EUROPEAN PROJECT FIGARO TO BUILD PLATFORM FOR EASY – 'EQUITABLE ACCESS TO SCIENTIFIC YIELD'© - SCHOLARLY COMMUNICATION AND PUBLICATION

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Abstract
Parented by the Dutch Roquade initiative and German Academic Publishers, a Europe wide group of actors in the sphere of open academic publishing federated around an ambitious project under the name FIGARO. A business model for an open publication platform will be developed and implemented. It is based on a three-layer model of a back office, a circle of front offices and a multitude of publishing initiatives within academia. FIGARO's cohesion is mission based, but will be consolidated in practical arrangements and formal contracts. Document-oriented tools and workflow-oriented tools will be acquired or developed, implemented and thoroughly tested, based on non-proprietary open standards. Procedures and manuals will be worked out. The platform will be operational at the end of 2004 and will demonstrate a number of publication products. The European Commission has appropriated a considerable grant to the project.

Motivation
On October 16, 2001, a consortium of European universities together with a couple of small private academic publishers, a medium software house specialised in e-publishing IT-services, a big research cluster in civil engineering and SPARC submitted an ambitious project named FIGARO to the European Commission.

The project should be carried out in the framework of the specific programme for research, technological development and demonstration on a user-friendly information society (1998-2002), the so-called "IST Programme" of the Fifth Framework.

The project's mission read: "The overall goal of the FIGARO proposal is to provide the technically innovative implementation of a federated business process for re-use by academic publishing institutions (…).
The aim is to enable academic publishers to enter competition and to diminish the monopoly-like position of the few dominating commercial players without, however, threatening the role of SME's as working partners of academic publishers. FIGARO will therefore bring together non-profit academic publishing institutions and partner-SME's as well as establish strong links with similar initiatives as mentioned above.

The key notion with respect to this overall goal is federation of existing and emerging forces and initiatives within an open networking framework as opposed to the building of a highly centralised, single-platform super-organisation."

It took another half a year of presenting, explaining, negotiating, fine-tuning and formalising the plan before the 1.1 million dollar grant was finally appropriated and the project kicked off on May 6, 2002. An exciting aspect was the EC's approval of a project so outspoken with respect to the role of the big publishing monopolies. Whether these publishers were not aware of the project or their ubiquitous lobby was not effective this time, we don't know. The fact is that the Commission approved a plan that stated openly in its introduction:
"The so called „journal crisis" deplored by scientists and librarians alike over the past years has turned into an overall crisis of scholarly information supply.
The symptoms are well known:
❏ The monopolistic pricing strategy of a few powerful scientific publishers is radicalised and transposed to models of digital information supply;
❏ Concentration is constantly increasing along with global merging activities, the most recent example being the acquisition of Harcourt, Academic Press and others by Elsevier;
❏ Libraries are compensating annually rising prices for subscriptions of STM-journals by cancelling other journal subscriptions and reducing acquisition of monographs;
❏ Scientists deplore the continuously degrading information supply as well as long and cumbersome publication cycles imposed by major scientific publishers;
❏ Scientists prefer to call the present situation a 'review crisis', as the pressure on the review process is tremendous."

The contracting partners in the FIGARO consortium are the universities of Utrecht and Delft in the Netherlands and Oldenburg in Germany through their libraries, the university of Hamburg with its computing centre, the university of Firenze in Italy with its university press and the private software house Daidalos in the Netherlands. As assistant contractors feature the university press of Leuven, Belgium, the R&D department NetLab of Lund University in Sweden, the publishing houses Lemma in the Netherlands and DiG in Poland, the research group Delft Cluster and the well known Scholarly Publishing & Academic Research Coalition SPARC[i] from the US.
Utrecht Library is the co-ordinator of the project. The contracting partners will build the publishing platform for the academic community; the assistant contractors will test this platform by providing and publishing content.
The project name FIGARO is an acronym for the **F**ederated **I**nitiative of **GA**P, which are German Academic Publishing, and **Ro**quade[ii], two independent e-publishing initiatives in Germany and the Netherlands respectively until they met at a CERN workshop in Geneva, Switzerland in April 2001. It was love at first sight, inspired by the idea of 'Returning science to the scientists.' In July they expressed their mutual sympathy for co-operation on a European level and after the summer leave they succeeded in setting up a broad consortium and drawing up a demanding plan in just six weeks.

