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Special technology report Planning & forecasting

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Being prepared

Manufacturing & Logistics IT spoke to a number of key spokespeople within the Planning & Forecasting vendor and process management community about the current talking points and key developments within to this mission-critical technology space.

I n this report, we focus on many of the current main talking points within the planning & forecasting software space – an area that can cover everything from predicting demand volumes right through to planning and scheduling production capacity on the shopfloor – and more besides. So without further delay, just what are the key market trends and notable technological developments that manufacturers and logistics professionals should be aware of with a view to optimising their daily operations? Malcolm Stork, managing director EMEA at Demand Solutions, reports that he is currently seeing increased interest in the area of collaborative forecasting. "Getting a demand signal from closer to the customer can significantly reduce the amplification of distortions in demand and improve forecast accuracy," he commented, adding: "Combined with easy-to-

use inventory optimisation tools, this can make enormous improvements in inventory levels and mix." According to Stork, another core area of development is Sales & Operations Planning (S&OP). "There is still major interest in this area," he said, "and now with dedicated tools available to support the process it couldn't be easier." However, Stork insists that the process remains king, and without a real willingness from the management team to make it work companies will continue to struggle.

Hugh Williams, managing director of Hughenden Consulting, agrees with Stork, citing one current keenly talked about area as being S&OP, in addition to demand planning (forecasting). "Demand planning is reasonably well understood, although businesses do not yet generally understand what they need to do to implement a good

demand planning process," said Williams. "There is a debate about the difference between S&OP and integrated business planning (IBP), which is serving to confuse more than clarify. IBP/S&OP, however, is where we have seen the emergence

Malcolm Stork

Demand Solutions

of a number of specifically designed software solutions – and where other software houses say they have software without really understanding what this process requires. The economic circumstances of the past couple of years are still the drivers for businesses to improve these processes, although there is probably more awareness in the boardroom about the value than previously seen."

In terms of current technology highlights to be aware of, Andy Latham, managing director of K3's Business Technology Group, highlights multiple resource scheduling, which allows all required resources (such as tools, jigs, space

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Hugh Williams

HUGHENDEN
People and Process

and skills) to be planned for each job; therefore eliminating wasted time spent waiting or searching for missing items. Ideally, says Latham, each resource or group of resources would have their own availability calendar. Having real-time capable to promise commitment as sales orders are taken allows customer-facing users to offer customers a date by which delivery can be made. Latham points out that in order to arrive at a date at which goods in the required quantities can be delivered, a number of factors need to be taken into account; including availability of raw material and sub-assemblies as well as available capacity at the work centres.

In terms of market demand for advanced planning & scheduling (APS) software systems, Mike Novels, CEO of Preactor International, comments that he has seen a definite increase in both interest and actual investment since the financial crises started to abate. He states that most APS suppliers are reporting increased activity and that there have been various reasons that have been put forward for this. One reason, believes Novels, is the convergence of lean manufacturing principles with APS solutions. "Companies got so far with lean initiatives at shop floor level and were looking for the next step," he said. "In parallel, APS solutions were more and more looking at improving flow at the shop floor and removing waste in the form of setup time, queuing time etc to reduce make-span. In fact lean manufacturing principles and scheduling solutions seek to do the same thing and seek to 'pull' through production based on demand. This convergence of technology and philosophy

may be the reason for the uptick in demand for APS solutions."

Novels added that another factor that has contributed towards greater take-up of APS solutions is time. "Anybody can create a good schedule given enough time," he said, "but the variability in demand and frequent changes in priorities mean solutions like APS products give the planner the opportunity to change the plan more frequently and test alternatives before releasing to the shop floor." In many of Preactor's most developed markets, Novels is also seeing a trend towards having a common ERP and common APS solution across multiple plants in different countries. "Typically a customer will want to have a single 'core model' to which minor changes can be made to meet local requirements," he said. "Once this is done it opens up the possibility of sharing resources across those plants using the same techniques and features to optimise their usage." Another trend cited by Novels is the increased interest in manufacturing execution systems (MES) by users and the role that APS plays in that space. "Most MES suppliers have very little detailed scheduling capabilities," he remarked. "We know from independent research that the benefits of using ERP with APS can be dramatic and the same has been reported for MES with APS."

