

PLM Research: The Global Challenge

Hidden beneath the discussions at the two RSIG meetings in Brussels and Gothenburg is a surprising and stark conclusion: if PLM researchers do not act now and work as a team, there may never be any true PLM research.

A Meeting in Gothenburg

The PLMIG's Research SIG (RSIG) held a meeting in Chalmers University of Technology Gothenburg, Sweden on April 27.

The meeting was held to prepare proposals for EC FP6 Calls with closing dates in September 2005, work on the development of two PLM Research White Papers and define the next activities on the way to a joint academia/industry PLM Research Forum.

About a dozen researchers participated.

So What's So Important?

We could explain that the meeting was very productive, and that two separate proposals are being developed that will be submitted in September to apply for funding. We could report the discussions about the White Papers, on the subjects of:-

- Why PLM Is Important for Industry
- What PLM Research Should Achieve

However, those details are contained in the Summary Document that has already been circulated to RSIG members.

Looking at the two Research SIG meetings together, there is a much more important conclusion to be drawn, which is:-

- There May Never Be Any PLM Research

That is not a prediction, but it is a strong possibility unless researchers start to act together to overcome the barriers that exist. Given the multi-year lead time to develop funded proposals and to complete them so that new knowledge is gained, it is easy to see that time is running out.

Barriers to PLM Research

The meeting in Gothenburg identified many of these. PLM Research is collaborative by its nature, but academics rarely have funding to travel to meet each other until a proposal has already been awarded. The issues of PLM arise from industry, but industrialists are struggling to

understand the day-to-day problems and cannot see clearly which are the issues that will need academic research to resolve.

Calls for research projects from funding organisations do not ask for "PLM". They ask for other design or manufacturing issues, and PLM proposals have to be reshaped or cut in order to fit what has been offered.

Funding organisations do not understand the importance of PLM, but equally, neither do university vice-chancellors or principals. They will support their academics working on "product realisation" but wonder what PLM is.

When any group of practitioners meet to discuss PLM there is always a wide range of views, and academics are no different. Whilst this diversity of ideas is natural and thought-provoking, it makes it very difficult to present a clear and consistent Vision of PLM research to industry (so that they will participate in a research platform) and to funding organisations (so that they will support the projects that arise).

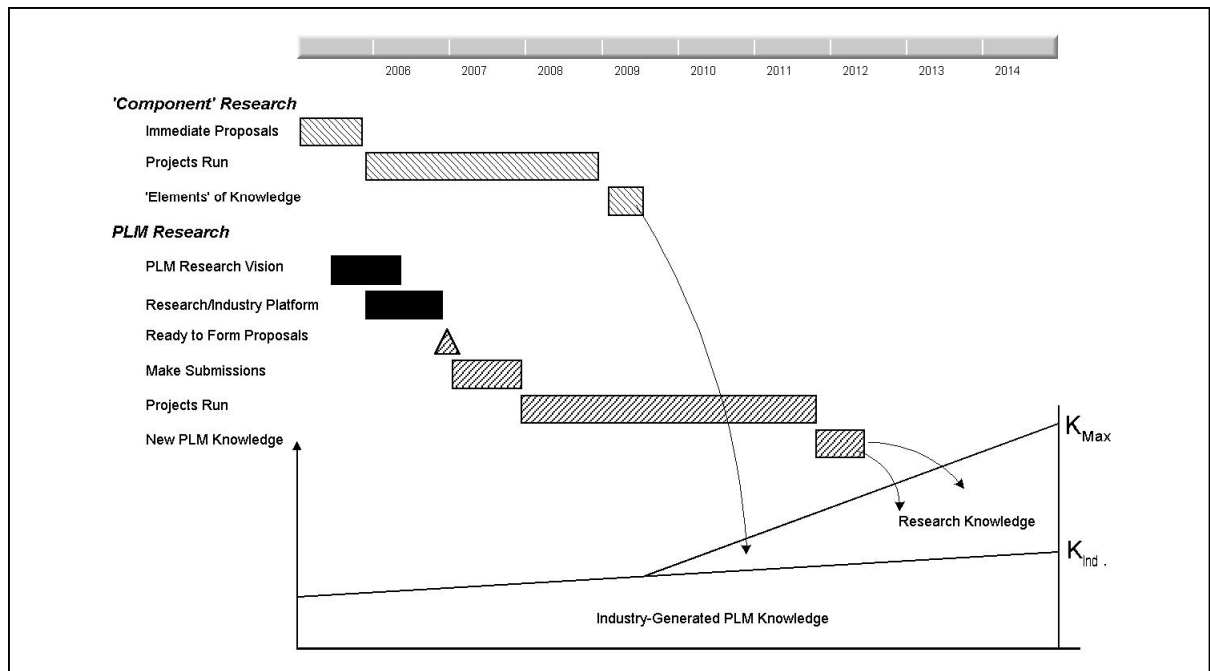
Most importantly, however, is the fact that this diversity of ideas (combined with the need to show a track record of previous research when submitting proposals) means there is a tendency for researchers to make proposals for work they are already familiar with.

