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A Seedbed for Innovation? Eight European Commission Work Plans and their Impact on the Commercialisation of the Information Marketplace

David R. Worlock

Quayle Munro, London, UK
david@davidworlock.com

Abstract:

This paper offers a personal view of the nature, role and impact of European Research Programmes on the publishing industry.

Keywords: European Framework Programmes; Publishing

1. Introduction: CATCH 22

The senior official of the DTI (Department of Trade and Industry in the UK – now BIS) adopted the confidential tone of someone about to impart a great secret as he wound up the briefing session for potential participants in the EC Impact programme. "You are all going to find it very interesting, you will meet a lot of new people, and we do of course want to see British projects and participation bring back the majority of the funding on offer. But do bear in mind that it will change nothing. It is not meant to change anything. If it does change anything it must have failed. Because this is an exercise in ground-clearing and relationship forming. If great things result commercially it means that we have made too much money available and, horror of horrors, 'distorted the marketplace.' This is the ultimate crime, so we must be very aware that whatever we do in these programmes is pre-competitive."

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If the lens through which we make conclusions about the success of successive work programmes launched by DG13B Information and Society and its successors is conditioned by this type of insight then the fact that the commercial world has relatively little awareness of this activity over the past thirty years is either down to a failure to make a market impact—or a success in avoiding making a market impact, and thus satisfying the requirements of member states. If in the aftermath of Brexit it is possible to wonder whether the United Kingdom was ever truly in Europe, then it is in areas like this that the true contradictions of that dubious participation become clear. In a developing information marketplace, fired up by US technology innovation and the Silicon Valley start-up culture, Europe was a laggard, but the UK had a great deal to offer, both linguistically and technically, in Europe.

Language had given it publishing and information marketplaces based on exports which gave greater scale and global presence than its European competitors. Leading positioning in computer science innovation, especially at Cambridge and Southampton, was also a powerful plus, but in an analogue world British publishers were innovation (and investment) averse, and certainly did not consort with researchers in communications marketplaces.

Keeping in mind the fact that we are talking about the thirty years of most rapid change ever experienced in information communication marketplaces, and in the context of a political environment which did not want what happened in Luxembourg to succeed beyond very limited terms, is vitally important if we are to understand what actually happened, and why the programmes created in this context actually enjoyed an important and mostly understated role in the creation of a modern European information industry, with major centres of start-up creativity in London, Berlin and Barcelona, and increasingly elsewhere.

2. Creating an Agenda

He looked tired when he spoke, but there was a gleam in his eye as the information scientist running the workshop in Luxembourg said "Do you know what I have just asked them? 60% of this audience did not know what metadata was when they got on the plane this morning!" It is always hard to remember when you did not know things: probably that audience in 1986

still think, like the present writer, that they were born knowing what metadata is. But in the period of rapid change that has gone from the first dial-up online services in the late 1970s, via offline technologies like CD Rom in the early 1980s, to the beginnings of the Internet in the early 1990s, to the World Wide Web, the creation of a networked society in massive and global terms and the ongoing fundamental changes now postulated by Blockchain, it is easy to forget how important setting an agenda becomes.

Groups of well-informed people from across Europe meeting together and exchanging notes on their sense of bewilderment does not happen by accident. There has to be enough impetus to allow a group of functionaries in Luxembourg to talk to national governments, find out where expertise resides and get it together. Then there has to be purpose: a work plan provides a way of focussing attention on the key needs and requirements. Unfortunately the political imperatives of the funding countries have to be taken into account. Despite the fact that the needs of SMEs (small and medium sized enterprises) have occurred in one guise or another in every work plan in thirty years, it could be argued that this was a compliance requirement rather than a serious attempt at policy development. Few SMEs in generalised marketplaces were ever encouraged to adopt cross border trading, and one looks in vain for examples of mighty pan European oaks grown from acorns funded by the Commission. This is not what it was about, and therefore it is not what it did. Measuring its "impact" in terms of creating a new range of market players is fruitless, and would court the criticism that it was an attempt to distort the development of the European marketplace.