Atul Chandra Pandey, industry head for Enterprise Application Integration and Services at Infosys Technologies, explains that, based on his discussions with customers in the manufacturing space and on studying current market trends, he observes that investments in the traditional supply chain planning

Mike Novels

Preactor

systems are being sustained rather than increasing by any notable level. "The wave of supply chain planning solutions based on ERP II (eg. SAP APO, Oracle APS) seems to have levelled out," he said. "Customers are looking at interconnected systems; especially as the distinction between planning and execution is blurring. Thus, interest is rising in systems that go beyond traditional strengths in planning, forecasting & scheduling and include additional capabilities such as rapid simulation/analysis, and collaboration (supply and demand) at multiple network tiers."

> ❝ There is a debate about the difference between S&OP and IBP, which is serving to confuse more than clarify. IBP/S&OP, however, is where we have seen the emergence of a number of specifically designed software solutions — and where other software houses say they have software without really understanding what this process requires."
> — *Hugh Williams, Hughenden Consulting.*

Pandey is also witnessing significant momentum in enhancing S&OP or Integrated Business Planning (IBP) capabilities, and points out most leading vendors (eg. Oracle, JDA, Kinaxis and SAP) are pitching strongly in this area. Moreover, he says, the best-in-class planning pitch is extending to encompass integrated value chain planning and control. "A number of my customers are driving leading supply chain vendors to offer these enhanced capabilities, with Oracle Rapid Planning and Kinaxis high on the radar," he said, adding that investment in supply chain analytics is also on the rise. "A closer look at most vendors in the space shows enhanced reporting and analytics capabilities in their offering stack," said Pandey.

> ❝ Anybody can create a good schedule given enough time, but the variability in demand and frequent changes in priorities mean solutions like APS products give the planner the opportunity to change the plan more frequently and test alternatives before releasing to the shop floor."
> — *Mike Novels, Preactor International.*

Customer-specific

Johnny Hughes, business development manager of Ortec UK comments that current innovations/developments in planning related software and solutions are becoming increasingly specific to the customer, with a major focus now on the operational demands of each relevant industry. "Companies using advanced planning solutions are hugely involved in the development," he said. "We have found that full operational use of the software in a live environment offers a great opportunity to identify any need for customisation. For this reason each of our solutions has many different varieties – 'made to fit'. With a strong belief that the role of the end user is expanding and becoming more analytical, planning-related software will extend to accommodate this evolution."

❝ Multiple resource scheduling allows all required resources (such as tools, jigs, space and skills) to be planned for each job; therefore eliminating wasted time spent waiting or searching for missing items."
— Andy Latham, K3.

Paul Lane, sales director at Seiki Systems, reflects that, with extreme pressure to not only maintain but improve business performance, one of the greatest drivers for the implementation of Seiki's finite capacity scheduler is to fully extract the benefits of real-time visibility of work in progress. "Organisations need to be more agile in today's highly competitive market, which means being able to respond quickly to changes and to deliver exactly what customers want, when they want it," said Lane. "Finite capacity planning supports this by only allowing operations to be planned when resources are available and in optimal sequence that ensures efficiency and output are maximised. The Scheduler, as a dynamic solution, also provides real-time visual consequences of any changes to planned operations. This provides a significant advantage to companies from a customer satisfaction perspective – ie. confidence in

delivery promises will be higher, but critically it also means materials are only ordered when they are needed, which can obviously have a big impact on cost reduction initiatives by keeping inventories low."

Furthermore, Lane adds that visibility of works order status can accelerate throughput but highlighting potential bottlenecks and resource shortages that can then be avoided. "All operations are planned on factual capacity information – what is truly possible with the resources available – so outsourcing can be reduced by maximising the utilisation of existing resources," he said. "This means that additional overhead costs such as overtime can be minimised or planned for if required. This is critical not only for current works orders but it also enables organisations to assess capacity for taking in new work. The ability to graphically forecast resource capacity and undertake 'what-if' planning can be extremely beneficial throughout the organisation; not least for sales teams looking to sell time and services profitably and competitively." Lane added that a key point in all of the above is that the Scheduler provides all stakeholders within the business with the control and visibility to achieve greater flexibility and responsiveness to customer demands.

Increased functionality

Kevin Bull, product manager at Columbus IT, points out that today's leading ERP systems have been extended to include more and more functionality to assist the business in its start-to-end cycle of planning scenarios. He explains that many ERP systems have now taken on functionality that was once the exclusive domain of specialist software systems. Bull says some prime examples of this can be found in the areas of demand planning and production capacity planning. He commented: "From the initial sales forecast through to material planning and shop floor production sequencing, business planners are able to use a single system, with

Andy Latham, managing director

k3

Business Technology Group

consistent tools, a single view that shows demand, supply and resource utilisation and without the risk and time delay that is presented by systems integration."

