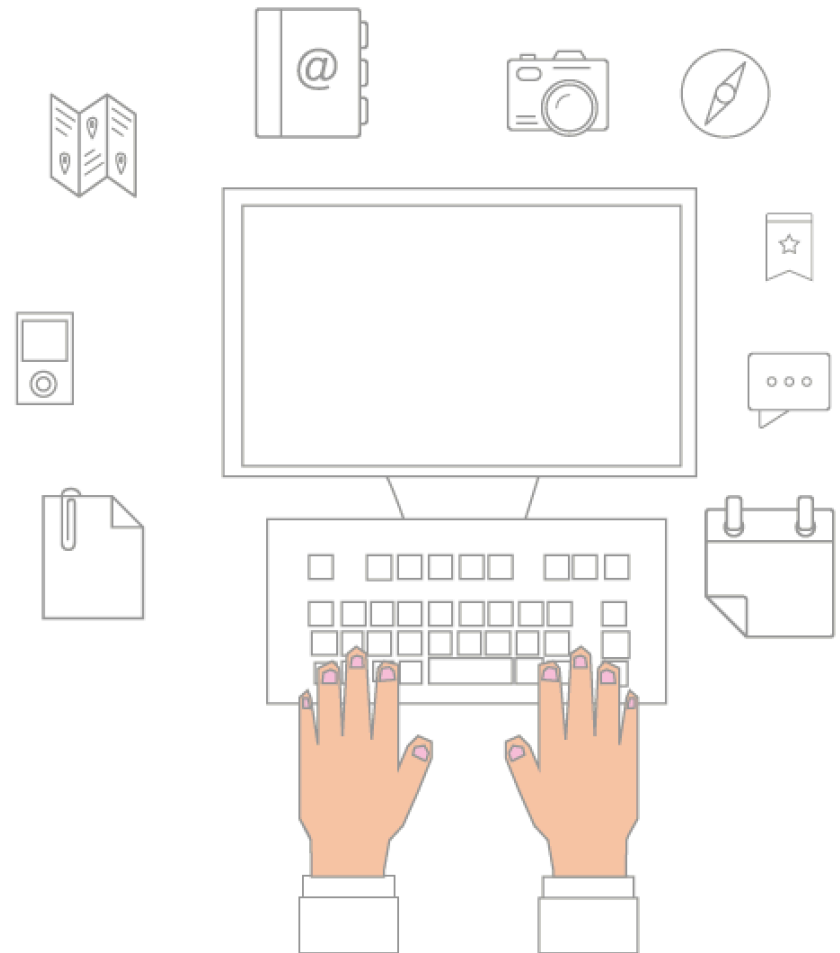
- Scientific Research and R&D/  
R&D&i on its own initiative, in  
partnership or third party claim
- Training including on-demand  
training
- Wide range of on-demand  
services oriented to companies  
or institutions
- Collaboration with companies  
and institutions in research and  
development projects



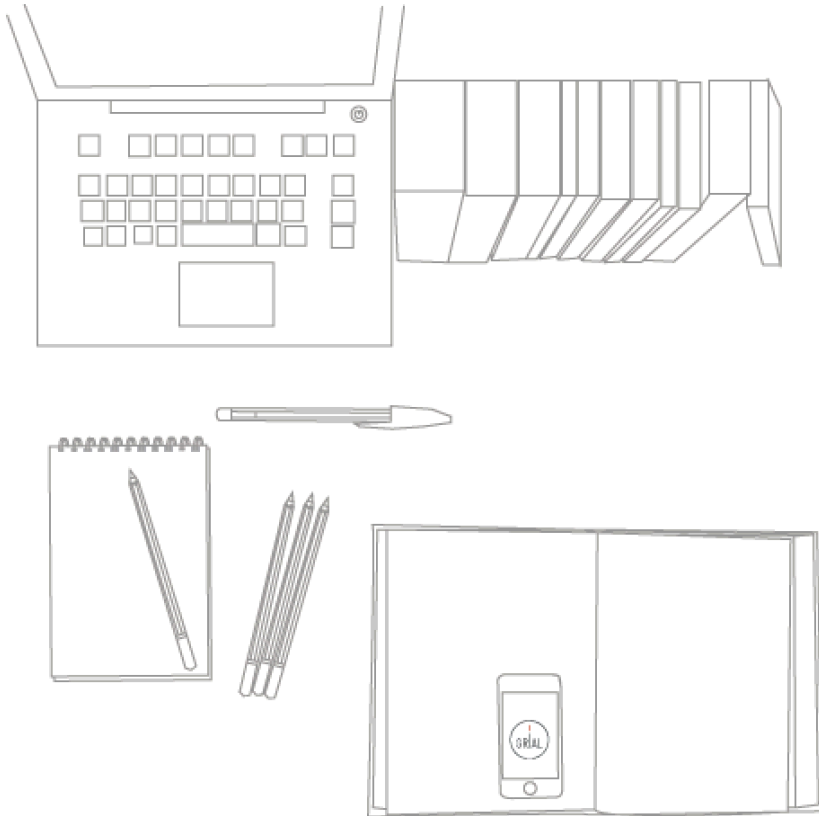
# About us:

## Services

- Models and applications of information visualization and computer-human interaction
- Processing and packaging of learning objects
- Online training initiatives
- Development, management and maintenance of infrastructures for online training
- Technological and eLearning innovation support services
- Technological development services
- Research services and projects about eLearning



# About us: Contact



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Which is a technological ecosystem?

Biology vs. Technology

An aerial photograph of a coral reef system. The water is a vibrant blue, and the reef is composed of various shades of brown and tan, indicating different types of coral and sand. The reef structure is complex, with many small, irregular shapes and patterns. A semi-transparent grey box is overlaid on the upper right portion of the image, containing white text.

A natural ecosystem is a community of living organisms in conjunction with the non-living components of their environment (things like air, water and mineral soil), interacting among them

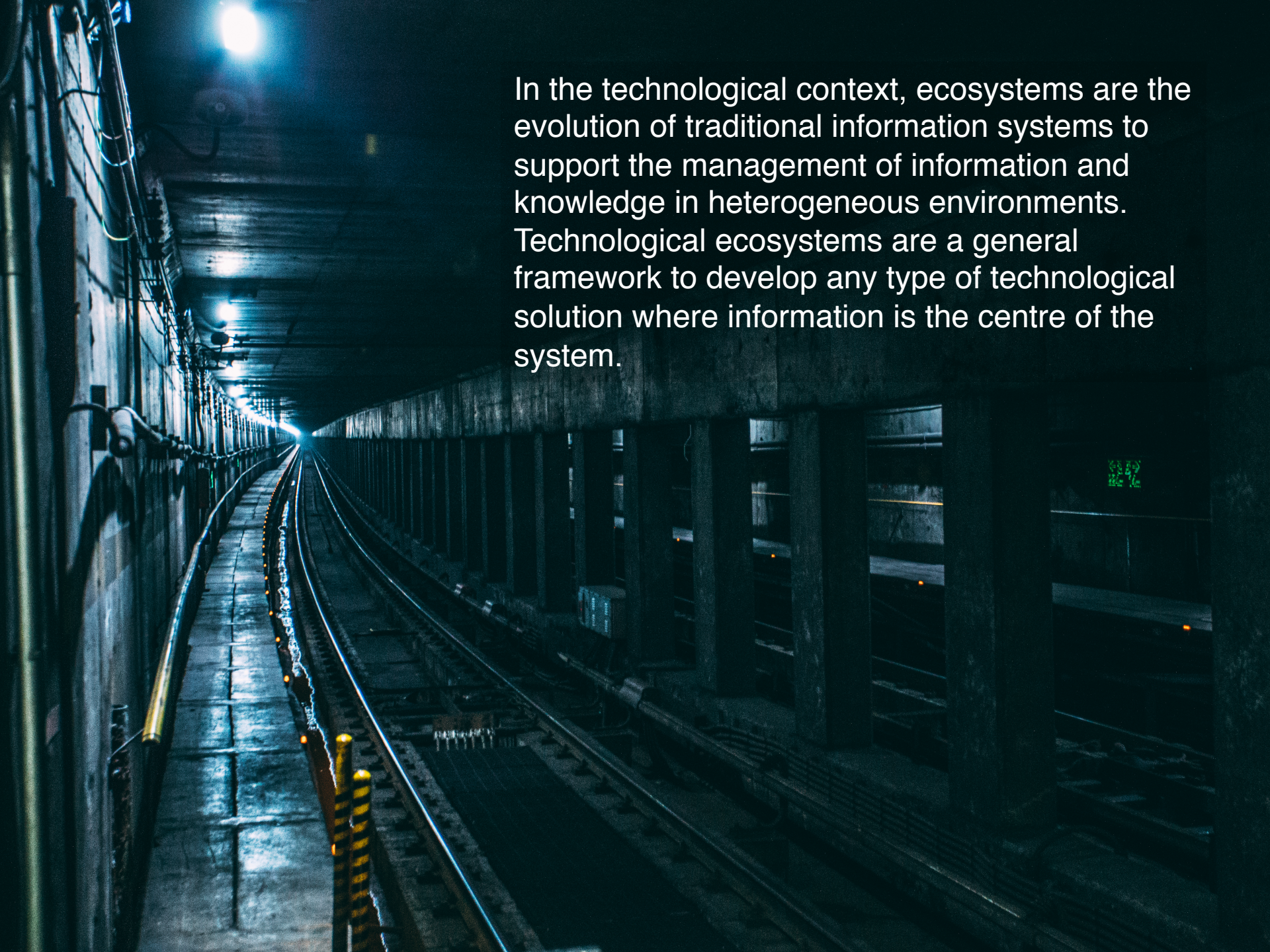




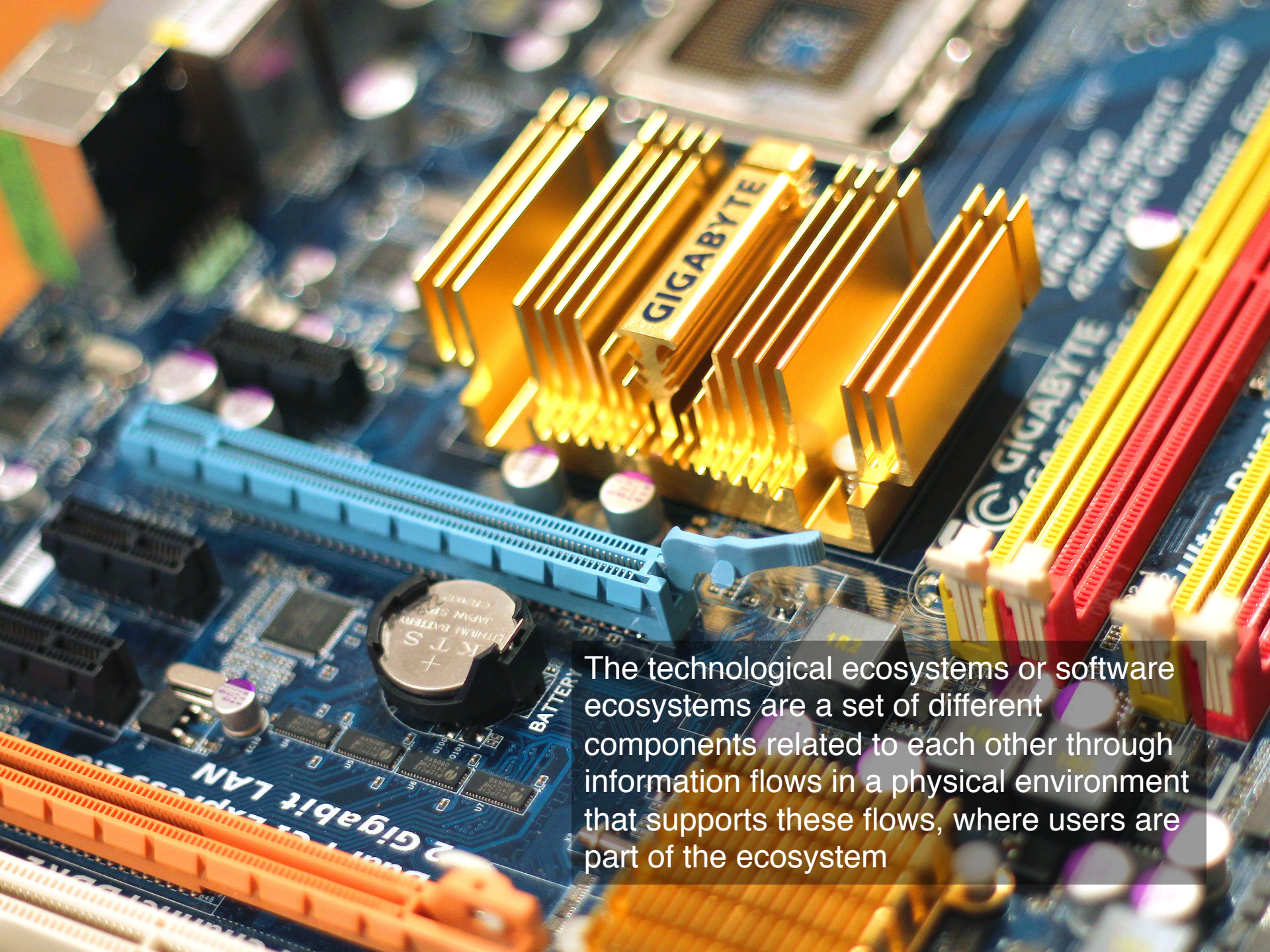
There are three main elements in any natural ecosystem: organisms, physical environment and the relationships among them



