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UNIVERSITY OF PORTO: INFORMATION MANAGEMENT AND APPRAISAL

Izvleček:

Univerza v Portu: upravljanje s podatki in valorizacija

Glavni cilj članka je predstaviti integriran model upravljanja s podatki, ki ga želi uvesti Univerza v Portu in deliti izkušnje, ki so jih pridobili z novim teoretičnim pristopom, ki predvideva valorizacijo kot metodološko operacijo znotraj tehničnega pola štiripolne raziskovalne metode v informatiki. Leta 2002 so bili izidi raziskave, ki jih je dal nov pristop, odobreni s strani telesa, ki na Portugalskem koordinira arhivsko politiko, Generalne direkcije za arhive, ki spada pod Ministrstvo za Kulturo. Teoretične osnove, ki jih je prevzela Univerza v Portu, in ki so precej drugačne od tradicionalno uporabljenih in ki bazirajo na delitvi »administrativna ali primarna vrednost« in »zgodovinska ali sekundarna vrednost«, se osredotočajo na podatke in kažejo na niz parametrov in kriterijev, torej na tri glavne parametre analiz: 1) primernost podatkov v kontekstu ustvarjalca (v primerjavi z zakonskimi cilji organizacije); 2) podatkovna teža serij zapisov, primerjava med izdelanimi serijami in njihovimi podatkovnimi odnosi; 3) pogostost uporabe podatka, ki je bil analiziran.

Ključne besede:

vrednotenje, informatika, upravljanje s podatki, Univerza v Portu.

Abstract:

University of Porto: Information Management and Appraisal

The main purpose of this paper is to present the University of Porto's perspective regarding an integrated information management model directed at the challenges and needs of the Information Era and to share the experiences carried out under a new theoretical approach that assumes Appraisal as a methodological operation inserted within the technical pole of the Quadripolar Research Method in Information Science. In 2002, the appraisal results, obtained under this new approach, received approval from the body that, in Portugal, coordinates archival policies, the Directorate-General of Archives under the Ministry of Culture. The theoretical basis adopted by the University of Porto, quite different from the model traditionally advocated based on the dichotomy "administrative or primary value" and "historical or secondary value", is focused on information and points to a set of parameters and criteria, namely the three main parameters of analysis: 1) The pertinence of the information in the context of the entity that generated it (compared with the statutory objectives of the Organisation); 2) The informational density of series of records, comparing produced series and their informational relations; 3) The frequency of use of the information being analyzed.

Key words:

appraisal, information science, information management, University of Porto.

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1. INFORMATION SYSTEM OF THE UNIVERSITY OF PORTO - DEVELOPMENT OF ITS INTEGRATED MANAGEMENT

1.1 INSTITUTIONAL FRAMEWORK

Although the roots of the University of Porto¹ can be traced back to the 18th century,² it was formally founded on 22 March 1911, by a decree of the Provisional Government of the Portuguese Republic.³ As it approaches its one hundredth anniversary, the legal system of the University of Porto was amended by Decree 96/2009, of 27 April: the public institution became a public foundation operating under private law, under the framework of the new Legal System for Higher Education Institutions,⁴ the statutes of which are contained in the Official Journal, 2nd Series, no. 93, of 14 May 2009, providing for its statutory, pedagogical, scientific, cultural, administrative, financial, economic and disciplinary autonomy.

Formed by 14 learning institutions (faculties) and about 70 research units, the University of Porto (U.PORTO) offers a number of varied courses, covering all levels of higher education and all the major fields of knowledge. The University is attended by about 30,000 students, and has a staff of 2,280, including teachers and researchers (1,895.8 full-time staff teachers) and 1,689 non-teaching staff (1,685.3 full-time equivalent). With over 670 training programmes, including undergraduate courses, masters, integrated masters, PhDs, continuous training courses and specialisation courses, the U.PORTO has teaching solutions for all.