Because PLM research is not well advanced, it is fair to say that the current topics deal with very small, well-bounded elements or parts of PLM. And that leads to the most important issue.

What Is PLM Research?

Everyone concerned with PLM knows that it is a truly complex subject, and previous issues of the *PLM Journal* have pointed out that academic research, by its nature, is always at a more complex level than the general subject.

In essence however, we would define PLM research as "Research into PLM" – that is, research into PLM itself and not merely into small elements of it.



Is It Possible to Research PLM?

If PLM research is such a huge and complex subject, will it ever be possible to research it completely? The experience of the ICP-35K Project indicates that the answer is “Yes”, in theory at least.

In 2003 a consortium of 55 organisations from all parts of the PLM spectrum formed the ICP-35K Project to submit a massive research proposal in response to a European FP6 Call that was open at the time. It would have involved €25 million of funding and 250 man years of work grouped into 12 overlapping subject themes, embodied in two practical “demonstrator” systems hosted by the industrial participants.

The exact details of the ICP-35K Project are not important here because the proposal was rejected and there will never be such a large Call again.

However, because it attracted such a large participant base, and because of the work carried out on the internal project framework, it did at least show that research into PLM itself is possible, and what can be achieved when research and industrial organisations work together with a common aim.

The question is now: “How can research into PLM be carried out from 2005 onwards?”

We have now returned to a state of fragmentation and lack of direction. The meeting in Brussels had not been able to generate a clear view of the future of PLM research, and no clear view emerged in Gothenburg. If the participants are of an academic standard equal to anywhere else in the world, it can therefore be assumed that no clear Vision for PLM research exists at all.

Time is Running Out

If no initiative is taken soon then the chance to do research into PLM itself may be lost. Current proposals into components of PLM will take a year to receive funding and another three years until the elements of new knowledge become available.

Before research can begin into PLM itself, it will need time to develop the PLM Research Vision and to use that to bring together a research/industry platform strong enough to generate proposals. It may take another year for submission and approval, and three or four more until completion.

This means that new research knowledge into major aspects of PLM itself may not be generated until 2012. In the meantime, industry and vendors will have been working to overcome their perceived PLM problems. Even though the level of industry knowledge ‘K_{Ind.}’ may be much less than the maximum ‘K_{Max}’ that could be achieved through research, industry may be satisfied with the results that have been gained and not see a benefit in participating in research projects.

The Global Challenge

To overcome this will need cooperation and teamwork from PLM researchers everywhere, and not just in Europe. The Research SIG meetings have shown that this can be achieved: that consensus of opinion can be gained and a clear plan of action defined.

The RSIG has already become a focal point for defining and developing PLM research, and has what we believe to be a critical mass of members. Its task should now be to develop the Vision and Industry Platform for the benefit of PLM research everywhere.