Ambition
It is FIGARO's ambition to:
1. Execute an inspiring and instructive Europe-wide project on e-publishing within the constraints of time and budget.
2. Deliver a publication platform at the end of 2004 that:
     ▪ is firmly embedded in the European scholarly community
     ▪ demonstrates a viable business model

- shows a number of publication products that combine efficiency – measured in low costs and high speed – with reputation – reflected in impact-factor and branding
- is perceived as a promising way out of the current crisis by scientists and their managers alike
- opens up academic publications to any and all interested parties, be they from within the academic world or from outside.

Design

FIGARO aims at "the design of a novel collaborative business model for e-publishing within a virtual community of academic institutions and SME's and the actual building of a networked organisation and distribution platform based on the results of this work. Moreover, (continues the product description) a strong framework of legal and economic agreements ensures long-term sustainability and economic viability of operations." This is formal language, Commission speak so to say. What does it mean?

Basically the project will develop a three-layer model, comparable to the structure one may encounter in current ICT architecture. In an analogy to the data layer, the organising layer and the presentation layer in modern information structures, FIGARO distinguishes a back office, a circle of front offices and a multitude of publishing initiatives within academia. The organisational model for co-operation between back office and front offices is a federation of independent actors. FIGARO's cohesion is mission based, but will be consolidated in practical arrangements and formal contracts.
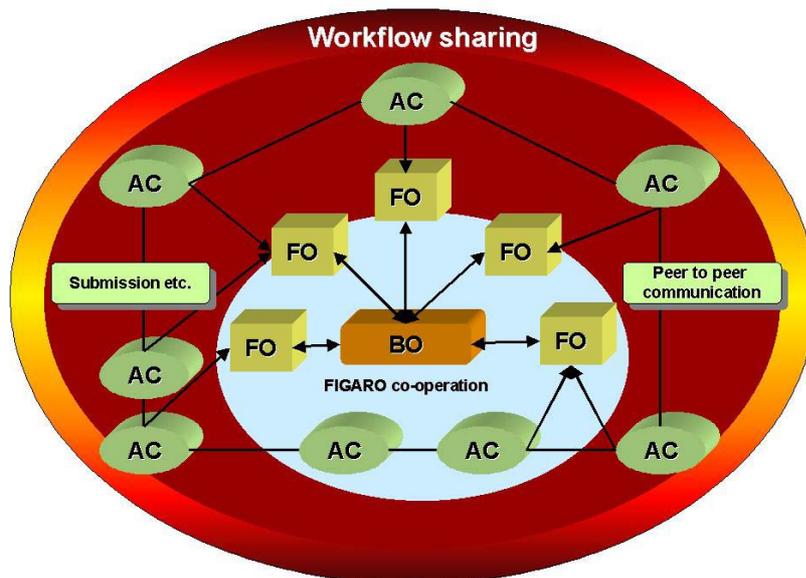
Figure - FIGARO project structure
AC = academic community
FO = front office
BO = back office

Let's look first into the role of the front offices. They are the independent professional content organisers, the agents, close to the creators. Functionally they are university presses or other academic publishing bodies, small or medium publishing enterprises, publishing branches of learned societies or associations. However, be they well established or newly set-up, their

primary mission should be the enhancement of scholarly communication and the provision of open access to scientific knowledge for society as a whole. Making a decent profit is not forbidden, but pricing schemes have to be based on added value not on copyright ownership. Authors will not assign their copyrights to this 'new academic publisher'.

A Front Office can be a traditional small or medium publishing company switching over to e-publishing and in need of a supporting technical infrastructure and/or organisational assistance. Of course they have to fit within the ideological framework of FIGARO.
A Front Office can also be a university press or another university unit (e.g. a library). Such an office can be either institutional or discipline based. In the first case it will, in general, focus on collecting and organising the intellectual produce of its institution in a repository and offering open access to it, thus giving exposure to its patron institution. In the second case the office might concentrate on quality based inter-institutional selection of content per subject or discipline and building 'bodies of knowledge' by tagging, indexing and interlinking the selected documents. This body of knowledge could be shaped like a classical e-journal or manifest itself as a 'refereed portal'. The refereeing that underlies the quality selection can be organised both pre- and post-publishing, both anonymous and open, both with and without the authors' commentary. Although every front office has its own branding, it has a franchising relationship with the FIGARO organisation which enables the use of the common back office. This means that, in order to be a member of the federation, it has to meet well defined quality standards in its procedures and it has to use shared tools based on open standards for archiving, connectivity, meta-data, hyper linking and document structuring for as they are available.

Thus, FIGARO is not a publisher but a technical and organisational structure that enables initiating scientists, editorial boards, and academic organisations to become publishers themselves, with the possibility to establish or keep their own brand.