The U.PORTO facilities are scattered over the city of Porto. The university buildings - faculties, R&D institutes, students' halls of residence, cultural and sports facilities - are grouped in three areas called "Campuses". "Campus 1" is located in the centre of the city - where the Rectorate building marks the birth of the University; "Campus 2", known as "Asprela Campus" lies to the north of the city; "Campus 3" is found in Campo Alegre, in the southwest area of Porto, not far from "Campus 1". A number of institutes and centres are scattered over the city and even beyond its geographical boundaries.

The size and complexity of such an organisational macro-system alone are sufficient to illustrate the range of an *organisational information system* with a wealth of diversified production, entailed by the activities conducted by the various organic units comprising U.PORTO, as well as intricate and multiple internal and external flows and agents involved. Furthermore, in ever increasing e-production contexts, information in analog media coexists and interrelates with born-digital information. As such, the organisational information system reflects the complexity of the organic and functional structure and of the production processes, as well as the hybrid nature of information produced and accumulated in terms of its media, encompassing educational, scientific, technical, cultural and, obviously, administrative and management activities.

¹ Cf. <http://www.up.pt> and http://sigarra.up.pt/up/web_page.inicial.

² Cf. http://sigarra.up.pt/up_uk/WEB_BASE.GERA_PAGINA?p_pagina=122251.

³ Decree / Ministry of Internal Affairs. Directorate General for Secondary, Higher and Special Education. Foundation of the universities of Lisbon and Porto.

⁴ Law 62/2007, of 10 September.

1.2 FROM THE CENTRAL ARCHIVES TO THE INFORMATION MANAGEMENT UNIT

Since its foundation, the management bodies of the U.PORTO and the services supporting the Rector and other central services, transversal to the University, were first located at the Rectorate of the University of Porto.⁵ Set up since 1911 in the building of the Polytechnic Academy,⁶ a higher education school that preceded university education in the north of the country, the Rectorate was struck by a devastating fire a few days before the Revolution (1974) that brought the dictatorship in Portugal to an end⁷. The loss of information was considerable and a significant part of the University of Porto's memory was lost, too.

After several changes, for instance the occupation of provisional facilities and two other tragic fires that devastated the buildings - and, therefore, the respective "archives" - of two of the University's faculties,⁸ the Rectorate of the U.PORTO set off on an irreversible path in terms of handling the information produced and accumulated in the context of the university system and its integrated management.

In 1996, the management bodies of the University finally awakened to the crucial difficulties that affected information management.

In the late 1990s, the first steps were taken to set up the *Rectorate Central Archives*, which took place formally in 2001.⁹ The legal diploma established the powers in terms of design, handling and dissemination of information on paper format or in any other type of format, produced by the organic units of the Rectorate and Central Services of the University of Porto, and the management coordination of information produced and accumulated by such services. However, the Central Archives' scope of intervention turned out to be far more comprehensive than initially foreseen, as it was extended to the Organic Units/Faculties and to other units of the University of Porto with which the Rectorate has privileged institutional relations.¹⁰

The restructuring of the U.PORTO central services was carried out in 2006 after the new government bodies took office and focused on promoting and expanding the use of Information and Communication Technologies (ICT) to all organisational activities, and encouraged the development and the adoption of innovative services.

The *Archives* functional area became part of the Digital University,¹¹ a department in charge of managing a large number of resources and services in the U.PORTO campus, namely technological infrastructures, new technologies in education and information systems and applications. Furthermore, the former Central Archive, now known as *Information Management Unit*,¹² is responsible for managing information in the systemic universe of the University, having been entrusted with new and overarching responsibilities, as confirmed by the Mission assigned to the new Digital University Unit: to promote an appropriate information

⁵ Cf. http://sigarra.up.pt/reitoria/web_page.inicial.

⁶ Cf. http://sigarra.up.pt/up_uk/WEB_BASE.GERA_PAGINA?p_pagina=122251#politecnica.

⁷ The fire broke out on 20 April 1974.

