ALBERT PRAT in Memoriam

Albert Prat and Computational Statistics

Working with Albert

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1. Introduction

It is a great honour for me to be invited to speak at this meeting celebrating the life and contribution of Albert. Like all of you I was deeply sadden to hear of his death on the 1st January this year. For me his passing took a vital spark out of life. Albert was larger than life. He made a vital contribution to every group and activity to which he belonged. He was a profound European. An extremely able individual, he always worked collaboratively through groups, teams, projects – in community. My experience of working with Albert was in European projects and international meetings. These we shall explore now.

2. FOCUS

Project FOCUS, ESPRIT 2 # 2620 1988-1992
Front-Ends for Open and Closed User Systems
Partners: NAG, LUTCHI, Imperial College, PHILIPS, SOLVAY, METEK, Westfalische Wilhelms Universitat, UPC

Two important goals:

1. Facilitate the use of the huge amount of scientific knowledge contained in the NAG Library (Open System Software)
2. Facilitate the use of the scientific knowledge contained in existing packages such as GENSTAT, SCS and others (Closed System Software) to all kinds of end users (expert and novice)

FOCUS represented pioneering work on:

- User friendliness
- Separability (front end/back end)
- Reusability of high quality back ends
- Integration of the knowledge of qualified experts

NAG's earliest experience of working with Albert and the Statistics and OR Group of UPC in Barcelona was the FOCUS Project in Esprit 2. This early collaboration together provides a fine example of working with Albert.

He was invariably involved in every facet of the activity:
(a) STARTING
- Forming the consortium
- Formulating the proposal
- Securing the funding with the Commission of the EU

FOCUS was a four year activity, from 1988 to 1992 involving seven primary partners (UPC and NAG among them) with a total budget of some 8 million ECUs of which the EU provided some 4 million ECUs.

(b) CONTINUING

- Constructive Partner throughout the Project
  - argued UPC case and protected their interests
  - committed to success of activity AS A WHOLE
  - great support to Project Co-ordinator

Albert always sought to reconcile the interests of individual partners. He provided a "beacon" model of collaboration that others felt encouraged to follow, and did! One of Albert's greatest gifts was his vision of the European dimension : seeking to maximise the benefits of collaboration for individual institutions and for the achievement of European Union objectives, amongst participating organisations from different members states. Albert had a mastery of the dynamics of international collaboration, which he used to profound, constructive effect.

Albert brought valuable insights to the FOCUS project because his working life, whilst rooted in academia, involved substantial continuing experience in industry and commerce. This "real world" experience helped on numerous occasions and led to fruitful lines of inquiry, which might never have occurred to other project partners. Several FOCUS "knowledge-based front ends" which UPC developed

- REGS = a statistical system for estimating the value of real estate
- DOX = an expert system to aid engineers with the design of experiments

reflected the desire of Albert and the UPC Group to bring high quality analytical techniques to a wider audience, beyond academia.

Albert was both knowledgeable and well informed. He monitored research and development in Statistics and in Information Technology (particularly computing) with great care. He also had a constant desire to carry these insights into real-world applications. An outstanding example of his prescience occurred in the FOCUS project. Albert and his UPC team recognised the importance of the then fledgling PC sector. At the time (1988-1992) the PCs were immature, over-priced and under-powered. But Albert knew that more powerful chips were coming (Moore's Law) and sensed that PCs would revolutionise computing.

In some academic circles PCs were regarded with disdain. This insistence by UPC on their future importance and hence essential inclusion in the project did not meet universal approval in project formulation. But Albert's power of persuasion and diplomacy triumphed and references to PCs were included (four references in a 297 page document!). Even then one reviewer criticised the proposal for their inclusion, "not significant for the kind of front-end systems under consideration". Under Albert's leadership, UPC continued to carry the banner for making FOCUS work relevant to PCs, and with profound success. The PC computing revolution came, and PCs became pervasive in all sectors of computing, including those of interest to FOCUS partners. The genius of the FOCUS project was to separate an easy-to-use, application-intelligent front-end from a back-end system for doing non-trivial numerical or statistical analysis. The PC became an ideal vehicle for such front-end systems.

(c) COMPLETING

- completing the work
- preparation for Final Review
- publication and exploitation of results
- follow-on projects

Albert was not only a great starter and constant continuer, he was a great completer too. He recognised the vital importance of completing projects until they are truly finished. This

involved getting each and every Work Package completed, documented and delivered to the Project Co-ordinator. Albert invariably met the agreed timescales himself (and/or his Group) and then helped, encouraged, cajoled (either as Co-ordinator or Project partner) other partners to do the same.

He was invariably a lively presence and active contributor at the Final Project Review when, in this case, the FOCUS Project was signed off, as complete and successful by the EU Reviewers. And Albert was always generous. In his own particular way Albert was a modest man. He always gave credit to other people, gently minimising his own, and his own Group's contribution.

A vital part of each Esprit project was the publication and exploitation of its results. Albert was good at both aspects of this, particularly for FOCUS. The UPC Group wrote papers about the results of a very fertile project and presented papers at meetings such as COMPSTAT, reaching a wide European audience. Some of the technical products from FOCUS – REGS and DOX – UPC exploited themselves and other IP influenced Genstat and delivery of forms of the NAG Library. And Albert always spoke with such flair and had an excellent eye for marketing, and sensing a product's market. Essential for all of us was to look to the future and to recognise ideas and material for the next project, and colleagues and groups to work with. The ideas of FOCUS carried forward into the Stable Project and influenced the Force4/R architecture (both individual Esprit 4 projects). In those halcyon days in Europe Albert and I, and our co-collaborator were always looking for the follow-on projects: to fund our research and to provide essential intellectual property for Community wealth creation.

