Barriers to the Effective Use of FEA in Industry

Thoughts on Possible Issues

Before outlining some of the possible issues, it may be helpful to make clear the objectives of the Copenhagen workshop and the workshop following in June. It may also be useful to identify some of the challenges involved in doing this. The following points attempt to do this and I would ask all contributors to these workshops to bear these points in mind ….

1. To produce a report that identifies the barriers to the effective use of FEA across the industry sectors represented in FENET. Actions to remove such barriers may be the subject of future workshops.

2. One challenge is how to get a representative view of any particular industry sector. Industry coordinators are encouraged to try and obtain as wide a view as possible. It is suggested that a well-designed questionnaire may be one way of doing this.

3. Such a representative view should include all types of organisations within a sector, including SMEs. The needs in a sector may well be a function of the size and type of organisation.

4. If we interpret *Barriers to Effective Use* to include those organisations which have not invested in the technology or which may have invested at some time and let licenses lapse for example, then the challenge of getting a representative view becomes even greater. The scope of this exercise needs to be agreed

in Copenhagen and participants are encouraged to give this issue some thought. Addressing the needs of such organisations is important in the context of FENET and they should be included in this exercise if it is to be comprehensive and inclusive. Once again, the above questionnaire could be designed for a wider audience and the assistance of User Groups and vendor Sales/Marketing teams could be sought. Producing a comprehensive deliverable after the following 2 workshops may be rather ambitious however.

5. Capturing the European perspective is also a challenge. It would be all too easy to become parochial in our endeavours and we should try to be inclusive and representative. This may simply be a case of ensuring that any questionnaire goes much wider than FENET.

6. When considering the issues involved, it may be helpful to try to look ahead … to consider trends and possible developments.

7. This list is not intended to be prescriptive and it is hoped that the Workshop will lead to a refinement and extension of the issues identified.

8. A refinement of this list may be used as a template for the Copenhagen break-out groups, to ensure a reasonably uniform treatment across sectors.

Possible Issues …..

Education and Awareness

- Is industry in your particular sector aware of the technology and the competitive issues involved?
- How widespread is its use?
- Are there any particular problems related to its use in the supply chain?
- Are there traditional barriers to uptake associated with practice and convention?
- Are then any issues associated with Analysts and Designers and the way that some software products are marketed and used?

Staffing FE Products

- Is getting the correct type of staff a problem … are numbers of applicants a problem or is it quality?
- What is sector practice in using full-time and contract staffing …. are there any issues here?
- In terms of staff retention … are staff being attracted to move to other industry sectors?
- In terms of staff retention and recruitment … are companies who actively use the technology, simply poaching from their competitors?
- Is salary a real underlying problem?
- Do SMEs have any particular salary/career structure issues?
- How widespread is company investment in Continuing Professional Development … is this perceived as an issue in relation to effective use and awareness?
- Are there any good examples of effective use of mentoring, in terms of staff development … is mentoring an issue?
- How is dissemination of best practice conducted within organisations …. within your sector … across sectors?
- Is accreditation / registration of FE practitioners an issue within your sector. If it exists, is it seen as a barrier? If it doesn't exist, would it help provide more effective practitioners?

Cost of FE Products

- How affordable are FE Products? Presumably it is increasingly the case that for many organisations, the real costs are associated with staffing and software rather than hardware?
- How cost-effective are FE Products … is the business case easy across the sector and amongst all size/types of organisations?
- Is there a demand for *pay-as-you-go* that is not being satisfied? Would it be attractive to SMEs or perhaps they wouldn't have the appropriate staff anyway?

Functionality

- Are there any real software functionality issues that present a barrier to effective use …. not simply technical

but also in relation to robustness and ease of use (once again the needs of SMEs may be different here).

- Are then any hardware issues ... power, cost, openness, support for collaborative projects over the web (eg bandwidth) etc
- Is quality suspect in some areas? Is the lack of agreed effective benchmarks an issue in some areas?

Support (in the broadest sense)

- Is vendor support effective ... available, timely and cost-effective?
- Is your sector well-served by consultants?
- Is your sector well-served by Industry/University Partnerships (basic and applied research, Integrated Graduate Development Schemes, Teaching Companies etc)
- Are there any issues associated with trends in delivery of support ... hot-lines, FAQs, Internationalisation?
- Does the Web provide an effective means of support in your sector ..... newsgroups, discussion forums, sites etc?
- Any support issues related to NAFEMS?

Academic Perspective

- Is there a growing problem with graduate supply?
- Is there a general contraction in Science and Engineering in the University sector, brought about by falling students numbers, over-provision and even closure of areas?
- Has any changes in funding at undergraduate and postgraduate level had any effect on issues relating to the supply of well-qualified graduates and postgraduates?
- Is the changing educational scene, in terms of widening access, fees, less numeracy in school leavers an issue?
- Is there more that can be done to support the effective use of fea in the University sector?
- Does the web and the associated globalisation process provide a threat or an opportunity to resolve some of these issues?
- Getting a European perspective in this area is important.