

Building New Indicators for Researchers' Careers and Mobility Based on Electronic Curriculum Vitae: The Case of the DeGóis Platform

EURO-CV PROJECT REPORT

Margarida Fontes

INETI / DINAMIA

José Assis

INETI / DINAMIA

Emília Araújo

ICS / UNIVERSIDADE DO MINHO

Sofia Bento

SOCIUS / ISEG

Luísa Henriques

IPTS/SOCIUS

André Pirralha

DINAMIA

Leonel Santos

GAVEA / UNIVERSIDADE DO MINHO

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A. INTRODUCTION

There are currently two main databases in Portugal regarding researchers' electronic CVs:

- the **FCT-SIG** (Council for Science and Technology-Information and Management System) – hereafter called the **FCT Information System**, and
- the **DeGóis Platform**

Although this report will be concentrated on discussing the DeGóis Platform, since the latter will prevail in the medium/long term, replacing the former one, we believe it is useful to shed some light on the FCT Information System, as it still comprises the bulk of researchers' electronic CVs in Portugal.

A.1. The FCT Information System

It is currently managed by FCT (Council for Science and Technology), which by Law is required to continuously promoting the advancement of scientific and technological knowledge in Portugal, exploring opportunities that become available in any scientific or technological domain to attain the highest international standards in the creation of knowledge, and to stimulate their diffusion and contribution to improve education, health, environment, and the quality of life and well being of the general public.

This mission is mainly accomplished through the financing subsequent to the evaluation of the merit of proposals presented by institutions, research teams or individuals in public open calls, and through cooperation agreements and other forms of support in partnership with universities and other public or private institutions. The results of the activities of FCT are, in essence, the additional contributions of individuals, research groups and institutions who have been awarded financing.

It was within FCT's mission context that the FCT Information System was implemented by the end of the 90s with the aim at providing researchers and institutions with access to information relevant to their current relations with FCT. As the researcher's participation in submission processes (ex: applications to scholarships, grants for research projects, research units, publications, etc.) increases, additional options will be made available to him/her in the browser window providing access to elements relevant to the management of his/her different participations, such as applications results, report reports, etc., as well as news and FAQs. The ultimate goal of this tool was to make interaction between FCT and system users, essentially the scientific community in Portugal and abroad, more friendly and transparent.

A major feature of this database is its strict confidentiality, as long as there is no free, open access to researchers' electronic CVs. Furthermore, it is quite difficult to access it, bearing in mind that its low level of data standardisation does not allow any meaningful study regarding S&T indicators. It was also intended to remain active only for a short period, until the DeGóis Platform was operational. However, difficulties surrounding its technical definitions and implementation imply that the FCT Information System is still fully active; it currently covers more than 15,000 CVs.

Below you will find a global Curriculum Vitae overview, listing all its tables.

List of the tables of this form.

To update your data click on the link that appears on this list:

1. [Dados pessoais](#)
1. Personal data
2. [Formação académica](#)
2. Academic degrees
3. [Actividades anteriores](#)
3. Previous activities
4. [Área de actividade científica](#)
4. Area of scientific activity
5. [Actuais interesses de investigação](#)
5. Present research interest
6. [Experiência na orientação](#)
6. Supervising experience
7. [Participação em projectos](#)
7. Participation in research projects
8. [Prémios e distinções](#)
8. Prizes and Awards
9. [Publicações](#)
9. Publications
10. [Comunicações](#)
10. Communications
11. [Línguas](#)
11. Language skills

On the left side of the browser window one can find the Curriculum Vitae option that gives the researcher access to the tools needed to introduce and manage his/her résumé. Once introduced in the system it will be available to use in all applications and reports electronically submitted through the FCT website. For that purpose, all one needs to do is typing his/her **public key** before starting filling in the application form.

A.2. The DeGóis Platform

The DeGóis Platform is an instrument for gathering, supplying and analysing the intellectual and scientific production of Portuguese researchers. It consists of a portal having as main features the individual management of the curricular information, the visualization of national science and technology indicators and the search for curricula according to content related queries.

The DeGóis Platform is owned by FCT, part of the Portuguese *Ministério da Ciência, Tecnologia e Ensino Superior*. Through a protocol established with the Brazilian Science and Technology Ministry, the GAVEA laboratory from the Department of Information Systems of the University of Minho, and the STELA research group from the Federal University of Santa Catarina in Brazil, it provides the basic principles of the DeGóis Platform and establishes a legal-institutional framework in which the project will be developed.