⁸ The fire at the Faculty of Pharmacy - http://sigarra.up.pt/ffup/web_page.inicial - occurred in 1975, and the fire that struck the Institute of Biomedical Sciences Abel Salazar - http://sigarra.up.pt/icbas/web_page.inicial - happened in 1992.

⁹ Resolution 97/2001 (2nd series), of 31 July (DR, 2nd series, no. 196, p. 14.375-14.385).

¹⁰ Cf. http://sigarra.up.pt/up_uk/WEB_BASE.GERA_PAGINA?p_pagina=1001245.

¹¹ Cf. http://sigarra.up.pt/reitoria/unidades_geral.visualizar?p_unidade=5.

¹² Cf. https://sigarra.up.pt/reitoria/unidades_geral.visualizar?p_unidade=223.

management policy, transversal to the U.PORTO, aiming to guarantee that the information produced, received and accumulated in the course of the activities would effectively and efficiently support regular organisational management, and that pertinent and dense information, which will be preserved as the institution's memory, is quickly and continuously accessible.

As matters related to the production and dissemination of the University's scientific production became increasingly more relevant, the Unit's responsibilities were broadened and came to include, in partnership with other Units of the Digital University Department, the coordination and management of organisational processes related to support in producing and recording scientific information by the academic community. This also included its ingest, storage, management and dissemination through the U.PORTO Repository.¹³ As such, functions were no longer limited to the simple collection of master's and PhD theses resulting from an educational/administrative process to obtain academic degrees, but rather followed a logic of integrated management encompassing the entire cycle of production and dissemination of all types of information.

1.3 FROM ARCHIVES MANAGEMENT TO INFORMATION MANAGEMENT

This organic and functional development implied compliance with a number of phases, given particularly the disorganized state of the archives and precarious facilities. These included a survey of the stored information, the development of the first archival finding aids, drawing up norms and regulations applicable to access and use, loan and reproduction and also the optimization of computing resources.

At the same time as information produced by the Central Services was being processed, the Rectorate's Central Archives together with the U.PORTO units, especially the Documental Sciences Section of the Faculty of Arts and Humanities¹⁴ on account of its role in promoting and coordinating the work then conducted, carried out several studies as part of research projects,¹⁵ which secured the scientific nature of the theoretical and methodological assumptions tested and implemented immediately afterwards.

- ***Functional organic study***

The first study aimed to obtain diachronic knowledge of U.PORTO's organic and functional structure since its foundation (1911).¹⁶ The work required a survey and analysis of the laws and regulations approved to govern the University's organic structure and to define the roles and powers conferred on the different bodies and services, in addition to identifying internal normative texts and other additional information that could complement the information acquired.¹⁷

¹³ Cf. <http://repositorio.up.pt/>.

¹⁴ Cf. http://sigarra.up.pt/flup/web_page.inicial.

¹⁵ Cf. http://sigarra.up.pt/up/web_base.gera_pagina?P_pagina=1000553.

¹⁶ FERNANDES, Eugénia; RIBEIRO, Fernanda - *Universidade do Porto : estudo orgânico-funcional : o modelo de análise para fundamentar o conhecimento do Sistema de Informação Arquivo*. Cf.: <http://www.loja.up.pt/produtos/produto.php?id=187>.

¹⁷ This study, covering the period between 1911 and 1999, provides evidence on the development of the organic and functional structure of the Rectorate and of five Faculties of the U.PORTO. Research for information carried out at a later date, focusing on more recent years, was based on the model presented in this study. As such, we

Having published and disseminated this work and the methodology used to produce it, the U.PORTO was now equipped with the necessary instruments to comprehensively frame the information produced and accumulated in the course of its organisational activities. Through this study, it was also possible to appraise such information in terms of objective factors, among which is the *pertinence* of informational contents in view of the Mission and Objectives of the producing institution, and its respective *density*. Further to the much-wanted objectivity of criteria, the legal grounds were established to decide on the final destination of information. In the short term, the organic-functional study served to make the proper decisions on the production, integration, control, storage, access and destination of information, but also on the most appropriate system to manage such information in an integrated way.

