

OBSERVATIONS BY TWO TYPICAL INDUSTRY PARTICIPANTS

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(Presented by Esso Flyckt as a before the dinner talk)

1. THE CLIMATE IN FAVOUR OF COOPERATION WITH INDUSTRY HAS IMPROVED SIGNIFICANTLY IN 10 YEARS:

At the ECFA International Conference on Experimentation at LEP, Uppsala, Sweden, 1979, two industries participated: Scanditronix as local supporter, presenting their capabilities in Nuclear Physics accelerators and Philips Components on own initiative, presenting their Radiation Sensors. Both were very welcome, mainly to contribute to the costs of the conference coffee.

Now, 1989, at this ECFA Study Week on Instrumentation for High Luminosity Hadron Colliders here in Barcelona the ECFA organizers have been able to gather almost 50 industrial participants of about the right level and mixture of technological capabilities. To have hoped for more would have been too ambitious.

THERE IS HOWEVER, STILL A LONG WAY TO GO FOR FULL UNDERSTANDING OF INDUSTRIES PRIORITIES AND THOSE OF HEP TO REACH AN OPTIMAL COOPERATION.

2. TWO NEW ELEMENTS

- EUROPEAN R&D FUNDING?

This possibility has been discussed in HEP circles since long with no real actions or projects. The presentation of Mr White of SCIENCE must be seen as very positive and resulted in many discussions in the hallways, for and against; sceptical remarks from some industry participants claiming that the papers to fill-in made it almost impossible to make the flow of such money materializing.

It must also be taken into account that only 50% of the project is paid by Brussels, leaving the industry involved to risk some own money. Industry has thus still to be prepared to do so in competition with other non-HEP projects. The major problem to get projects funded is FORMING OF THE OPTIMAL PROJECT PARTICIPANTS GROUP.

The organization of this may mean more and very small and very dedicated workshops focussing strongly on the goals of certain detectors. The time scale is short for forming the groups and strong people functioning as the organizational motors are needed. Who are they?

- PRIME CONTRACTORS?

The presentation by Digiaco of Martin Marietta about prime contractors with system architecture responsibility for large HEP projects injected new material for the hallway discussions like a new wind. The acceptance of the idea was difficult by most Europeans because of PHYSICISTS MUST DEFINE THE PROJECT EARLY WITH DETAILED SPECIFICATIONS. HEP is not used to this and fears that "freezing" the project too early limits later possibilities of changing when new information becomes available. The discussions on this point will be very useful to analyse and prepare for the future very large projects.

3. INDUSTRIAL SPEAKERS

The speakers from industry are still too "commercial" and sometimes self-focused, giving no credit to the competitors, showing too many buildings and too much about today's products. As the climate changes one can hope for more information about R&D capabilities and also about capacity of certain products - a very important issue for the large quantities of the future. Few pointed out that HEP may help with the investments needed to produce these quantities or the capacity may not be there.

4. INDUSTRY'S WORRIES

- IS SSC REAL ??
 - WILL LHC COME ???
-) WHEN ?????
)

- ARE WE AT THE RIGHT CONFERENCE?

These questions are normal as we are still in an early phase of as well SSC as LHC detectors and caused by the

5. TOTAL CONFUSION

How will the final detectors really look?

There are many alternatives for each detector part as demonstrated in the parallel sessions. Many of these ideas involve new, inventive, hopeful ideas, sometimes looking like technological dreams. Moreover there are very many opinions about the realism of these ideas by too many oracles.

WHAT CAN THE NON-PHYSICIST INDUSTRIAL PARTICIPANT TELL HIS BOSS WHEN HE COMES HOME? HIS UNANSWERED QUESTIONS FROM THIS CONFERENCE ARE:

- CAN MY PRODUCT BE USED? If so
- WILL MY PRODUCT BE USED?

The last question is certainly real as experience with the L3 BGO shows that none of the original scintillator suppliers could profit from the final order after the initial work and investments they did. We already hear that the BaF₂ can not cost \$7/cm³ as predicted by the present industry, the hopeful price of \$2/cm³ from USSR is already taken into the calculations. Should the European BaF₂ industry invest? This is only an example, whatever it is worth but illustrates the difficulty of the industrial participants and their bosses. This uncertainty will certainly be reflected in sample quotes for R&D products

- SHOULD WE COVER R&D COSTS FULLY NOW? THE LARGE ORDER MAY NEVER COME?

SOLUTION: INCREASE YOUR UNDERSTANDING AS INDUSTRY BY GOING TO MORE CONFERENCES, LISTEN WELL TO THE ORACLES AND SPEND A LOT OF EFFORT NOW TO FORM YOUR OWN OPINION.

6. FACTS

THE TOTAL MARKET LOOKS FANTASTIC WITH 1-10 MILLION PIECES OF EVERYTHING, ALMOST TOO FANTASTIC. WHEN?

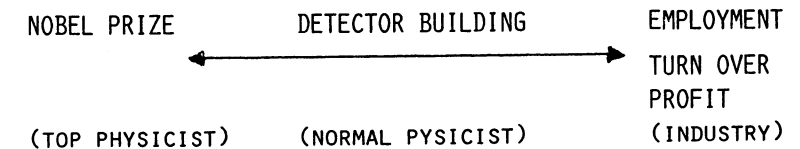
INDUSTRY CAN OFFER RELIABILITY AND QUALITY CONTROL.

INSTITUTES CAN OFFER TO MEASURE ALL PARAMETERS, OFTEN FREE OF CHARGE AND WITH PHYSICS UNDERSTANDING.

QUANTITIES MEANS LARGE SCALE INDUSTRIAL PRODUCTION.

It is important that HEP learns more about industrial structure and conditions. Industry is not a big black hole out there that automatically produces what you can not make yourself. Industry has lead times, plan their capacity to long term planning methods and has no sudden capacity for HEP just like that. As we talk about major quantities over several years for a large part of the components of the new collider detectors, such capacity will only be created against real HEP commitments and means a lead time.

THE PHYSICS COMMUNITY AND INDUSTRY MUST ANALYSE THEIR COMPLEMENTARY ROLES



WE ARE SURE THAT THIS MEETING HAS STIMULATED INDUSTRIES TO DRAW THEIR OWN CONCLUSIONS OUT OF THE APPARENT CONFUSION AND POSITIVELY WILL DO THEIR BEST WITHIN THEIR LIMITATIONS TO MAKE THE COLLIDER DETECTORS MATERIALIZE.

WE EXPRESS OUR THANKS FOR A GOOD CONFERENCE TO THE ECFA ORGANIZERS AND ESPECIALLY TO THE INDUSTRIAL CONVEYORS, MARKUS NORDBERG AND OSCAR BARBALAT.