FCT supports the development of the DeGóis Platform that offers more advanced functionality than its own FCTSIG system in what concerns curricula. Thus, in due time, the DeGóis Platform will replace the FCT Information System. It may even be used as an instrument for the international evaluation of Portuguese universities and other research institutions in the country.

There are currently around 5,000 CVs in the DeGóis Platform database. This is a (almost) fully public database, apart from some personal data that are not accessible. Furthermore, it displays a high level of data standardisation that will allow for meaningful studies regarding S&T indicators.

Below we will analyse in more detail the main features of the DeGóis Platform.

B. THE DEGÓIS PLATFORM

The DeGóis Platform is an instrument for gathering, supplying and analyzing the intellectual and scientific production of the Portuguese researchers. It consists of a portal having as main features the individual management of the curricular information, the visualization of national science and technology indicators and the search for curricula according to content related queries.

B.1. Owners and Coordinators

The DeGóis Platform is owned by FCT, part of the Portuguese *Ministério da Ciência, Tecnologia e Ensino Superior* that, through a protocol established with the Brazilian Science and Technology Ministry, the GAVEA laboratory from the Department of Information Systems of the University of Minho and the STELA research group from the Federal University of Santa Catarina in Brazil, provides the basic principles of the DeGóis Platform and establishes a legal-institutional framework in which the project will be developed.

B.2. Coordination of the DeGóis Project

- ▶ Council for Science and Technology (FCT)
 - Prof. Francisco Teixeira (vice-president)
 - Prof. João Palhoto Matos
 - Dr.^a Maria Flaminia Ramos
- ▶ GPEARI - Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais (former Portuguese Observatory for Science and Technology - OCES)
- ▶ GAVEA - Laboratory for Study and Development of Information Society (University of Minho)
 - Prof. Leonel Santos
 - Prof. Luis Amaral

B.3. Brief Historical Context

The DeGóis project began in 2001, initially developed by GAVEA, following a request issued by the OCES – Portuguese Observatory for Science and Technology. It gave continuity to the work started in 1995, in the context of the SICT (Sistema de Informação sobre Ciência e Tecnologia), aiming at the development of a scientific

platform that could provide for a systematisation of the information concerning researcher's individual paths.

In 2001, because of several contacts and some improvements implemented in the project, OCES found that it was important to invite GAVEA and other foreign organisations to become partners in the DeGóis project. Contacts were established with LATTES, in Brazil, through the CNPQ – Conselho Nacional de Desenvolvimento Científico e Tecnológico (National Council of Technological and Scientific Development), and they reached an agreement that allowed the use of the Brazilian LATTES platform after some adaptations to the Portuguese reality (there were not only significant linguistic differences between Portugal and Brazil but also different CV presentation cultures). In addition, this agreement required the involvement with the ScienTI network (*see next point*), in charge with the system's maintenance and continuous technological update, what came to happen in 2003.

This partnership with LATTES and ScienTI was of great importance for the development of the DeGóis project insofar as it enabled the sharing of technology and methodology. Nonetheless, at the same time, another European information platform named CRIS – Current Research Information System (*see next point*), was also emerging. Although CRIS and DeGóis both had similar objectives (the gathering of information in order to assist the shaping of S&T management and public policies), they differed on the data gathering sources: the former gathers its data from research projects and the latter from researchers' CVs. However, especially after a meeting between both working teams in 2005, both platforms share concern for keeping the data exchangeable and in accordance with several international S&T information standards.

B.4. Networks and Partnerships

ScienTI (www.scienti.net) is a public network of sources of information and knowledge that aims to contribute to the management of scientific, technological and innovation activities. The network provides a public and cooperative space for stakeholders of national science, technology and innovation (ST & I) systems and communities of the member-countries to interact. The network is the expression of international cooperation among the National Science and Technology Organizations (ONCYTs), International Science and Technology Cooperation Organizations (OICYTs), Groups of Research and Development in Information and Knowledge Systems (GDIs) and Sponsoring Institutions (SIs).

EuroCRIS (www.eurocris.org) is a not-for-profit association and aims to be the internationally recognized point of reference for all matters relating to Current Research Information Systems (CRIS). The association owns a trademark and registered Internet presence (www.eurocris.org) which also provides the official contact information. The association unites experts in the field of CRIS and through its strategic partnerships also all major stakeholders in the European research community, and brings its members biannual meetings, workshops, an annual seminar and every two years a conference, as well as on/line discussion forums with peers and publications.

At this moment, the DeGóis Platform is an important partner in both the ScienTi and the EUROCRIS networks that pertains to develop a European platform of CVS.