3. STABLE

Project ESPRIT 4 # 22.832 1997-1998
STABLE, Statistical Applications Building Environment
Partners: NAG, RES, UPC, LIMAGRAIN, GESA, CEBAL ENTEC

Goal:
Use the visual programming capabilities of IRIS-Explorer and the algorithms of GENSTAT to build a cooperative tool for statistical programmers

This was probably the best Esprit Project in terms of partners, of research content and of results that I ever worked on. Albert valued it equally highly too. We all had such a great time working together, and achieved so much too. And all in just two years!

STABLE designed, built and demonstrated a modern Statistical Application Building Environment. The systems still looks "modern" now, eight years later. We integrated an existing application building system, IRIS Explorer with the algorithmic contents of an existing, widely used statistical system, Genstat and other available algorithms to give the new STABLE system. We then evaluated STABLE by constructing three different end-user systems, and modifying it in the light of feed-back from the application builders.

Specific characteristics were sought for the STABLE system:
- Use of the visual programming paradigm to provide enhanced ease-of-use and flexibility
- Facilities for new approaches to visualising statistical data
- Facilities for the development of end-user applications in "canned" forms
- Ability to incorporate alternative or customised user interfaces and to take account of native language and range of experience
- Full complement of reliable and powerful statistical techniques with access to numerical and other relevant capabilities

- Gateways to existing external systems
- Open extensible architecture for incorporating user-developed code
- Environment suitable for the research, implementation and promulgation of new algorithms
- Components easily distributable over multiple processors in heterogeneous environment

We were in our element. NAG had expertise in IRIS Explorer and the NAG Library : RES was the home of modern statistics (started by R.S.Fisher), incorporated into Genstat by Nelder and Payne : and UPC had excellent statistical knowledge, profound programming experience, application building know-how and direct contact with industrial users with application system needs (GESA and CEBAL ENTEC). Limagrain is a major European seed company (in France) requiring a system for the design and analysis of field trials.

Everything ran to time. All objectives were achieved. The project meetings had some of the best meals and social outcomes one could wish for (even satisfying the French!). And who could forget the parador we stayed at in the old town of Palma, Mallorca?

4. FORETess

This was a classis follow-on project. Its aim was the commercialisation of the results of the TESS project, which produced a system for automatic seasonal adjustment and forecasting of time series. Undertaken with VSN-International, under Albert's management it followed the well-prepared, well run course.

Albert particularly showed his mettle at a famous presentation of the project at the Annual Eurostat review meeting in Luxembourg.

5. @DAN

This was an IST-funded project concerned with the development of an advanced and highly secure mobile platform to support the digital economy. Amongst the partners were UPC and VSN-International. How typical of Albert that he should position his group to lead in the evolution of a fundamental new technology, and recognise that ideas and technology going back to FOCUS had a clear part to play in the new environment.

The project goals were:
- Development of a highly secure mobile platform to support the digital economy
- Production of two prototypes, developed using the platform:
  An application for the establishment of signature of administrative, economics affairs and managerial authorities at UPF
  An application for the provision of forecast demand using UPC methodology (CONFORT).
- The assessment of the two prototypes and the platform produced

UPC's primary roles were:
Material and handset selection
Platform integration and testing
Development of prototype
Testing and assessment

The UPC Group took over this last role from VSN-International to enable completion of the Project.

The @DAN project was forged from merging concepts in security, mobility and payment. The platform addressed two business scenarios, mobile payment and mobile signature. It was based on web services, an open standards-based technology for connecting disparate business applications. The "light client, heavy server" assumption balanced the processing weight through the platform. Security was based on a smart card. Payment via the Internet leveraged the virtual point of sales.

The objective of the UPC prototype was to build an application aimed at providing an affordable and flexible working access for organisations to the data included in their business processes. This required fast, reliable and secure data management compiled with secure access.

@DAN was, and remains, an innovative technology which has yet to be matched.

6. UPC as Project Co-ordinator or Partner

With Albert as the Group Leader, the UPC Team whether as Project Co-ordinator or Partner brought certain characteristics to any project in which they were involved.

- Excellent Scientific Content
- Outstanding Project Management
- Near to market – Well Defined Goals
- Accountability to Reviewers

Along with Albert, there was always the quiet management of Josef Maria Catot and the efficient organisation of Pia Margarita, bolstered by their tireless commitment to the activities in hand. The teamwork of the Group and their sensitive management of human relations was and is legendary.

7. Concluding Remarks

This meeting is not only to remember the research and managerial career of an outstanding academic but to celebrate the life of a very fine man.

With Albert whilst working on the European Union Esprit projects and presenting the results of our work to international meetings, we enjoyed life together too! We celebrated friendship and our European heritage together as we dined, enjoying excellent cooking and fine wines. We discussed life and politics, and suffered together over Barcelona FC and Nottingham Forest FC. There is so much more that one could say. Let us remember our friend and colleague Albert Prat who enriched all our lives and made us better people for knowing him.