Each natural ecosystem has a set of characteristics that make it different from other ecosystems. These differences are a significant part of the definition about natural ecosystems and are an important connection with the technological definition.

A long, dimly lit tunnel with tracks and overhead wires, illuminated by a bright light at the far end. The tunnel is dark, with a strong blueish-white light source at the far end creating a bright glow. The tracks are visible on the right side, and there are overhead wires and pipes on the left. The walls are made of concrete or stone, and there are some small lights or indicators on the right side.

In the technological context, ecosystems are the evolution of traditional information systems to support the management of information and knowledge in heterogeneous environments. Technological ecosystems are a general framework to develop any type of technological solution where information is the centre of the system.



The technological ecosystems or software ecosystems are a set of different components related to each other through information flows in a physical environment that supports these flows, where users are part of the ecosystem

This is a parallel to natural ecosystems where the organisms are the software and human components, and the interrelationships are the information flows. Moreover, exist a strong evolving component in the technological ecosystems in order to adapt them to the natural evolution of the organizations and institutions.



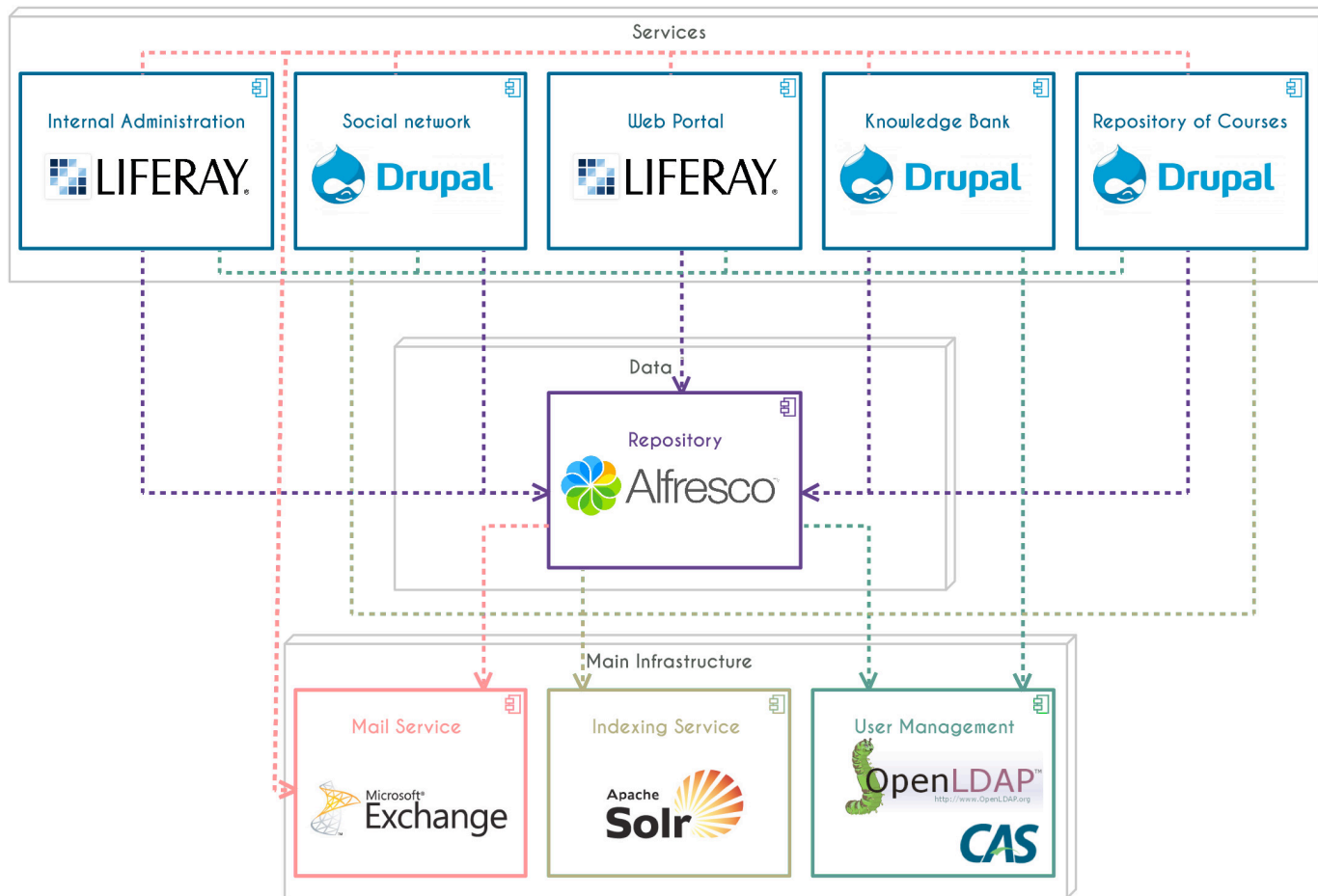


iOS and Android ecosystems are a clear example of technological ecosystems, they provide a platform not only for selling applications, but also to establish information flows among them

# Technological ecosystem examples

GRIAL Group experiences

# Technological Ecosystem examples: Public Administration (I)





# Technological Ecosystem examples:

## Public Administration (II)

- The technological ecosystem of Spanish Public Administration is composed by a large number of components oriented to cover the different knowledge management needs both Institute inside and outside