In principle, any publishing demand, be it from an individual author, from a collaborative team, from a conference committee or an editorial board could be met by a front office. The customer should be given advice and support and, above all, a guarantee that his publication will be treated with respect, be given exposure and, when applicable, contribute to his reputation. A front office will generate its income from one or a combination of the following:
- customers paying subscription fees, access fees and/or pay-per-view fees,
- membership or participation fees,
- fee-for-service (e.g., production, conversion, hosting services),
- authors or their institutions paying publication fees,
- authors or their institutions paying review fees (like examination fees),
- institutional or organisational task based financing,
- grants, donations or sponsorships,
- in-kind contributions to offset expenses (e.g. free housing, equipment, networking),
- other fees or sources of income.
In general, the more the parent institution of a front office recognises communication of knowledge to be as much its rationale as the creation of knowledge, the more this front office will receive structural or task based financing, just like the institutions library. Indeed, why should a university maintain a freely accessible library, collecting knowledge from elsewhere, and not have an equally accessible press, exhibiting in-house generated knowledge? MIT's Open Course Ware project is a good demonstration of this new insight. But not every university has gained this view yet. In my own university, Wageningen University and Research Centre, I once heard the research officer of a large food company sigh: "I often have

the impression that I have to go to a conference in Washington in order to keep abreast of the developments in Wageningen."

What is the position of the back office in this new publishing construct?
It, the back office that is, has no simple equivalent in the classical publishing world. In the FIGARO project plan a comparison has been made with the LINUX community, with the front offices in the role of developing users adding code value and the back office being comparable to the packaging and re-distribution unit[iii]. The back office certainly is a clearinghouse for explicit, i.e. coded and documented, experience, but it is also the service station of a European community of practice of e-publishing bodies. The back office is functionally and financially an autonomous entity, working for its franchisees, the front offices, on a cost recovery base. It has no public brand of its own but its mark represents the quality of the participating front offices. The back office supplies the front offices with software tools, know-how documentation, instruction and, to overcome certain hurdles, temporarily with people. Existing instruments are adjusted on the basis of experiences in practice. New instruments are developed, based on emerging technologies and new open standards. Front offices may play an active role in this by defining requirements for new instruments as well as specifying, designing, building and testing them.

Plan
Where collaboration is the cement of the whole construct, all tools and procedures will be developed from this viewpoint. Furthermore, the project has two different phases, the development phase and the operational phase. Although overlapping in time, these phases require fundamentally different approaches. The linking pin between the two is a constant process of testing and user evaluation of the various tools and procedures.
In the first phase a www-based shared workflow model will be developed and technical innovations in the fields of collaborative document modelling and quality assurance models will be realised. Also a collaborative business model for e-publishing within a virtual community of academic institutions and SME's will be worked out.
The second phase implies the actual building of a networked organisation and production platform based on the results of the aforementioned actions. A strong framework of legal and economic agreements ensures the long-term sustainability and economic viability of the operations that are launched during the project's lifetime. This networked organisation also constitutes an effective distribution channel for emerging technologies and new standards in this field.

The breakdown of the plan shows twelve work packages.
1. Project Management. Carried out by the Utrecht University Library.
2. Document-oriented tools. Prototyping and implementing a distributed XML-based authoring, content management and publishing system, by Daidalos, the Dutch private software house specialised in e-publishing.
3. Workflow-oriented tool framework. Prototyping and implementing a web-based workflow application for the entire distributed publication process, by the Carl von Ossietzky University Library in Oldenburg, Germany.
4. Generic authentication/ authorisation layer. Provided by the Hamburg University Computing Centre.
5. User evaluation. Testing of all software deliverables and workflow based operations by Firenze University Press.
6. FIGARO business model. Delivering the business model and plan for (back office and front offices of) FIGARO by Utrecht University Library.

7. New frameworks of article publishing. Investigating the feasibility of new, i.e. post journal and public peer reviewed, publication models by Delft University Library.
8. Implementation of Front Offices network. Set up by Utrecht University Library.
9. Implementation of Back Office organisation. Set up by Delft University Library.
10. Legal Framework building. Defining the contractual relation between Back Office (service provider) and Front Offices (content providers) by Hamburg.
11. Assessment and evaluation. Done by Utrecht
12. Dissemination and exploitation of project results. Dissemination of information and project results will be done via the SPARC channels. Utrecht will start effective exploitation work.