B.5. Current and Future Implementation

It is expected that in the near future (1-2 years) the DeGóis platform will replace the current FCT Information System, still in use by the Portuguese Council for Science and Technology, which has shown a number of shortcomings since the moment it was implemented, back in the 90s. In fact, it is confidential, the text is not standardised and it is hardly accessible for research, thus making it impossible to explore the richness of the data available on the researchers' CVs.

Nevertheless, the process of replacement has proven to be quite lengthy because there are several aspects to consider. First, there was also some delay caused by the adaptation of the Brazilian LATTES platform to the Portuguese scenario and because of the OCES statistical pre-requisites that took longer than expected to insert into the DeGóis platform.

The DeGóis platform is already an alternative platform for people applying for fellowships and research projects, and several efforts were made in order to obtain the universities' acceptance. Indeed, Portuguese universities as well as other research and/or scientific institutions can formally become, upon request, a member of the platform –there are around 30 R&D institutions that have already joined the platform. Being a member of the platform carries a number of “advantages” to these institutions i.e., they integrate the portal, creating a link to it, they have the possibility of producing indicators for the institution and for its researchers as well as of automatically obtaining the respective reports.

Moreover, any Portuguese researcher, regardless of working or not for an institutional member of the platform, can create a DeGóis curriculum. However, the filling out of the

DeGóis CV format is very time consuming and thus it may take some time for those scientists who already have filled a CV in the early system to migrate to the new system. It might therefore be useful for the FCT to establish a deadline for researchers to migrate their CVs from the FCT Information System to the DeGóis platform.

B.6. Some Important DeGóis Features

In order to use a sample for research purposes, a letter indicating the different criteria must be addressed to the coordinators/managers of the DeGóis platform.

All CVs in the DeGóis database are publicly accessible. Every CV is reachable through Google and can be copied and downloaded.

DeGóis allows the researcher on-line printing possibilities and to import and export data.

B.6.1. Evaluation - Monitorisation

At the institutional level, the DeGóis platform allows for an accurate search of specific scientific and technological production indicators. Scientific field, sectors (socio-economic objectives of each specific field), keywords, institution and degree of researchers classify this data. According to the team's viewpoint, this data can be particularly important for the research organisations: these indicators can be of use to the universities and other research organisations for its performance evaluation as well as for human resource management, supporting career evaluation, and promotion of its own researchers.

B.6.2. Interface

A DeGóis CV presents a friendly and uniform interface, compatible with other types of systems of data collection and commercial software.

B.6.3. Accuracy

The DeGóis platform has several mandatory fields that must be filled using a pre-determined terminology and, if missing or filled incorrectly, the system will acknowledge it and will ask for a correction before it allows the CV's submission.

The DeGóis platform emerged after a thorough analysis of several other platforms. Therefore, its authors tried to avoid the same early common mistakes and aimed to improve its flexibility quality. The structure and type of information provided by the platform is subject to a high standardization that implies a hidden, but as uniform as possible, work of categorisation. This means that although most part of the data is allowed to be shaped at the researchers' will, those fields regarded as fundamental to characterise the development in science and technology as well as those that can provide accurate information about the country's S&T are compulsory (in practice they cannot be left unfilled).

B.6.4. Confidentiality and Openness

Any researcher can access and register himself/herself into the DeGóis platform. The DeGóis project assumes the complete accessibility of the CV, the only exception being the identification data (identification card). The DeGóis working team explained that this principle is not easy to manage since there are different positions among individual researchers and policy officers regarding the need to maintain confidentiality.

With the objective of identifying the scientific domains of the researchers' work, the DeGóis platform allows for the establishment of relations between the scientific production and the Fields of Science established by the OECD (v. 2006). The use of an international standard makes it possible to compare the DeGóis curricula with other models coming from different scientific communities.

B.6.5. Visualisation of Curricula

In the section dedicated to visualising curricula, any registered user can perform CV searches by name, researcher's institution or region. Once one has selected the criteria, the system presents the relevant CVs that can be visualised in an HTML page containing all the information inserted into the CVs.

B.6.6. Impact Factor

At present, there is no information about the impact factor because there are difficulties in finding and classifying all the journals within each scientific field. This work is currently being done.

B.7. Curricula Content

The curricula management system (DeGóis curriculum) allows the researcher to insert his/her personal data, both personal and professional addresses, academic activities, spoken languages, prizes and awards, research fields as well as all other kinds of scientific production and detailed information about research projects in which he/she is currently engaged. It can also include information related to supervisions and jury participation.