- Services includes the main components of the ecosystem
- The static data management layer to manage the information shared among different components of the ecosystem and has a static nature due to it is not continuously updated
- Infrastructure layer, whose aims is to provide supporting to the elements on top layers. For instance, this layer includes software components for the centralized user management or the server in charge of email management

# Technological Ecosystem examples: Public Administration (III)

The screenshot shows the INAP (Instituto Nacional de Administración Pública) website. The header includes the Spanish government logo and the INAP logo. The main navigation bar features 'Sede Electrónica' and a search bar. Below this, there are three main menu items: 'Selección', 'Aprendizaje', and 'Investigación y divulgación'. A central banner for 'AGORA 4ª EDICIÓN' is prominent, with the text 'Biblioteca on line de recursos de la Administración Pública'. A secondary navigation bar includes 'Conócenos', 'Red Social', 'Promotores de Formación', 'Aprende on line', 'Actividad Editorial', and 'Banco de Conocimiento'. Below this, there are buttons for 'MÁSTER EN LIDERAZGO Y DIRECCIÓN PÚBLICA', 'PROYECTO "COMPARTIR"', 'LA ADMINISTRACIÓN AL DÍA', 'EL INAP e IBEROAMÉRICA', and 'INNOVA'. At the bottom, there is a section for 'El Congreso Internacional de Trabajo Social (CITEST)' and a video player for 'poniendo en contacto a todos los'.

The screenshot shows the 'Repositorio de cursos' page on the INAP website. The header includes the INAP logo and the text 'Repositorio de cursos Instituto Nacional de la Administración Pública'. The main content area features a large image of a pencil holder filled with colorful pencils. To the right of the image is a blue box with the heading 'Inicio de sesión'. Below the heading, there is a link for 'Acceso usuarios' and a question '¿Has olvidado tu contraseña? Haz clic aquí'. A 'Solicitud de acceso' section follows, with a paragraph explaining that users can request access to the application through the INAP website or via email to 'colaboraciones.tic@inap.es'.