The assistant contractors Leuven, Lund, Dig in Poland and LEMMA in the Netherlands will participate in the project as content providers and testers of processes and tools in some work packages from March 2003 onwards.
The total project plan shows a time budget of almost 260 man-months. It started May 6 of this year. Most core development and implementation activities will be finalised 24 months later, then after six months of full operations, the project will be completed on November 1, 2004.

Beliefs
Why do the FIGARO partners believe that the project result, i.e. the new publishing platform, will succeed?
First of all there is the deep dissatisfaction with the current system of scientific article publication, implied in the notion 'serials crisis'. It is no longer just libraries that are protesting, the scholars themselves are rebelling now[iv]. The basis for this crisis was laid some decades ago when a number of major publishers decided, sometimes openly, to switch from the academic community to shareholders as their core stakeholders[v]. Scientific publishing was transformed into a money spinner with annual profits of over 35%[vi]. Journal price increases were inflated to 11% per year. Libraries, however, could not come up with more than 5% and 'paid' the balance of 6% through cancellations. Journal collections were thus ruined and would have disappeared completely if publishers had not understood that they were killing the goose with the golden eggs. Two years ago they decided to limit further price increases to 5% or 6% per year, the maximum that libraries can afford anyway. Libraries that were prepared to commit themselves to this price increase for five years would get access to the complete journal database of the publisher involved. Whole groups of libraries, so called consortia, opted for this lesser of two evils. Thus publishers secured customer retention, together with its annual cash flow growth for the years to come[vii]. The underlying problem persists.
This publishers' policy is facilitated by the total lack of competition on the vending side of their business. The monopoly arises from an exclusive assignment of copyrights in exchange for publication of the article. As long as this monopoly exists publishers cannot resist the lust of indecent profits and other vices that come with absolute power. Who could? Elsevier Science chairman Derek Haank made an illustrative point recently[viii]. In answer to the question "Supposing an academic wants to publish a paper in one of your journals, but to self archive it on the Web as well. Would that be acceptable to Elsevier?", he replied "Yes. You can put your paper on your own Web site if you want. The only thing we insist on is that if we publish your article you don't publish it in a Springer or Wiley journal, too. In fact, I believe we have the most liberal copyright policy available." Unfortunately, two further questions were not asked. The first one should have been, "Why do you so vehemently oppose an article being published in more than one journal?" In my opinion, the only honest answer is, "Because this brings in competition. From the newspaper world we know that this will reduce our profits to a humble 10% or 15%." The second unaked question was, "There is a big gap

between a scholar's personal web site and Science Direct. Open institutional repositories can fill that gap, windowing the integral intellectual produce of a scholar's university or institute. Would that be acceptable to Elsevier as well?" Now, I am less certain of the answer. On the one hand, Derek Haank says that the *only* thing he insists on is that the scholar does not publish his article in a Springer or Wiley journal too, and a university site obviously is not such a thing. On the other hand, as more than one publisher can pick the article from the open university site and publish it, the risk of competition lurks again. The attitude towards university repositories and Web sites will be the litmus test for Elsevier, or any other big commercial publisher for that case. How liberal is their copyright policy really? Will they, these publishers that is, allow these sites and accept the risk of emerging competition or shall they inhibit these sites and risk fierce collision with the academic community? The FIGARO project jumps into this gap between building ones own personal Web site and becoming a subject of Science Direct. On the one hand FIGARO frees the author of the vulnerability and untraceability of a personal Web site. On the other hand FIGARO does not require him to assign his copyright like a commercial publisher will. Yet, FIGARO offers him instant and robust publication. Thus FIGARO takes advantage of the dissatisfaction with the current system.

Secondly, FIGARO has learned a lot from other initiatives and studies[ix]. Myriad discussions have taken place during the last decade, seminars were organised, articles written, presentations delivered, arguments exchanged and business models studied. Alternative publishing approaches are mushrooming and, although they comprise a wide variety, all these mushrooms have a stem and a cap in common. That is, all want the academic world to regain control over the scholarly communication process, all anticipate open access to scientific publications, all are emphasising content quality control as an essential element. Speed of publication is a further common feature and substantial reduction of costs, hence prices, conclude all plans. Overall, scholarly communication and publication are, next to knowledge creation, seen as the mission of a university.
FIGARO's structure and approach addresses these common ideals and ideas. Embedded in their own community, the independent front offices are able to understand and shape its values. On the other hand, they are not standing alone. Through their common back office they share knowledge, join best practices, use open standards, realise interconnectivity, are facilitated by tools and procedures and get human support when needed. FIGARO believes that its organic structure fits the needs of the academic community and, hence, is an important success factor.