Briefly speaking, we may point out that the DeGóis curriculum is structured in three modules:

General Data, that includes the researcher identification, professional and home addresses, academic background, professional background, scientific fields, spoken languages, and prizes and other awards

Production, including the researcher's scientific, technical, and artistic/cultural production, as well as his/her supervision activities

Projects, displaying all R&D projects where the researcher currently participates or has participated before

B.8. Research Indicators

The DeGóis platform enables anyone who accesses it to have online information about some Science and Technology indicators. This can be obtained either at an aggregate (the whole universe of CVs entered into the database) or at an individual (researcher) level:

At an aggregate level, the platform displays seven types of graphic:

- ❖ Researchers by gender and age
- ❖ Researchers by field of work
- ❖ Researches by academic level
- ❖ Researches by academic level and field of work
- ❖ Production by field of knowledge
- ❖ Production by field of knowledge and five-year period
- ❖ Production by type

At an individual level, a number of “Production Indicators” are automatically generated by the system and are placed at the bottom of each individual CV. These indicators act as a summary of a researcher’s scientific and/or technological production. Below there is an example of such indicators:

PRODUCTION INDICATORS

A. Scientific Production

B. Technical Production

C. Complementary Data

Scientific Production
Books and book chapters Edited or organized books Edited book chapters Papers in journals (with scientific refereeing) Papers in journals (without scientific refereeing) Papers in conference proceedings (with scientific refereeing) Papers in conference proceedings (without scientific refereeing) Texts in periodicals or magazines Texts in newspapers Other scientific production
Technical Production
Other technical production
Complementary Data
Other technical production Supervisions Other production Participation in academic degrees jury Participation in evaluation committees Participation at events

Finally, the DeGóis curriculum allows for an accurate quantitative calculation of several indicators, namely:

- ❖ Scientific production
- ❖ Technical production
- ❖ Artistic and cultural production
- ❖ Artistic and cultural production description
- ❖ Supervisions
- ❖ Participation in academic juries and other academic events
- ❖ Participation in evaluation committees
- ❖ Participation in other juries
- ❖ Participation in events and scientific meetings

C. A FINAL SUGGESTION

The DeGóis curriculum carries more information than the template presented by Carolina. Thus, in the next table, we show (in green) all the fields present in the DeGóis curriculum – and that do not figure in the Spanish template - that might produce relevant R&D indicators, if deemed relevant and of interest

Characterisation		Visiting Scholarships		Books		Research Grants	
Age / Date of Birth	1	Organisation	1	Title	1	Title	1
Gender	1	Starting Date	1	Author(s)	1	Amount	1
Marital Status	0	Finishing Date	1	Year	1	Coordinator	1
Discipline	1	Country	1	Number of			
Citizenship	1			Pages	1	Country	1
Business Address	1			ISBN	1	Funding Org.	1
Children	0			Place	1		
Full Name	1			Editor	1		
Name in							
Bibliographical							
References	1						
Homepage	1						
Academic Degree	1						
Starting Date	1						
Finishing Date	1						
Title	1						
Institution	1						
Complementary							
Studies	1						

R&D Activities		Job Positions		Book Chapters		Supervised PhD	
Group of Research Starting Date Finishing Date Research Fields Research Project Reference Research Project Title Research Funding Body Research Partners	1	Organisation Starting Date Finishing Date Country Designation	1 1 1 1 1	Title Book Author(s) Year Number of Pages ISBN Place Editor	1 1 1 1 1 1	Organisation Name of Student Discipline Country Grade	1 1 1 1 0
Teaching Activities		PhD Degree		Articles		Patents	
Starting Date Finishing Date Course Lectured Discipline		Organisation Date Country	1 1 1	Title Journal Author(s) Volume Year Month Number of Pages ISSN Impact Factor Link to download	1 1 1 1 1 1 1 1 0 1	Number Date Country Description	1 1 0
Commissions, Councils and Consultancies		Other Technical / Scientific Activity		Scientific Memberships		Oral Work Presentation	
Starting Date Finishing Date Activity		Starting Date Finishing Date Activity				Title Place Year/Date Chairman Member of Scientific Committees	
Participation in Juries							

D. SOURCES OF INFORMATION

The document produced herein was based in several information sources:

WEB PAGES:

- * The DeGóis Curricula Platform - <http://www.degois.pt/index.jsp?lang=en>
- * The FCT Information System - <http://www.fct.mctes.pt/fctsig/>

INTERVIEWS:

- * With a former high-level public officer from FCT, who was involved in the implementation process of the FCT Information System
- * With a university researcher, who is currently deeply involved in the standards definition and in the implementation process of the DeGóis Curricula Platform