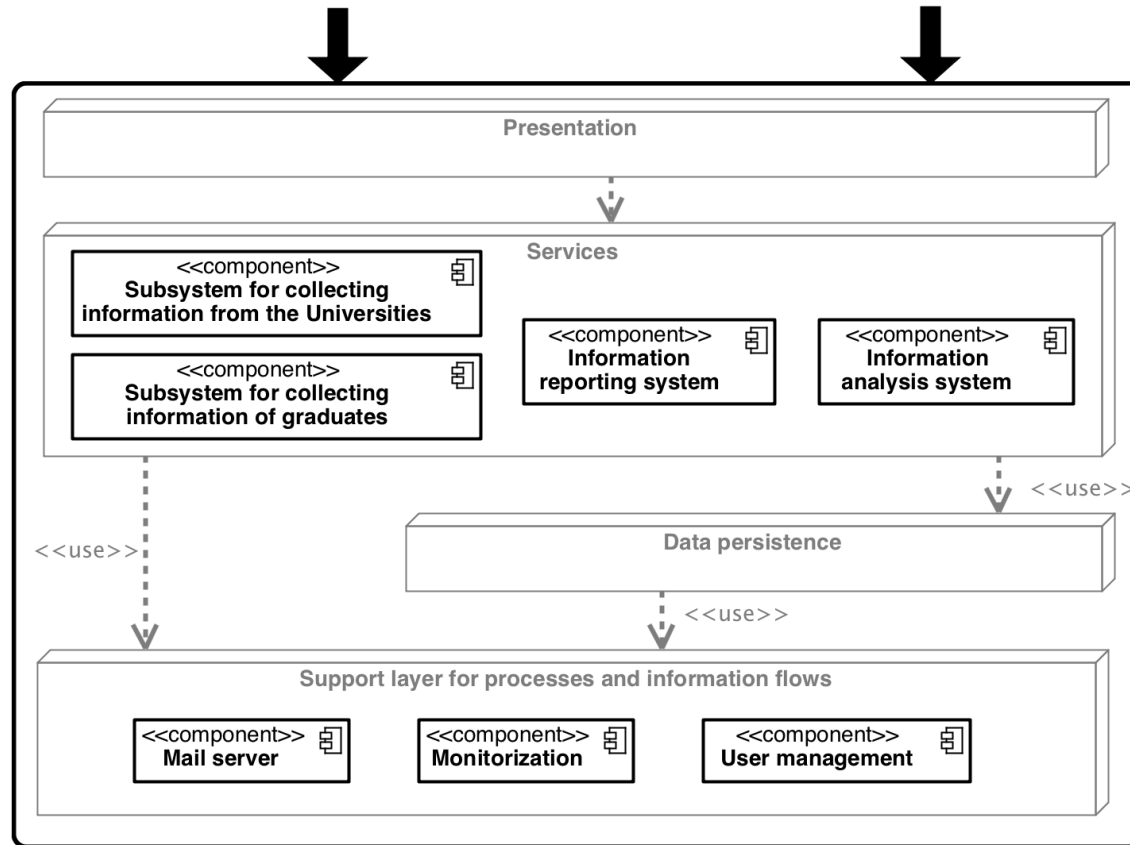
The screenshot shows the INAP Social website. The header features the INAP Social logo and the text 'Conecta, contribuye y comparte'. Below this, there is a sub-header 'La Red Social Profesional de la Administración Pública' and a large 'ACCESO USUARIOS' button. Underneath, there are links for 'Regístrate' and 'Recordar contraseña', along with a note about accepting terms of use. The main content area is divided into three columns: the first column describes finding professional contacts and experiences; the second column describes establishing a network and sharing knowledge; the third column describes the integration with the INAP Knowledge Bank. The footer includes the INAP logo and copyright information for 2015.

The screenshot shows the BCI (Banco de Conocimientos INAP) website. The header features the BCI logo and the text 'Banco de conocimientos INAP COLECCIONAR, CONECTAR, INNOVAR, APRENDER'. Below this, there is a search bar and a 'Cómo funciona el BCI' section. The main content area features a large image of a modern building and a 'Novidades' section with the heading 'APROBACION DE PLANES DE INICIATIVA PARTICULAR'. Below this, there is a link for 'Revista de Estudios de la Vida Local (1942-1984)'. The footer includes three icons: 'Círculo de conocimiento', 'Cooperación interinstitucional', and 'Experiencias de aprendizaje'.