So the workplans of each successive framework programme became a way of framing what the Experts (recall the ancient definition of the ex-spurt as a "drip under pressure") think are the priorities, cross checking them with national prejudices and then securing first Commission and then European Parliament funding support is a juggling act: add the consideration of market distortion, and then recall that no consortium receiving funding could proceed to get their hands on the cash unless they contributed more to the project in kind (offices, staff, materials) and it is not hard to see why the limitations imposed from the start on scoring goals and creating change were so effective. Yet though it was seldom appreciated at the time, just setting agendas and reviewing them was a fairly fundamental activity. In the first instance it brought a significant amount of European expertise into one room at one

time, and in a context, unlike normal conferences, where attendance implied a commitment to help in a common pursuit. And, wider than that, it sent a signal to member state governments that in their policies towards the commercial information sector, there were inhibitors to commercial growth that they needed to note and address and that there was a genuinely international context for addressing market needs. And in one particular instance this has proved crucial. The role of this activity in tuning European awareness of the significance of moving from a content dominated world to a data driven society cannot be overestimated and forms the context for the commercialisation of the European marketplace for the next decade. Setting the agenda is a major part of the accomplishment of these programmes, since that agenda leaked into the way in which the commercial sector also envisaged the problems—and the solutions. And the solutions were often not collaboration on pre-competitive research, but merger and acquisition.

3. Impact and Marketing

"Madam Project Officer, I must protest in the strongest terms. What do you mean when you say that you will not release the next tranche of funding until we implement a dissemination plan. We are three libraries, a small software house and a University Press in five different countries, and none of us knows what a dissemination plan is!" It may seem bizarre to all those who have grown up in a world with social media, but in the thirty years covered by these programmes the first decade was accomplished with only the most limited availability of any output that could be disseminated effectively, and the second was accompanied by Commission insistence to mostly reluctant projects that they plan and orchestrate some way of disseminating what had been learnt and why it was important. Today this process is much simpler. While the funding of this work is paltry when compared to the size of potential global markets, the needs of a wider information using industry and society, the size of EU budgets and the size of the information industry and its marketplace, at least the mechanisms for disseminating outcomes has got better. Which is obviously an important factor, and enable European taxpayers to be reassured both as to the necessity of the spend and its effectiveness. Yet it could be argued that, in the age of open communications, the pre-competitive research element is still hard to focus, and it is difficult to ensure that it is reaching a targeted audience of people who need to know.

One of the end-products of this thirty year activity is, however, an information market consultancy workforce in Europe, which never before existed outside of the major global firms created from the old Big 4 accountancy practises, and a limited number of national enterprises. Not only is there now a wider range of pan European firms, but a very great increase in small national firms and individuals prepared to work on cross-border projects and with experience of the FP processes. In the information sector this has a vital capillary effect. It creates places of scattered expertise and presents opportunities. For serendipitous contact with a wide variety of actors, and one of the key factors in information marketplaces during this period has been the possibility afforded to previously siloed players to form relationships and become partners in market segments previously closed to them. There are countless examples of this, and while only a few of these transitions relate in any way to European Commission programmes directly, the possibility that those programmes helped to create a cadre of knowledgeable advisors and brokers must be a factor to be considered.

4. Standards and Performance

"The way to win funding is to have a Slovenian project lead, German and UK main participants, a promise of benefits for SMEs, free in-service training for European libraries and a mention of XML on every page of the proposal." While some consultants might advise clients tongue in cheek on how to succeed by multiplying success factors, the size of programmes during the IMPACT years turned success into a lottery. Despite the diffidence of their government, UK players won a very large number of projects, making it harder for them to prevail in later years. Many participants did feel that being led by one of the less prominent countries was a success factor, whether this was true or not. But one factor was perfectly clear: being non-standard in technology terms did not fit well, and while some projects survived without compliance, most work conducted under these programmes adhered quite strongly to the broad, central avenue of operating standards. And since the workplan was never to create technology innovation for its own sake, but to embrace it where it offered real user benefits, or extend it beyond current usage to wider applications, then working within the framework programmes in the information sector provided a further extension and consolidation of standards the market was in the process of developing anyway.

And project performance did highlight some of the emerging standards requirements. This was not at the level of feeding DIN or AFNOR or BSI with operational insight, but more by highlighting some of the gaps in the operating conventions, in technology and in interfaces and in end user applications—what today would fall into UX or UI—which would allow less fettered access to content-derived solutions. These pre-competitive—early market experiments clearly had an influence. Projects successfully exposed the whole information chain, and pointed to the problems that arose when one "fixed" one question in a process that plainly required an over-arching solution. At a period when the current language of "architecture" and "solutions" was not yet in place, this ability to experiment in mixed groups of players and find things out about how users behaved became a key attraction for some commercial players participation.