Bull then focused on specific tools and their benefits: First, he looked at those related to demand planning. "The ability to generate a reliable demand or sales forecast is a dark art in many businesses, and almost always requires some form of human interpretation or input. Demand planning tools do, however, allow the business to quickly identify trends and patterns in historic sales and then apply these to produce a system generated forecast. Where goods are retail goods, it can be advantageous for the business to be able to produce forecasts from actual consumer sales information, often from retailer POS systems. One key aspect to forecasts generation tools is the ability to visualise data at many different levels. When a business has extensive product ranges it can often be difficult to 'see the wood for the trees', so it is important that the demand planning tools are able to sales forecast charts in many different views – by market place, region, product category, by time frame, etc. Equally important can be the ability to manipulate the changes to the forecast at any level of the hierarchy and disseminate the amendments downwards through the product and customer structure.

Next, Bull looks at capable to promise. "When customers place a sales order they will often ask 'When will it be with us?'. Without a system that is able to quickly return this information, taking into consideration material availability and production capacity, the customer is often presented with a lengthy delay while the sales order clerk places calls round the business. Modern ERP systems are able to provide this information quickly and easily during the sales order entry process - the customer can be informed quickly and accurately of when they can expect their goods to be delivered. '

Bull then moves on to production scheduling. "When it comes to production scheduling

there is commonly a vast plethora of considerations and conditions that affect the optimal sequence and resource selection. These 'rules' are often inside the head of a single business planner that will manually generate production plans, often using spreadsheets. This can be time consuming, lack visibility and can represent a significant risk to business continuity. To enable a system to perform the task of production scheduling it has to be able to define and utilise the 'rules' that the production planner uses. These rules need to cover many aspects of the business including: material availability, plant maintenance, tooling requirements, staff levels and shift patterns, staff skill sets, sub-contractor availability, transportation, storage space, and preferred sequences to minimise set up times. Without this level of sophistication the best that can be achieved is a high-level rough cut capacity plan. Of course there will always be occasions when the planner will need to adjust the system-generated production plan, and this is where a highly visual representation of the plan becomes essential. Through Gantt chart views the planner is able to 'drag and drop' to manipulate the production plan, whilst still ensuring that material availability and sequencing rules are adhered to."

In sophisticated production supply chains, Bull points out that there can be a significant element of multi-mode production; with discrete works orders, process batches and lean kanbans all having a role to play. "In these environments it can be difficult to find a single business system that is capable of managing the different principles and practices behind each production

**Kevin Bull,
product manager**

COLUMBUS IT

methodology," he said. "Microsoft Dynamics AX 2012 is a great example of a complete business solution that is able to model all three models of manufacturing within a single environment, using highly intuitive visual planning tools for production

orders, batch orders and lean kanbans."

Lastly, Bull looks at monitoring production performance. "With a production schedule in place – often with just-in-time outputs – it is important that the business is able to monitor production progress to identify issues and the impact that they may have on customer service level performance," he said. "Systems that incorporate manufacturing execution controls are able to provide the production manager with real-time visibility of progress; whether it be through workers that are scanning complete production using barcodes or by integrating with shop floor equipment such as counters or weigh scales."

Better end-to-end visibility

Karin Bursa, vice president of marketing at Logility, points out there are three key areas of interest that Logility is seeing at the moment; advanced demand planning techniques such as attribute-based models, inventory optimisation, and sales & operations planning. Bursa commented: "As supply chains become more complex and connect several partners from around the world, companies need better end-to-end visibility (macro and granular), improved customer service, the ability to more accurately forecast demand and a supply chain network response that meets the financial and service goals of the organisation. These are three key areas that directly impact these needs."

