

INTRODUCING NEW STANDARDS  
TO THE USER COMMUNITY

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Standardization is a necessity if technology is to move forward expeditiously and efficiently. Most industry research and development is geared towards immediate goals. Consequently standardization is needed to speed breakthroughs and permit technology transfer to manufacturing to take place quickly.

No company has a monopoly on innovation. However, there is a desire for each company to capitalize on its new assets; the ideas, patents, and designs, are frequently declared proprietary to limit the ability of others to capitalize on them. Problems, therefore, arise when two or more companies must pool their resources to achieve common or national goals. Then the success of the cooperative effort is impacted by confidentiality as well as inconsistencies and incompatibilities, and it is costly to introduce 'bridges' between design languages to overcome differences. A better solution is a 'common language' for communication. To overcome the impact of confidentiality, the key is in devising ways which would allow each design house to exercise full innovative control over their portion of the work while allowing easy integration of separately developed components.

VHDL will be an industry wide 'common language' for electronic design and, hopefully, will alleviate the problems mentioned above. We in IBM are proud to have been a part of this effort from the start. Its introduction to the design houses in our company was not without problems. Each design house must initially face a (real or perceived) period of reduction in designer productivity. This productivity hit is best absorbed when designers are moving from one product to another; midstream change of tools can not be tolerated. This changeover will be done only when they are convinced that long term benefits will accrue.

The introduction of new standards, such as VHDL, requires a set of new tools and a new methodology, a perturbation to what would normally be an evolutionary process. To motivate such extensive changes, industry requires well defined incentive. This incentive can take several forms:

- Company's desire to stay abreast of the technology trends.
- Advantages in design, verification and T & I.
- Improvements to the structured design process with increased facility/tools for management controls.
- Cost/schedule benefits (from a combination of the previous items).
- Edict by the government (in the form of RFP requirements), or from the company's management to realize other long term benefits.

The biggest deterrence to migrating from existing modes of operations is the entrenched knowledge and bias, and the existing tool set (that has evolved over many years of labor and investment). Furthermore, since the migration is best achieved using the leading designers, which are at a premium, a company loaded with potentially revenue earning tasks will find it difficult divert its most skilled people.

In summary, accepting new standards has an up front cost to the industry. Consequently the size of the potential (future) payback will determine the enthusiasm with which it will be accepted or absorbed into the 'system'.