

Reporting and Analysis Tools in Modern Business Software

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Constant development of technology has made the storing and processing of ever growing data volumes considerably cheaper. Therefore the idea of economising on data volumes has lost its importance for most companies, as even the storing of the "production" of systems producing thousands of records a day does not bring along considerable costs. On the other hand, growing data volumes call for more efficient reporting and analysis tools.

Classical Reporting

A typical reporting kit to be found in almost any business software package consists of a number of ready-made reports, i.e. different standard reports designed to be printed out on an A4 format paper. Queries are limited to the fields of the data table connected to the report. Sometimes you can narrow down your query by using logical operations (e.g. the customer name contains the word „plant“ or „factory“), which gives you a more specific report. Usually these reports are created using some widely known report generator tool like e.g. Crystal Reports or ActiveReports. Some business software solutions have their own report generators (e.g. HansaWorld Enterprise, Navision), that can be used for either customising the standard reports or for creating new ones.

There is more freedom with the creating of new reports when the data is stored in a relational database system – better known ones in Estonia are Microsoft SQL Server, Oracle, Sybase, etc. This allows you to create an output of any level of complexity (e.g. specific tax reports, etc). Sometimes reports based on queries made directly from the database appear faster than ready-made reports (the difference may result from the optimisation of the queries or the different methods of making a query). Here the database structure of the business software starts playing an important role (i.e. how easy it is to make a query that needs to collect data from different data tables). The SQL version of HansaWorld Enterprise is a good example for very specific reports, as data records often form up one logical data object and are not scattered between several different data tables (which is the case with some normalised databases). As data storage capabilities have rapidly expanded and storing is cheaper and cheaper, normalising has become relatively unimportant. However, many business software providers have not changed their data structures for different reasons.

The possibilities with classical reporting are limited (especially for companies where reporting needs change fast), as it requires very precise queries and output formats. Also with larger data volumes the queries appear too slow for the decision making process. As classical reporting usually turns directly to the database containing the transactions (i.e. the database actually used for work at any given time), it uses the database server resource and slows down the work. One possibility would be to "mirror" the database to a separate reporting server, but in that case the data received will not be real time any more, and the running costs of such a system are high.

As for web based reporting – these are normal reports that are presented to us via a web browser. On the database level there is no difference as for how the report is generated, the output is just made available in the html format via a web server (i.e. a web page). In general web reporting is slower and poorer in design. In practise it would be better for a remote user to use a thin client of the business software (e.g. any

HansaWorld Enterprise's client program can be used for a secure and fast connection with the database over the internet); or a terminal solution (e.g Windows Terminal Server or Citrix).

Financial Reporting Tools

As for classical financial reports like the balance sheet, the profit & loss report or the cash flow statement, most business software solutions have either special functionality that allows you to define these reports, or they use separate financial report generators (e.g FRx – Financial Report Extender). Typically financial reports are defined line by line with some informative text and the account(s) necessary for calculating the balances or turnover figures. Financial reports allow you to calculate multi-level row totals. It is normally also possible to specify by which analytical position (also called objects, dimensions, segments) you want the data presented. In most cases it is also possible to send financial reports straight to Microsoft Excel for further processing. With financial reporting it is important to have the possibility to "drill down" from the report figures to the underlying transactions in different registers.

Analytical Queries instead of Classical Reporting

One way to leave the limited classical reporting behind would be to start using analytical tools, one of the simplest of which is Microsoft Excel. Similarly to the above-described queries from an SQL database, queries can be made straight from Excel, i.e knowing the database structure, you can easily create an Excel spreadsheet that receives up-to-date information directly from your book-keeping database.

Still the greatest effect is achieved by collecting all the data necessary for your analysis into a special analysis database, which comes free with the Microsoft SQL Server (Microsoft SQL OLAP Service). Here you need to specify certain indicators and their characteristics by which you want data collected from the accounting database. Once again you can use Microsoft Excel for carrying out the analysis, but there are also several special business intelligence tools available (e.g ProClarity, QlikView, Business Objects, Hummingbird, Oracle Discoverer, etc). It is important to create a system of characteristics by which the data will be presented. Such characteristics are normally called dimensions and the structure of different levels is called a hierarchy. As the figures being analysed can have many different characteristics, we often talk about multi-dimensional analysis. The main advantage we achieve here, as compared to however complex standard reports, is the possibility to view the data from any angle you need, and change the viewpoint whenever questions arise during the analysis.

As the reporting needs differ from company to company, normally no ready-made business intelligence solution is included in the business software package. It is therefore important to grant access for the analysis tools to the business software database – here the advantage of using SQL databases becomes clear. It is technically possible to save the analysable data into a local data cube, i.e the analyst does not even need to be connected to the central server all the time. Very flexible both for technology, as well as for contents, it gives the company a wide "playground" where they can use their imagination to create a business intelligence system to answer their specific needs. Thanks to information made accessible, each company can considerably improve the quality of their management decisions.

Comparison of the Reporting and Analysis Possibilities of Different Software

Let us now compare the reporting and analysis possibilities available with different business software solutions.

	HansaWorld Enterprise	iScala	Navision	Axapta	G r e a t Plains
Own report generator	yes	yes	yes	yes	no
Financial report generator	yes	yes	no	no	FRx
Quick queries	no	yes	no	yes	yes
Search in reports	yes	yes	no	no	yes
Drill-down in reports	yes	no	no	no	yes
External report generators	CR, AR*	CR	yes*	yes*	CR
Web based reporting	yes	yes	no	no	yes
Business intelligence possibilities	yes	yes	yes	yes	yes

*It is possible to use external reporting tools with SQL database, but normally just the software's own reports are used

CR – Crystal Reports

AR – Active Reports

FRx – Financial Report Extender

In conclusion I would like to point out that despite numerous possibilities an average company tends to be rather conservative with satisfying their information needs – it is common practise for managers to ask their employees for a sheet of paper bearing the report, rather than open an analytical overview of the situation on their computer screen. At the same time it would be relatively easy to make the procedure of finding information fast, precise and independent from others. Modern business software solutions are being developed in the direction where, in addition to the data generated by the internal accounting of the company, it is also possible to conveniently get management information via other systems. This, in its turn, broadens the use of business information systems and increases their importance in efficient management.