One of the dimensions that gradually gained importance consisted of the survey and representation of organisational processes (activities, tasks, agents and information produced/accumulated) related to U.PORTO's central and transversal organisational structure. A systemic and comprehensive approach was thus ensured, essential to structuring the work developed and to be developed. From that time on, attention could be focused on the info-communicational process within the institution and between the latter and its surrounding environment.

The Process Manual,¹⁸ available in the ICT Portal of the U.PORTO¹⁹ since the end of 2008, offers information on this component.

- ***The SIGARRA information system***

During 1996, the U.PORTO's investment in developing computer and organisational components for an information system were able to respond to the increasing needs of a modern University gained form and consistency. This investment was the result of a consistent long-term strategy begun at the Faculty of Engineering of the University of Porto (FEUP).²⁰

The SIGARRA - Information System for the Aggregated Management of Resources and Academic Records - is an integrated information system to facilitate the production, flow, storage and access to information relevant to the institution, of a pedagogical, scientific, technical and administrative nature, and to streamline internal cooperation, and cooperation with the external academic and business communities. As the base platform for the management of information at the U.PORTO, the system interacts with other applications and systems within the University, such as library, e-learning, student and financial management systems and the U.PORTO Repository (DSPACE platform), among others.

The importance of this system for the entire academic community at the Faculty of Engineering, and the acknowledgement it obtained, not only by this Faculty and the U.PORTO, but also at national and international level - winning the

guaranteed the recording of the mass produced information at the GISA (Integrated Management of Archive Systems) database, with proper institutional framework (<http://gisa.up.pt/pesquisa>).

¹⁸ Cf.: http://sigarra.up.pt/up/web_base.gera_pagina?P_pagina=1000323.

¹⁹ Cf.: http://sigarra.up.pt/up/web_base.gera_pagina?p_pagina=2396.

²⁰ RIBEIRO, Lúcia M.; DAVID, Gabriel; AZEVEDO, Ana; SANTOS, J. C. Marques - Developing an information system at the Engineering Faculty of Porto University. In *Proceedings of the EUNIS 97 - European Cooperation in Higher Education Information Systems*, ed. Yves Epelboin and Jean-François Desnos, 282-287. Grenoble, France. <http://hdl.handle.net/10216/606> (accessed January 4, 2010).

Descartes SMA Prize 1998, by the Computer Institute, and the EUNIS *Elite Award* 2000, by the European University Information System (EUNIS) -, led to an information system project within the *campus* of the U.PORTO in 2003, and it is now used by all faculties.

At the end of 2009, the SIGARRA Information System offered a new module for the integrated management of information received and sent by the U.PORTO in the form of digital documents (scanned or born digital), based on a joint initiative between the Information Management Unit and the Faculty of Arts and Humanities of the University of Porto.²¹ At the present moment, its implementation in the U.PORTO Rectorate covers all services and will gradually be extended to other University faculties and units.

The design and development of this new SIGARRA component were grounded in several needs, among which the need to dematerialise organisational processes, to integrate different means of creating/receiving documents in a ready to use way, to control the production and flow of information, to improve the sharing, use and retrieval of information, to guarantee the long-term preservation of relevant and dense information and, last but not least, to reduce costs and storage spaces.

- ***The GISA computer application***

From 2003 on, the University of Porto strengthened its collaboration in the working group formed by the members of the consortium set up to develop the GISA computer application (acronym for Integrated Management of Archive Systems), in which the Porto City Hall and other City Halls within the metropolitan area of Porto participate.

GISA is an application designed to record, manage and make accessible information produced within the organisational context, and includes modules for Authority Control (of producers, contents and types of information), the Survey and the Management of Physical Units, and Information Classification, Description and Appraisal. It also includes association and access to digital images. Also used by the Faculty of Engineering²² and by the Faculty of Arts of the University of Porto, in 2004, GISA was installed in the Rectorate's Central Archives, incorporating pre-existing descriptive metadata.