Alexandria Rumble, global product marketing director at TXT, observes that there is a definite move towards better use of planning & forecasting software. She commented: "The functionality has been available for some time – in terms of attributes in planning & forecasting as well as attempts to segment product and services – but we are finding that there is a greater focus on analytics, which has triggered innovation and is also forcing traditional business intelligence (BI) platforms to rethink their strategy and develop their offer further." Rumble is also seeing that isolated point solutions for specialised problems are not an immediate choice for buyers as they can create new islands of functionality. "Buyers are looking for innovative solutions

> " Integrating the ERP system with external systems – such as finite capacity planning or forecast generation tools – is only the start, as the same connectivity tools can be used to manage supply chain integration, EDI and web services etc."
>
> *– Kevin Bull, Columbus IT.*

that can connect multiple business users in multiple functions, and provide analysis in a connected way; this is particularly true of areas like S&OP and IBP," she said.

According to Rumble, the economic crisis and the need to make better decisions have definitely created a surge in demand for new capabilities. This, she believes, is outstripping the capability of BI platforms and stretching the skills and resources of BI teams. "It is true that historical reporting remains important, but requirements for predictive analytics and event processing to maintain real-time views are growing quickly," commented Rumble. "Awareness of the need to interpret data for better decisions and improved processes has never been greater. Interpretation is best done when traditional historical reporting is augmented with real-time information and predictive analytics. To meet new requirements, specific analytic solutions are offered; standalone or embedded in business applications, including those delivered via SaaS."

Improved information flow

In addition, Rumbles believes the growing use of smartphones and tablets raises questions about how to exploit the new capabilities of these devices and to deliver better information in the context of how it is being consumed. "In the case of S&OP or IBP, for example, the ability to connect company goals to plans, and being able to close any potential gaps, has become crucial," she said. "By integrating consumer insight into demand and supply planning and consumer buying segmentation, product launches will become more successful and more targeted."

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Pieter Van Nyen

OMPARTNERS

Continuing the integration theme, Bull again homes-in on modern ERP solutions and how they can be connected to external systems (including those related to planning) to great advantage. He commented:

"ERP systems that have a modern architecture are far more open in their design, with in-built connectivity tools that allow integration routes between ERP systems and other specialist software systems to established with far greater ease." Bull cites Microsoft Dynamics AX as a leading example of an ERP system that has powerful tools to aid integration in a business environment and return an attractive cost of ownership. "Using the ERP connectivity tools non-technical staff are able to define the data mapping between systems, the conversion of data and the data validation requirements and error handling," he pointed out. However, he added that integrating the ERP system with external systems – such as finite capacity planning or forecast generation tools – is only the start, as the same connectivity tools can be used to manage supply chain integration, EDI and web services etc. Bull explains that they can also be used to communicate to shop floor equipment and other hardware elements that are typical of any modern production environment."

Pieter Van Nyen, project manager at OM Partners, also highlights the integration of software functionality – such as demand forecasting & planning, advanced planning & scheduling (APS), order allocation and sales

❝ Organisations need to be more agile in today's highly competitive market, which means being able to respond quickly to changes and to deliver exactly what customers want, when they want it."
— Paul Lane, Seiki Systems.

& operations planning (S&OP) – within a single application as being a key current trend. "This allows the creation of innovative software solutions that were not possible in the past," he said. One example he cites is an S&OP solution that contains demand planning functionality and operations planning functionality with value-based optimisation capabilities in a single software system. "This allows the end user to run demand simulations and operations planning scenarios in a single software system, without having to switch between different software modules/programs," Van Nyen pointed out.

Addressing the entire works order process

According to Lane, everything from the need to extract more from existing resources to the desire for continuous improvement have driven the adoption of more integrated systems. He points out that the best integrated systems can provide accurate and reliable job data as well as performance reporting. Lane points out that Seiki has evolved its solution through improved integration to modules such as shop floor data collection, resource monitoring and shop floor communications in the form of work queues. "It's not necessarily enough just to plan jobs accurately," said Lane, "companies want to address the entire works order process, from top floor to shop floor." Furthermore, believes Lane, the solution has to be scalable. "The desire for this increased level of process control and visibility is not just limited to larger organisations running thousands of operations," he said. "There is an increasing awareness of the tangible benefits to be gained from adopting technologies that can really support business growth throughout the manufacturing industry. The challenge for vendors then becomes about how to deliver richer and more flexible solutions to satisfy a

more diverse customer base."

Cloud forecast

Has the Software as a Service (SaaS) model and the Cloud concept in general had any notable level of impact on the planning and forecasting-related software solutions market thus far? Pandey considers that while SaaS is gaining momentum in general in the IT community, he doesn't see a noticeable impact on the planning software solution side. "There is a shift in terms of the product vendors offering their solution on an on-demand basis," he said, "however these cannot be compared with CRM (Customer Relationship Management) SaaS offerings, which are true multi-tenant Cloud offerings

❝ The integration of software functionality – such as demand forecasting & planning, APS, order allocation and S&OP – within a single application allows the creation of innovative software solutions that were not possible in the past."
— Pieter Van Nyen, OM Partners.

