

Bringing intelligence to the terminal business

Prognoz believes terminals can leverage its Business Intelligence Platform to bring the benefits of big data to container terminal management

"Big data" is a buzzword in the IT industry at the moment. It refers to a collection of data sets that is too large and complex to process using standard database tools, requiring instead specialist software that stores, sorts and analyses large amounts of data.

The benefit of having more data is to find and understand complex relationships between events. For example sorting dwell time periods by line might help a terminal better plan yard positions for import containers. But if a terminal could further "drill down" and more closely match dwell time to container contents and seasonal factors, it might find other useful relationships that help it

understand what causes high dwell time factors.

Operational overload

Prognoz is a multi-national company with its origins in Russia. It has over 20 years' experience in helping businesses use data to gain insight into and improve business efficiency. It is now developing its international ports business through its Brussels-based European office, headed by Sylvain Pillons, who is managing director, Europe.

Pillons explains that what terminals commonly refer to as Business Intelligence (BI) is really only retrospective reports and "dashboard" type tools with a narrow

operational focus. Terminals obviously have a keen interest in getting real time metrics like berth moves per hour, crane moves per hour and yard equipment productivity. BI, however, is about stepping back and taking a look at the bigger picture to understand what factors influence operational performance and evaluating the terminal as a business more than a process.

Big data and the TOS

TOS providers offer a variety of reporting tools and some are now talking about how terminals can use "big data", but Pillons said terminals need to be clear that BI requires more than just the TOS.

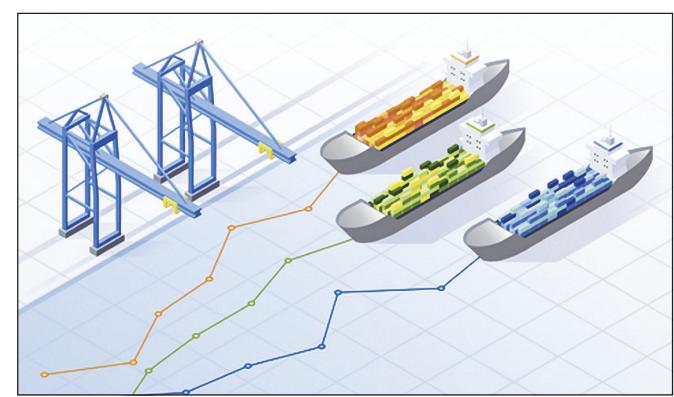
It encompasses data from financial systems, human resource applications, terminal-specific applications (fleet management software, maintenance applications, berthing applications and the TOS) and wider data sources like trade and economic data.

Prognoz's expertise is in integrating the software tools to capture data from such a wide variety of sources and process it into meaningful business information. Its flagship application is called Prognoz Platform and has data storage, monitoring, reporting, analytical, modelling and forecasting capabilities.

Port analytics

Prognoz has launched its Port and Container Terminal Analytics BI solution (PCTA). It is billed as a "complete analytical suite designed to perform key tasks associated with port terminal management". PCTA consolidates data in a data warehouse that supports its OLAP (online analytical processing) multi dimensional designer query, dashboard designer and report designer.

Prognoz manages data using its "Toolkit" of data collection and



Prognoz is looking to bring its business intelligence expertise to the container terminal market

management technologies. All data are stored as "metadata" in a series of dictionaries that are interpreted by algorithms and other tools that can be customised by the user. For PCTA these tools interpret and present data in four core modules: Reports; Freight Turnover Analysis; Port Operational Analysis; and Executive Dashboards.

Reports can be generated on operational and financial areas of the terminal and the module comes with a list of preset options. The Freight Turnover Analysis module is designed for online monitoring and analysis of cargo data by category, container attributes, destination and origin details and vessel details.

The Port Operations Module contains most of the key indicators and operational metrics ports will be familiar with today. Users can customise the methodology behind key indicators like crane rates, crane utilisation and vessel rate and the composition of summary reports.

Executive Dashboards are designed to show summary data to management and allow executives to drill down into the underlying data behind key trends. Average dwell time, for example, is displayed as an indicator and can then be further broken down to show more detailed attributes of high dwell time containers and their cargo.

Other data streams

Pillons said terminal management can leverage Prognoz to bring in other data streams from sources like Reuters and Bloomberg and organisations like the OECD and the World Bank that publish trade data. Other Prognoz customers are using such data to monitor key global events and forecast how they impact their business. This requires having the ability to access and represent data in various "slices" that highlight inter-relationships between events, which is part of the company's core expertise.

Pillons observed that ports are a key source of trade and economic data for other industries, but are not actually good at using wider macroeconomic data

for forecasting themselves. He attributed this to an overemphasis on operational bottlenecks and process productivity and not enough understanding of the financial outcomes of capital spending.

Prognoz is also surprised at how little ports seem to evaluate the financial implications of large capital items. It has heard the view that modelling the real cost and return on investment from different purchasing and maintenance strategies is just too difficult, but does not believe this should be the case.

Prognoz has modelled railway maintenance in the transport industry and produced data-led information that successfully delivers value to its customers. The main difference, Pillons said, is not the different nature of the business but that management recognises the value of investing time and effort into deciding what data they need to objectively evaluate maintenance spending.

"Other businesses are much further ahead and the benefits are significant," he concluded.

Seeking partners

Prognoz has two strategies for marketing BI tools to the port market. Firstly, it will work with terminals directly. It has installed PCTA for Abu Dhabi Terminals (ADT) and is now looking for other terminal operators willing to partner on developing management KPIs.

Pillons said terminals are very detailed about the operational areas and KPIs they want to track and manage, but are less clear about financial performance metrics, benchmarks and KPIs. It is now looking for lead customers to help develop these.

Prognoz will also work with partners, particularly TOS providers, that have well established relationships with terminals. TOS providers are also looking at offering their own BI applications and these could be "powered" by the Prognoz Platform.

Prognoz already has an agreement of this nature with Russian TOS supplier SOLVO, which is expected to launch a BI tool shortly. □

Prognoz Port and Container Terminal Analytics has been designed with a modular architecture framework that can be extended as required