At the end of 2004, the Rectorate's Central Archives carried out the first significant experiment with the digitisation of documents through certain media transfer operations for thousands of drawings of architectural and engineering projects.²³ The main goal was to make the information produced and preserved by the U.PORTO available on the Internet, as this is the only way to overcome the limitations imposed by geographical distance, by problems related to the handling of certain media and also due to the state of preservation of some of the documents, worn by time and use.

²¹ Under the SI@P-FLUP Project (2005-2008) coordinated by Prof. Fernanda Ribeiro, of the Degree in Information Science, and targeted at the implementation of the AP-IS operational model (Active and Permanent - Information System), which entailed a survey on organisational processes and the specification of requirements for the development of an application of e-Document Management. The Faculty of Engineering of the University of Porto (FEUP) contributed to the application's development.

²² Cf. http://www.fe.up.pt/si/web_page.inicial.

²³ Cf. http://arquivo-digital.up.pt/proj_inst/index.html.

The construction of a digital archives seemed to be the only solution capable of guaranteeing successful online access to information contents to be disseminated. The software used was the GISA application, and the SIGARRA system of the U.PORTO provided the computer platform required for the Web interface.

2. APPRAISAL OF INFORMATION AT THE U.PORTO

2.1 APPRAISAL: A NEW APPROACH

At about the same time that the organic-functional study was taking place, the Rectorate's Central Archives and the Documental Sciences Section of the Faculty of Arts and Humanities of the University of Porto designed and tested a theoretical proposal based on the assumption that information use is indispensable for current and future management purposes and for the development of studies on the history of the institution²⁴ - it is the pertinence of the information produced in the pursuit of the goals/aims guiding the Mission of the entity producing the organisational information system that justifies its preservation (permanent retention).

Appraisal "is understood not as a technical and practical procedure" and an end in itself "but as a methodological operation, applied to information in any context of production and use, in the scope of Information Science."²⁵ This positioning is in agreement with the scientific-informational and post-custodial paradigm,²⁶ which assumes that information is the object of study and appeals to complex and systemic thinking. In this context, *Information Appraisal* cannot be "disconnected from a broader Method - the Quadripolar Method -, which associates the comprehensive and scientific approach to the applicational or technical ones, as it is convenient to a discipline such as Information Science, within the field of the applied Social Sciences."²⁷ *Appraisal* is, thus, a methodological operation that falls within the technical pole of the *Quadripolar Research Method* in Information Science,²⁸ which seeks to broaden knowledge of the organisational information system from both a retrospective and prospective standpoint, highlighting the inevitability of binding the information to its original or root context (since it provides it with meaning) and the need to preserve real information in an organic sense; in other words, pertinent and dense when viewed against its vitalness for the organisational management and operation of the present and the future, and for the needs of both internal and external users. Appraisal, systemic approach, system and memory cannot, therefore, be dissociated and underpin the success of the three-pronged trinomial: objectives, organic-functional structure and memory.

The results of the implementation of this new *Appraisal* proposal have obtained the approval of the former National Archives Institute/Torre do Tombo, now known as Directorate-General of Archives, which is the coordinating entity of the National

²⁴ FERNANDES, Eugénia, RIBEIRO, Fernanda - *O Sistema de Informação Arquivística da Universidade do Porto: potenciar o uso da memória informacional retro-prospectivamente*. pp.79-99.

²⁵ Silva, Armando Malheiro da; Ribeiro, Fernanda: *Perspectivar a avaliação como operação metodológica no âmbito da Ciência da Informação*. pp. 246-261.

²⁶ See the theoretical study in: SILVA, Armando Malheiro da; RIBEIRO, Fernanda - *A avaliação em arquivística: reformulação teórico-prática de uma operação metodológica*. pp. 57-113.

