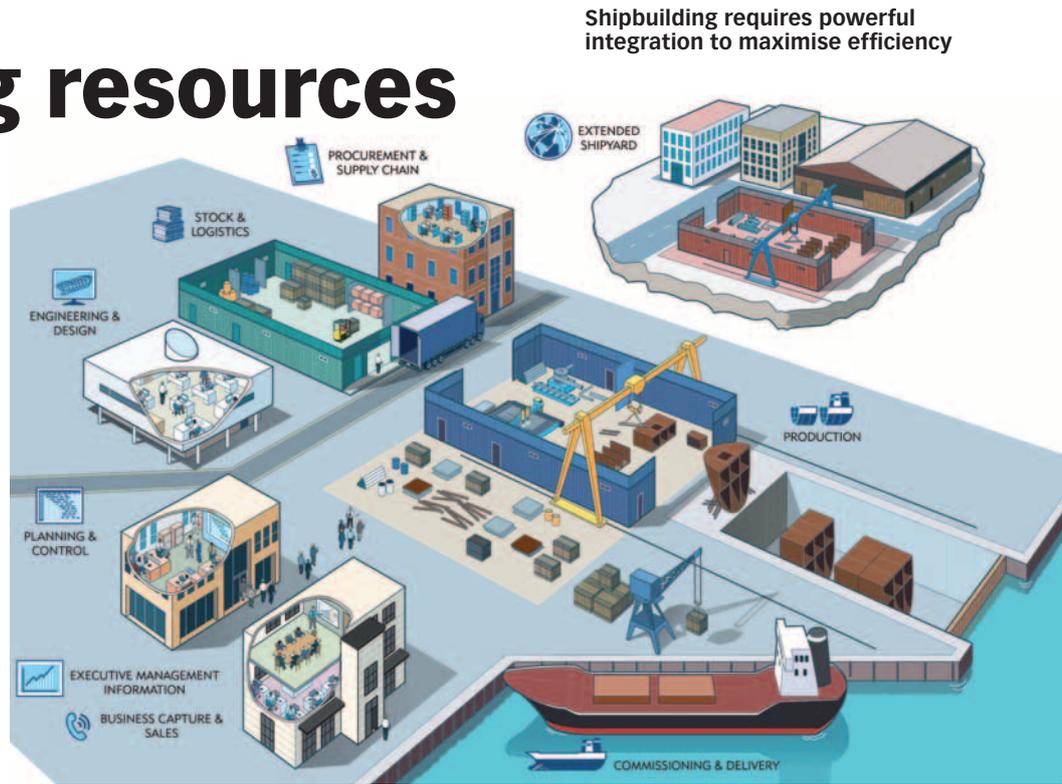


Optimising resources

INTEGRATED SHIPBUILDING A wide range of shipyard disciplines are addressed by Integrated Shipyard solutions under one collaborative information management framework. The timely measurement and availability of accurate project, material and production information significantly improves productivity and profitability, reducing overall production cost and time.

Stephane Neuveglise



Shipbuilding requires powerful integration to maximise efficiency

In mid-2010, AVEVA completed the acquisition of Logimatic's Mars business, which introduces advanced marine materials

and resource planning software to the company. To enable shipyards to completely synchronise all aspects of their

design, production and information management processes, an "Integrated Shipbuilding" strategy was subsequently developed. This strategy involves the use of a collaborative infrastructure (the AVEVA digital information hub) to combine a comprehensive set of planning, engineering, design and information management solutions, including AVEVA Marine, AVEVA Mars, AVEVA Net and AVEVA Global. This interrelationship among solutions is delivered without the traditional close-coupling that has limited design and engineering interoperability. It enables the management of virtually all activities within the shipyard processes, but without limiting the user in his choice of solutions.

- ▶ Production
- ▶ Commission and delivery
- ▶ Extended shipyard

Shipyard business intelligence

The AVEVA Mars BI-(business intelligence) module is a key component of the comprehensive Integrated Shipbuilding strategy, which was designed in consultation with shipyards. Developed for rapid implementations and simple applications, the module also reduces deployment costs, and forms a naturally close fit with shipbuilding-specific business processes.

The BI-module is based on the following three principles:

Tight data integration

The AVEVA Mars BI-solution delivers a flexible and dynamic report generation. This enables an easy setup modification of both regular and on/off report templates. By definition, this can only work effectively if the reporting module is tightly integrated with data that are already encapsulated within the wider planning and materials management system. Conventionally, this has been achieved by the use of a separate (dedicated) database containing replicated production data that

Diverse business operations

To capture the varying needs and interests of different groups within the shipyard, the ship construction process has been divided into nine key business operations:

- ▶ Executive management information
- ▶ Business capture and sales
- ▶ Planning and control
- ▶ Engineering and design
- ▶ Procurement and supply chain
- ▶ Stock and logistics

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need to be indexed to ensure an acceptable performance. To improve efficiency, the BI-module is applied directly on top of the main Oracle database, using standard Microsoft development and integration tools. It presents the information kept in the database tables in a recognisable format (e.g. "Purchase order number", "Supplier name", "Production Group", "Department", "Order number" etc.). All data – whether production-specific (like materials, parts lists, stock picks, activities, jobs) or enterprise-related (like purchase costs or clocking-in times) – map straight from the database into the same fields in the BI-module.

Reporting flexibility

Reporting is the key to any effective overview and measurement of business processes; however, the reporting format process must be able to accommodate diverse users and information priorities. The Microsoft application on top of the database in the BI-module translates the power of the Oracle relational database structure into an accessible and meaningful tool for the user, and ensures that the data can be managed using simple and familiar office applications like Excel. Thus, it becomes easier to generate flexible reports and to define and create reporting templates.

Shipyards reporting is based around some broadly standardised categories that, individually, may nonetheless require significant customisation to meet the specific needs of the yard. In the BI-module, these categories, which are called Views, represent the various areas of the business. There are about 100 Views, covering areas such as procurement, warehouse management, budgeting and cost follow-up, production performance etc.

The customisation is provided by the user's ability to specify the fields and the information to be output from the database for each of these Views. The user can also define what further operations should be performed on the data and who should receive the report and with what frequency.

Customising can also provide a variable level of information detail, as well as differing degrees of information access, to suit different types of user.

Information delivery

Furthermore, the BI-module gives attention to the dissemination of reports to the various users at the shipyard. Certain users may proactively log into the BI-module and retrieve the intelligence themselves, but this is not suitable for everyone. The BI-module addresses this by "pushing" reports through standard e-mail clients like Microsoft Outlook, so that the information can reach all shipyard disciplines at all levels of authority and engagement.

However, the ability to generate and disseminate reports is only as useful as the accuracy of the information contained. The database regularly changes as users across different departments update and add information, so it is essential that those changes are automatically reflected in the templates.

As soon as a report template has been defined, the module is automatically enabled to extract updated database information whenever the report is executed, and present the results in the predefined template format. The templates in the BI-module can be defined very easily; the standard pivot table and pivot diagram functionalities available in Excel can be used to set up the customised format that is of specific interest to that particular user.

Conclusion

The BI-module helps to provide lucidity and measurement, which are critical components of every shipyard's aim to minimise waste and optimise resources. Yet, the main prerequisite for an economically and operationally successful shipyard is to unite every stage of the design and construction process, through technology, data, and information.

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