# Technological ecosystem examples: Employability and Employment (I)

Management and Coordination Unit  
(Management)

Expert Council  
(Methodology)



# Technological ecosystem examples: Employability and Employment (II)

- The Observatory for University Employability and Employment is a technical unit that collects, produces, analyses and disseminates information about employability and employment of university graduates in Spain
- It technological ecosystem collects, stores, process and exploits information and results produced by the Observatory
- The support layer is an intermediary entity that facilitates interoperability between components, decoupling information flows and logic of each of the subsystems, which simply focus on functionality and communicate with this entity
- Data layer is responsible for storing the information in a structured, accessible and in a standardized way
- The services layer has two components for collecting information from different sources and other two components for analysing and presenting the information

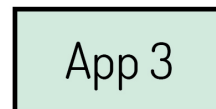
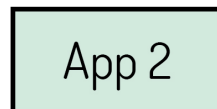
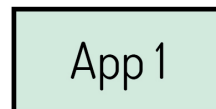
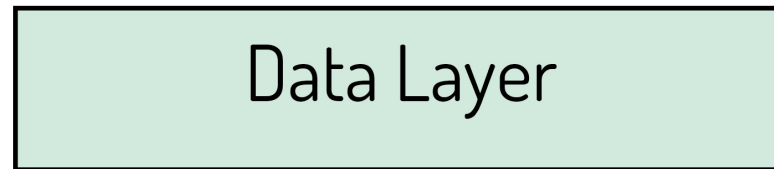
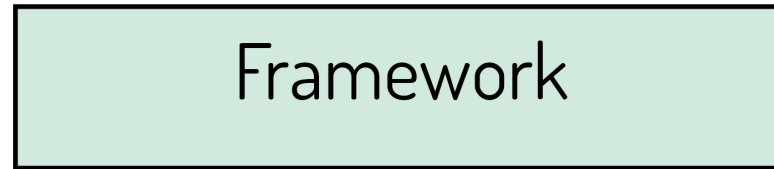
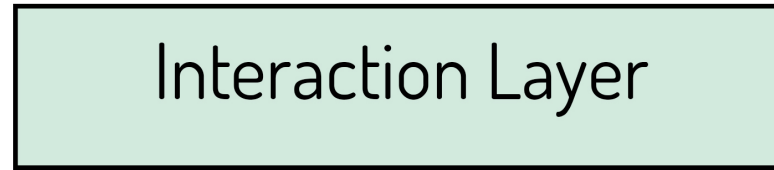
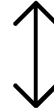
# Technological ecosystem examples: Employability and Employment (III)



# Ecosystem in Health Sector

Some apps examples

- The ecosystem will be integrate different ICT based solutions to provide health care
- The ecosystem will be composed by the different tools and apps
- The ecosystem will provide the required tools to include new components and their information flows
- Each component should implement the integration through the tools provided by the ecosystem





# SocialNet

- Private social network for monitoring daily progress of patients by their relatives
- The main aim of SocialNet is providing a social interaction context restricted to relatives and authorized persons by the patient or his/her legal guardian, in order to they can track the daily progress of the patient
- Each patient has a private area only accessible to authorized persons and their caregivers, where they can share pictures, videos or texts about its progress

# Alicia García Holgado's wall

## Wall activity



### Visit to Salamanca

Submitted by *Tomás Hernández Hernández* on Mon, 08/31/2015 - 13:18

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[Read more](#) [Add new comment](#)



### Test

Submitted by *Administrator* on Sat, 08/29/2015 - 21:21

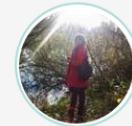
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## Publish

- SimpleNews

## User



Alicia García Holgado

## Authorized



María Benito  
Pérez



Lucía García  
Holgado

## Carers

# DISCOVER

- Psycho-education platform for participants (older people and carers)
- Learning Management System for carers

# Skills Zone Start

DISCOVER is information, advice, guidance and training to support the wellbeing of carers in their caring role.

Click on the image below to access the Skills Zone.



## Login



Username

Password

Remember username

Login

[Create new account](#)

[Lost password?](#)

You are not logged in. ([Login](#))



# Gradior



- Cognitive rehabilitation program
- A software for cognitive stimulation, neuropsychological assessment and rehabilitation for professionals who support patients with mental illness, neurodegenerative diseases or elderly people with memory complaints
- The program is based on the implementation of activities that stimulate different cognitive functions, with varying levels of skill and execution
- GRADIOR facilitates professional monitoring of results and the adaptation of patient sessions

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