²⁷ Silva, Armando Malheiro da; Ribeiro, Fernanda: *Perspectivar a avaliação como operação metodológica no âmbito da Ciência da Informação*. pp. 246-261.

²⁸ This Method is "based on four poles or elliptical stages: epistemological pole, theoretical pole, technical pole and morphological pole". See: Silva, Armando Malheiro da; Ribeiro, Fernanda: *Perspectivar a avaliação como operação metodológica no âmbito da Ciência da Informação*. pp. 246-261.

Archives. Implemented first within the organic and functional context of the U.PORTO Rectorate, it was later adopted by the Organic Units of the University, such as the Faculty of Engineering, and by adjoining bodies of the University, for example the Porto University Sports Centre (CDUP).

2.1.1 THEORETICAL ASSUMPTIONS

This new Appraisal approach assumes that:

- a) Information Appraisal is a methodological process that seeks to obtain knowledge on information as a strategic and social asset and the proper running of the Information System in its genesic (production) phase. According to this perspective, much more is implied than just a simple technical procedure, proprietary to the Archive functional area, which is normally distant from the information-generating entities;
- b) Information Appraisal aims to capitalise the information produced, with the exception of marginal, peripheral and/or redundant information, which can be eliminated after the authoritative and precautionary deadlines have expired. We are, therefore, dealing with an operation that broadly exceeds the goal of selecting information to be preserved or eliminated, and is seen as essential in comprising the Active and Permanent Information System (AP-IS)²⁹ on which all efforts will be focused to ensure its preservation in the long term and its continuous access;
- c) All decisions concerning the preservation of information in the long term should be governed by both the need to make it operational to the organisational management service in present times and by the need to preserve the institutional memory and intellectual production of the U.PORTO and its communities.

2.1.2 CRITERIA

In order to apply appraisal, in an objective manner, a set of *Parameters* and *Criteria* was proposed by this new approach, “taking into account the information’s life cycle, the renewal and obsolescence of knowledge and the importance of memory for the long-term preservation of informational products.”³⁰ This application will provide the guarantee that the *preserve* option (permanent retention) will be centred on pertinent and dense information. The referred parameters and criteria are:

Parameter 1 = Pertinence of Information: It establishes the proximity of information to the primordial/statutory objectives of the organisation;

Parameter 2 = Density of Information: It identifies the informational units in which the more complete and dense information is found;

²⁹ A systemic and integral model of information management proposed in PINTO, Maria Manuela Gomes de Azevedo; SILVA, Armando Malheiro da - Um modelo sistémico e integral de gestão da informação nas organizações. See also PINTO, Maria Manuela Gomes de Azevedo - Information Management : a Systemic Model. [Online]. [Accessed on 20 Jun. 2007]. Available at [www:<url:http://socialstudies.cartagena.es>](http://socialstudies.cartagena.es).

³⁰ Silva, Armando Malheiro da; Ribeiro, Fernanda: *Perspectivar a avaliação como operação metodológica no âmbito da Ciência da Informação*. pp. 246.

Parameter 3 = Frequency of Use of the Information: It quantifies the use of information by producing and/or proprietor services, in both the genesis phase and in later stages, and by external researchers and the surrounding community.

Parameter 1 - *Pertinence of Information* - is split into three hierarchical levels:

- **Level A:** This level corresponds to a direct relation between the informational acts and the institution. This means that the information said to be of Level A meets the essential, and even perhaps unchangeable, objectives/aims of the institution;

Weight: 1 (one)

- **Level B:** This level refers to the information that, given its contents, proves to have an indirect relation with the objectives followed by the institution. Generally speaking, this information stems from the management functions of the producing body, or to put it differently, it reflects the activities that allow the institution to follow through its Mission and Objectives;

Weight: 1 (one)

- **Level C:** This level refers to information with a peripheral relation to the statutory objectives of the institution. In other words, the information produced and accumulated from a marginal point of view to the institution's objectives and to the management operations, relating mostly to redundant information.

