

The PDM system ties together the WBS and product structures with the corresponding results of the tasks, e.g., SW code, 3D models, mechanical analysis and documents, and connects the Part/SW with corresponding models (3D, analysis, behaviour), process, documents, etc. In our old CM system, typically, only formal customer-specified/customer-required documents were stored, not the files or much of the other information generated in the projects. The PDM system also makes it very easy to include the informal and internal information. This sort of information is vital for knowing the reasons behind decisions, alternatives, trade-offs and discussions.

The PDM system will be coupled together with the other computer systems at different levels of integration. The M-CAD and E-CAD systems will be tightly integrated, e.g., the product structure (very detailed level) will be automatically generated in the PDM system on the basis of the information generated in the CAD systems (minimisation of non-value-added activities and increasing of quality).

In teamwork, access to the right information, in any format, is vital when needed. This requirement is supported by the PDM systems. All information is accessible for team members, when they need it, on whatever hardware platform they use (Mac, PC, etc.) and whether they have the native application or not.

With this system, all required information is guided through the project. The status of all information is recorded and connected to the respective working processes. The PDM system enables reuse of information, across project teams, since the information is easily accessible and sorted in structured ways.

Further, the PDM system also includes a "library" of approved standard mechanical, electronic and system components.

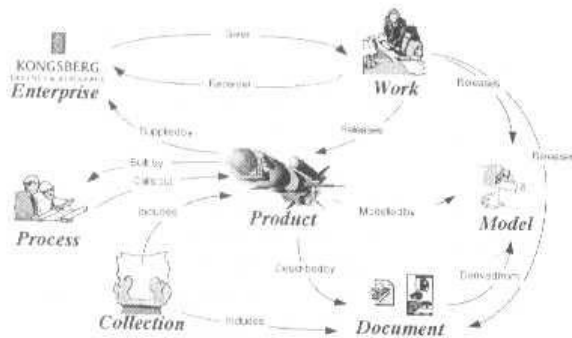


Figure 5 Integration and relation between the elements needed for product development

Figure 6 illustrates the total system integration for the life cycle of the product.



Figure 6 Total System Integration for the life cycle of the Product

The MRP and shop-floor control systems will be fed with data from the PDM system. This data will be Bill of Materials, effectivity information, references to production documentation (including videos), etc.

2.4 IS/IT Strategy

It became evident that we needed some guidelines when selecting systems to avoid multiple local systems performing identical tasks, e.g., cost managers looking only at their local costs and not the total cost for the project and the company.

We did not have a clearly written IT strategy when the project started. Afterward, it was evident that we needed an overall IT strategy on which to base our work. We then hired a consulting firm (ISI) to help us establish an IT strategy and support the implementation of the IPF project.

ISI confirmed our findings on business processes. Hence, we combined the processes and the IT tools more tightly, and started to document and structure the processes as shown in Paragraph 2.1.2. We also realised that the way we organised IT (in a computing centre) was not sufficient—we had to distinguish between the systems (IS) and the supporting tools/techniques/department (IT). As a result of our work with IT strategy, we reorganised our IS/IT functions for more effective use of our computer tools.

2.5 Overall interaction of the sub-projects

The IPF project had a time frame of approximately three years and was run in parallel with the ramp-up phase for the first customer of the IPF project, NSM. This short time frame resulted in a need for performing several sub-projects in parallel which has been a complicated and difficult task, but has made the interaction and mutual influence of the sub-projects easier and more efficient.