FIGARO brings together a charismatic bunch of people, a third reason to believe in its potential success. All partners in FIGARO were already involved in activities in the area of the new academic publishing and could demonstrate some successes. They were prepared for a breakthrough and FIGARO was just the crystallisation point of this drive. As a consequence, FIGARO not only covers a diversity of European cultures, but also comprises a lot of experience and knowledge in the publishing and library world. The participants are very capable of making explicit the project requirements and testing its results. Public bodies and market players are partners, guaranteeing a non proprietary yet efficient approach. FIGARO's kick off meeting demonstrated an inspiring combination of dispute and accordance.

Risks
There are risks involved in both the project and the publishing platform that results from it. A special characteristic of the project is its complex structure with contractors, assistant contractors and sub contractors in very different roles. Some are builders, others suppliers of

content or testers of results; some are specialists, other generalists. The partners are spread all over Europe and working in different settings. The European grant, although a big amount, is far from enough for the whole project. This means that the partners have to contribute in cash, with labour or in kind. As always, this is sensitive stuff. The answer to this complexity is transparency, i.e. communication. A special communications officer, covering also the PR of the project, will be recruited.

FIGARO's most critical moment is the birth of the publication platform, the implementation of its innovative business model in practice. In fact, there has been no preparatory market research. The dissatisfaction with the current system is known, but to translate that into a reliable quantitative prediction of future usage seemed impracticable. The idea of building a collaborative e-publishing network organisation is innovative and there are almost no examples of best practices that FIGARO could use or imitate. In preliminary discussions with potential users the standard reaction was: we sympathise but let's wait and see what FIGARO brings. Authors will not come to FIGARO just because publication is free. For them the current system is free as well. Gradually they are becoming aware of the cost of the current system to libraries, but this doesn't seem to be a major incentive for them to switch to alternative ways of publishing. Speed of publication seems a more important factor, especially for younger authors who need to build a name. University repositories or pre-print archives, combined with post-publishing (open) refereeing, constitute an answer to that. The critical success factor, however, is the contribution that the new publication platform can provide to the reputation of the author. This reputation is directly related to the status of the publication product, i.e. journal, conference proceedings or, in the future, portal. Branding and impact factor are the generators of this status and this has to be organised by relatively small and vulnerable front offices. At the risk of staying a marginal low end publishing body, FIGARO has to address this issue as a core theme in its project.

[i] SPARC's agenda focuses on enhancing broad and cost-effective access to peer-reviewed scholarship. <http://www.arl.org/sparc/>

[ii] Leo Waaijers, Stratum continuum of information: scholarly communication and the role of libraries. New Library World, Volume 103, Number 1175/1176, 2002.

[iii] Eric Steven Raymonds, The Cathedral and the Bazaar. <http://www.tuxedo.org/~esr/writings/cathedral-bazaar/>

[iv] E.g. Myer Kutz, 'The Scholars Rebellion Against Scholarly Publishing Practices: Varmus, Vitek and Venting'. Searcher, Vol. 10 no 1- January 2002.

[v] John MacKenzie Owen, Digitaal Publiceren en Distribueren van Wetenschappelijke Informatie. Universiteit van Amsterdam/Stuurgroep IWI, Maart/April 2002.

[vi] Mary M. Case, Director of ARL's Office of Scholarly Communication. 'Scholarly Communication ,a System in Crises' March 20, 2001. <www.arl.org/sparc/resources/03-01arl/u_pitt-arl.ppt>

[vii] "The Science & Medical business has had another very successful year. Elsevier Science has extended its leading position, growing revenue well ahead of the market and delivering double digit profit growth. The key indicators on Science Direct usage, penetration and customer retention, all show good progress." [page 5] "Reed Elsevier generates significant cash flows as its principal business do not require major fixed or working capital investments" [page 10]. 'Report of the Chairman and the Chief Executive Officer' of Reed Elsevier for the year ended 31 December 2001. < www.reed-elsevier.com >

[viii] 'Not Pleading Poverty'. Interview of Elsevier Science chairman Derek Haank by Richard Poynder in Information Today, Volume 19, Issue 4 – April 2002. <www.infotoday.com/it/apr02/poynder.htm>

[ix] E.g. John W.T. Smith, The Deconstructed Journal – a new model for Academic Publishing. Learned Publishing, Vol. 12, No. 2, April 1999. <http://libservb.ukc.ac.uk/library/papers/jwts/d-journal.htm>