Weight: 0 (zero)

Parameter 2 - *Density of Information* - It measures (or appraises) the density of informational contents under analysis. For this purpose, we have to establish informational relations:

- Between informational units with primary information (possibly with a duplicate or copy);
- Between informational units with primary information and informational units with primary information in duplicate;
- Between informational units with primary information and informational units with split, abridged or cumulative secondary information;
- Between informational units with secondary information (split, abridged, cumulative or duplicate) and units with primary information;
- Between informational units with secondary information (split, abridged, cumulative or duplicate) and units with secondary information and/or duplicate secondary information.

Weight: 1 (one) = More dense information

Weight: 0 (zero) = Less dense information.

Parameter 3 - *Frequency of Use of the Information* - It quantifies the rate of use of information by the producing and/or proprietor services - in both the genesis phase and in later stages - and by external researchers and the surrounding community.

- Maximum and average use = once or more than once a week
Weight: 1 (one)
- Minimum use = less than once a week
Weight: 0 (zero)

With regard to the possible final disposition options of the information produced and accumulated by an institution, we have considered in the appraisal decision, two possible destinations:

- 1) **Preserve (Archive)**, also called permanent retention, which presupposes retaining the integrity of the information in the long term, regardless of the media in which it was stored;
- 2) **Eliminate (Destroy)**, after a variable period of time, depending on compliance with a legal time schedule, but also of its use for the producing institution.

The implementation of the criteria described above suggests that:

- **Permanent retention** always takes place whenever the informational acts fall under levels A or B, regardless of the frequency of use.
- **Elimination** always takes place whenever:
 - The information is relevant for the purposes of the institution and less dense in terms of its contents, regardless of its frequency of use;
 - The information is not relevant for the objectives of the institution and is insufficiently dense from the point of view of its contents, regardless of its frequency of use;
 - The information is marginal or peripheral to the pursuit of the institution's objectives, regardless of its density and the frequency of use.

2.2 APPLICATION RESULTS

The results of the application of this new Appraisal proposal, as we have already mentioned, were validated in 2002 by the National Archive Institute/Torre do Tombo (nowadays DGARQ). The information under analysis, recorded on paper format, was produced and accumulated by the U.PORTO departments that manage human resources and academic affairs at central level. In the analysis process tables were produced depicting the organic and functional context (objectives, organic and functional structure, competencies, activities and informational series and/or informational typologies) and comparative analysis grids of informational series (considering information under analysis, related information, parameters and criteria and the resulting final decision) that supported the subsequent preparation of the information retention and disposition schedule to be submitted for approval.

The entire process has been implemented with the agreement of the information producing services. The final destination given to each informational series is the result of a coordinated action between the U.PORTO Rectorate Services/Units and the Information Management Unit.

With regard to the Organic Units, the Faculty of Engineering of the University of Porto, under the coordination of the Rectorate Central Archive, presented in 2003 to the IAN/TT (National Archive Institute/Torre do Tombo) a proposal on an information

retention and disposition schedule for informational production issued from counterpart organic-functional sectors.

Information appraisal, which is normally carried out at a much later stage than the production phase (wrongly and more often than would be desirable by experts not familiar with the contextual environment) often causing the loss of linkage to the original production context, became in the U.PORTO an operation that occurs precisely during its genestic phase. Information Appraisal now assumes its rightful place in the informational management cycle, similarly to the modern and competitive organisations that manage their information resources in an integrated manner.

3. WORK IN PROGRESS AND FUTURE PROSPECTS

Information appraisal generated within the U.PORTO has become progressively more complex as the institution develops, the traditional medium used to record information is replaced by digital media, the technological platforms supporting the production, flow, storage and access to information are disseminated and the digital repositories tend to proliferate.

In this context, interaction with the producing services has likewise increased. The U.PORTO Rectorate Services/Units with which the Information Management Unit has interacted within this appraisal process have, for some time now, been able to refer to the guidelines contained in the Process Manual, which offers counseling on an information retention and disposition schedule and on how to organise the information produced and received, taking into account, precisely, its final disposition options.