5. Actors and Interactions

In the Europe of the mid-1980s, seed corn finance did not exist in information markets, and "angels" were things that congregated on the head of a pin without involvement in risk capital. Yet by 1985 Silicon Valley financing was in full swing. The European Commission did not substitute for any of the conventional ways of funding projects and development plans, but it did provide a sandpit in which a rigorously selected few, drawn collaboratively from across the continent, could experiment without fear of failure.

One experience that seems to have affected all participants is a sudden realisation of the overheads of collaboration–: translation, decisions are taken differently in different cultures (business cultures as well as social ones), participation in decision making and time taken to decide being major factors. Given that all actors, including publishers, information providers, software developers, systems integrators in this examination of commercial players, now live in a much more collaborative networked world now than they did when these programmes began, for many of them this was an initial learning experience.

By looking at a single market sector, where Europe is very strong, and where the Framework Programmes did a very considerable amount of funded work, we can infer some of the influence this work has had:

5.1. Case Study 1: STM

Scientific, Technical and Medical information has been one of the heartlands of successive programmes. While the context has been the librarian and the researcher, the content has been the output of research, extending from the STM field into the social sciences and humanities. This is not to say that other content areas have been neglected, since there. Have been plenty of strands in work programmes devoted to business-to-business issues, but simply to acknowledge that it was in the STM vertical that important experimentation in information handling were most apparent, since it was there that the benefits of technology-led information innovation had most obvious and immediate application. Europe had long traditions in journal publishing dating back to the seventeenth century. It also had a strong tradition of government backed research, and this too was a concern of other parts of the European Commission.

In the light of the importance of this field of activity to Europe, it is right to ask whether Europe has retained its pre-eminence in collating and reporting research outcomes, given the technology driven revolution of the past 30 years, and whether the information-based segments of the Commission's programmes have helped to support the European industry or not. And the answer which can be inferred from the current state of commercial development in the European market must be a positive one. Thirty years ago the predominant market leaders in academic publishing were all European. A massive consolidation has taken please since then, but as a result the field is led by Elsevier, the U.K. Journals publishing arm of New York-based Wiley, and Springer—Nature. However, this is not so important as it once was. The journal is no longer the currency of exchange so much as the article. Peer review is no longer the key control point for publishers as post-publication peer review and wider metrics and "altmetrics" create a new basis on which the self-published article can achieve prominence, even if this is confirmed by journal republication. And throughout this period cyclone Open Access blew through Europe, and may at length be blowing itself out again, as first instance self-publishing and preprint publishing become routes to market exposure and reputation management become attractive and easy to use routes for scholars to use.

The Commission programmes concentrated attention around what was going on here. They required new actors to look at the whole workflow of scholarly

communication outside of the traditional roles played by publishers, librarians and scholars. And in those years the response of the marketplace has been terrific, as project after project (think only of Mendeley, ResearchGate, ReadCube, figstore, f1000, developed in a European context, has built upon the challenges created in the EU programme context. Europe emerges from this, in this sector with a strong start-up tradition, and more potential funding as a result of successful realisation of a rich harvest of developments in the past five years. There is no tangential link that can be made between these developments and the Commission workplans in information except for some overlaps in personnel: at the same time the conclusion that some of the pre-start-up research was a factor in subsequent market developments, and that the research experience that many gained on these projects, and that the received idea of such a programme doing invaluable "blue sky" research were all enablers. Innovation does not grow from stony ground.

6. Regulation

One of the most productive outcomes of the Commission's interest in the information marketplace was the light it shone upon regulation. As the actors and the Commission began to realize that the way information transfer and trading took place was going to change radically and permanently, so they realised how inadequate was the legal framework surrounding information transactions, and that many of the conventions of intellectual property protection sanctified in the world of print were meaningless in a digitally networked society.

The Commission has never been able to sort this out. Balancing the conflicting interests of the media and the public has led to old laws being revisited and patched again and again until they look like an English road. Although the Commission set up a Legal Observatory in Luxembourg to monitor the situation this became little more than a talking shop. More significantly however, the workplans did provide the market insights that led the Commission to involve itself in the campaign to create a legal provision to secure the legal protection of databases. The argument of those in favour was that the labour of compiling a database, whether it consisted of protected works or non-copyright information, needed to be itself protected if investment was to be encouraged and investors protected. The creation of a *sui generis* right

was a controversial business, and what reached the statute book in member states is a shadow of the original proposal. It remains however fundamental to the financing of many start-ups that the data collected from a variety of sources to answer specific workflow issues is protected in law from imitation or copying, even if this protection only lasts fifteen years.