Nevertheless, the work developed has progressed even further. By contributing to the detailed characterisation of the activities and tasks developed by the distinct participating departments, the mapping of organisational processes has become a gain in terms of information appraisal and disposition, and in determining its final destination. It has shown that a significant part of the redundant information in the U.PORTO's organisational information subsystems already mapped is the result of duplication processes arising from the hybrid nature of the information production contexts.

In fact, if, on the one hand, the impact of the computerising process renders the analysis more complex, driving us nowadays to follow hybrid flows and flows that are developed simultaneously, on the other hand, it reveals pre-existing duplications (even in analog media) when the analysis of subsystems is intersected with an analysis of the U.PORTO information system. These findings allow us to consider, with a higher likelihood of success, the possibility of developing appraisal processes at the level of organic subsystems, and a "macro-appraisal" at the level of the U.PORTO.

The strategy in progress, which relies wholly on the work developed at the level of the integrating platform implemented at the U.PORTO, the SIGARRA system, points to and is materialised through effective efforts of integrated information management near the producers, accompanying the development of the technological platform, prior to the informational production itself.

Furthermore, an investment is being made in standardising procedures and producing organic-functionally based classification plans that take the organisational

whole into consideration, and that are gradually being incorporated into SIGARRA (for example, in the new component mentioned before). This parameterisation assumes not only interaction with other support applications (such as students or entities management), but also with applications such as GISA, in terms of authority control, generation of reference codes and even the definition and execution of the information final disposition decisions as soon as the administrative procedures are completed. This activity is also reflected in the implementation of more reliable and powerful centralised data storage systems.

This strategy is complemented with investments made in the meantime in the management of the University's Institutional Repository (U.PORTO Repository), set up in 2007, which encompasses the *Open Repository*³¹ (offering open access to scientific information in accordance with the Open Access policies) and the *Thematic Repository*³² (in which the information is organised into themes, the access of which is, at times, restricted), and caters for an envisaged "master" level entitled *Organisational Repository*.

The Organisational Repository will shape the AP-IS and include relevant and dense information aligned for long-term preservation, properly triaged through an appraisal and validation process. This process will be needed for the purpose of access and use requirements, for authenticity, reliability and integrity attributes, and also for intelligibility requirements needed by digital information (especially scientific information), in a long-term and continuous access perspective, as we can clearly see in the suggestions of a model such as the OAI (Open Archival Information System) at the level of *Representation information* (for the *Content Information Metadata*), aligned with the objectives of the "designated communities".

The above perspective is possible because *Preservation* is here assumed as a variable in information management³³ and a part of the information management life cycle, which will strongly impact on the implementation and development of the actual appraisal parameters specified in the appraisal approach thus presented. They cannot also disregard the introduction of analysis variables that stem from the multiple dimensions of information units produced in digital media, if we consider not only its physical dimension but also the logical, conceptual and essential dimensions.

The strategy outlined stems from and reinforces the propositions of the appraisal approach implemented, among which the following are highlighted:

- The approach focused on information and its properties;
- The valuation of the structuring action that gives rise to and shapes information;
- The dynamic inclusion of the production of information in the producer's internal and external context, either individual or collective, but always taking into account the complexity of the info-communicational process;
- The failure to establish differences according to the nature of the media used.

³¹ <http://repositorio-aberto.up.pt/>.

³² <http://repositorio-tematico.up.pt/>.

³³ Cf. PINTO, Maria Manuela Gomes de Azevedo Pinto - *Gestão da Informação e Preservação Digital : uma perspectiva portuguesa de uma mudança de paradigma*. pp. 273-298.

In this context, we can therefore state that the digital context that currently characterises the U.PORTO has contributed to validating and consolidating the presented appraisal approach and the development of an integrated information management model, in a dynamic that is reflected on the working groups and on the research projects in progress.

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