6.1. Case Study 2: Tradeable Information

At the beginning of the Commission's interest in the information marketplace, information created by government was, with a few exceptions, closely protected by copyright and government licensing regulation. Yet it was an early recognition of the Commission that government data and its re-use was critical to the creation of an innovative start-up culture. The ability of individuals to license government data quickly and easily on standard terms and at standard prices was seen as an essential, and the fact that this was impossible was a barrier to growth which must be overcome.

Many governments tried to proceed by guidelines at the dawn of the digital age, fearful of relaxing copyright and giving all citizens the right to copy laws, or parliamentary proceedings or even maps, especially if such material was going to be re-used commercially to create services to help other citizens. One of the first of these sets of rules, created by EPS Ltd under contract to HMSO, the U.K. Government printer, became part of the basis of the Commissions own guidelines (Guidelines for improving the Synergy between the Public and Private Sectors in the Information Market (CEC 1989)), and thus spawned a major debate, a conference in Stockholm and eventually a draft Directive. By the time this became effective it had been bureaucratically castrated, but even then it forced the rethinking of the relationship of government, source of a great preponderance of the data used in digital societies, and the re-using, re-mixing information society beyond them. In the UK it led to the creation of an Advisory Panel on Public Sector Information in the Cabinet Office, and an Office of Public Sector Information in the Ministry of Justice. And while the Bastilles of British information—Ordnance Survey, Land Registry etc—are yet to be stormed (since they need to be saved for Privatization to pay down the national debt) every office of government, in every member state, now has to have a clear and explainable trading policy, and those trying to build pan-European trading environments can no longer be totally rebuffed.

This whole campaign was a direct result of the involvement by the private sector in the information market workplan, and projects developed under that programme consistently highlighted the need for education in government and a change of attitude to sharing information. This in turn alerted more private sector players to the opportunities. As an attempt to engineer a Damascene conversion in government this movement undoubtedly failed: as a way of preparing the arguments and chipping away at entrenched attitudes it succeeded.

7. Conclusions

> "You don't think anything will happen as a result of all this, do you? They will vote just enough money to keep you happy in your sandpit, but not enough to change anything. The only people who can change anything now are Google, Apple, Amazon, Microsoft and Facebook." [A statement by an anonymous Lecturer in Information Policy at a UK university.]

In the thirty years that have passed since the European Union embarked on their work of studying the issues and problems of pan-European market for information, and setting up studies of the barriers and opportunities, the major US players have enforced a great deal of commercial change in practise on all of us. But for those who worked on the Luxembourg—based programmes, and for those influenced by them or working with them, there has been an ever-present reminder. The network is the network. Geographical location is less important than it once was. Europe has a rich skills base, some of the strongest societies in terms of mathematics and computer science on the planet, and a great energy to start in a new place. Europe now boasts a major start-up economy with a basis of skilled and experienced people in the Shoreditch/Hoxton area of London, and Berlin and Barcelona are growing rapidly as well (though the disaster of Brexit may have a slowing effect). There is a strong finance community involved (the major fairs organized by the NOAH financial advisors group are a testimony to this in Berlin and London). These centres, and a Europe-wide science park culture, demonstrate excellence in market areas like Edtech, Fintech, and Healthtech. Thinking of information as distinct from applications software, content instead of knowledge systems, discovery as distinct from solutions gets harder by the year.

The European Commission cannot claim sole credit for this transformation, and in many areas it could probably have done much more. But in the information marketplace it encouraged debate and education through peer contact, stimulated proposals and arguments about how to solve problems, and forced many commercial players to form consortia with third parties in different countries. What we have now could not have been the same without it. It did not (sadly, perhaps) ever "distort the market place." But it did condition the conversation, improve the quality of the debate and make introductions with incalculable ramifications. The industry does not know what it owes to the exceptional people who maintained this activity in sometimes difficult circumstances. The information industry is now one of the largest industrial verticals in many member states. At its heart is a seedbed for innovation. There is a relationship between that and what the industry learnt in Luxembourg.

The best guide to what happened remains the workplans and reports of the various Framework Programme elements over the years, from Impact to Horizon 2020. On the legal issues, the EC Directive 96/9/EC on the legal protection of databases remains a landmark, though underused, EC Directive 2003/98/EC on public sector information (the PSI directive) has major implications which have never been fully worked out in member states, especially in the UK, but the very fact of its existence has hugely influenced the debate. Further information can also be obtained from Saxby (1996) or Worlock (1997).

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