(e.g. Salesforce.com)."

In Pandey's view this is due to several factors: "Foremost among these is the complexity of the planning solutions compared to CRM functions (leads, opportunities, contacts). SCM (Supply Chain Management) or planning solutions handle complex calculations involve sophisticated algorithms, and must manage a high number of configurable parameters (such as calendars, items/SKUs, planning horizon, order size, safety stock/inventory policy/rules). Further, the processes require intensive performance optimisation, especially when we consider planning at enterprise levels, which entails millions of records. These systems are mission-critical and disruptions can have a significant business impact. Hence, there is little value in disrupting the existing solutions and rebuilding the same on SaaS platforms." Therefore, Pandey

Paul Lane

SEIKI SYSTEMS

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maintains that while there is increasing momentum in the SCM space on SaaS offerings – with a mushrooming number of companies offering SCM on demand – true multi-tenant, optimised SaaS-based SCM offerings have a long way to go.

Rumble observes that interest in SaaS and Cloud services continues to grow and is being supported by customers who see these subscription-based solutions and 'pay as you go' offerings as a more cost-effective solution (indeed, lower barriers to entry are conducive to the need for current economic belt-tightening). However, Rumble adds that very few of the top 10 SCM vendors are strong players in SaaS SCM. "There are some sporadic efforts and solutions being delivered by vendors in a variety of area such as warehousing, but these represent a small percentage of the overall revenue of those vendors," she said. "Because revenue would be spread over several years when adopting SaaS, there could be a top-line revenue impact. Business leaders are choosing departmental and SaaS-delivered packaged applications that target specific domains."

With regard to supply chain implementation, Bursa has witnessed the greatest benefit of SaaS/'on demand' in transportation management systems (TMS). This, believes Bursa, is due to two main reasons; first, the way users interact with the system. "Users tend to work with a light-weight interface tightly integrated to order management," she said. Secondly, TMS can be positioned as a community system, one where multiple parties access the information in a private exchange of shipment details, tender and delivery information. "Where a solution can stand on its own, SaaS can provide a quick deployment and an expense-based model vs. a capital investment," said Bursa. "However, the financial case for SaaS typically will not go past three years as, at that point, you tend to hit the acquisition costs of an on premise solution."

Williams has yet to witness any real difference

Alexandria Rumble

TXT
e-solutions

in the decision-making of businesses as a result of SaaS in the planning area, while Latham hasn't noticed much activity in this space so far. Stork too hasn't observed much interest in the SaaS model at this stage of its development. "I am sure it will come, but demand planning is a mission critical area in our opinion," he said. "It will be some time before a significant number of companies rely on external service bureaus for this functionality." Stork added that there is also the cost to consider. "Most of our users obtain a payback in 6 to 12 months – why continue paying for ever?"

Van Nyen's view is that some (smaller) companies feel that SaaS is an interesting solution. However, when it comes to the point of securing and speeding up data transfer from the ERP system to the SaaS solution (and vice versa), Van Nyen believes most of

these companies come to the conclusion that it is best to host the ERP solution and the APS solution in the same location. Novels points out that SaaS has been around for many years. However, so far he has seen very little interest in this from users and potential users in the scheduling arena. "Most of the activity appears to be in the S&OP and ERP areas where it is transactional based," he said. However, Novels added that he thinks it is bound to become more popular as the technology and security issues are dealt with.

Hughes believes there is little question that SaaS is becoming well established as a way to deliver business applications. "Based on IDC research (November 2010), over 50 per cent of professional services firms are using some form of hosted application, and another 35 per cent are considering it," he said. Hughes added that within Ortec's own

customer database this shift may not yet be noticeable. Nevertheless, the company considers it important to deliver its customers the best service and thus be prepared to respond to this trend. For this reason Ortec solutions are made available as SaaS.

Differentiation

What are some of the main functionality differentiators among the planning & forecasting-related software vendor community? Novels considers that this really depends on what individual vendors see as their key differentiators. "Some see their key functionality as being a type of scheduling approach – such as theory of constraints (TOC)– while others focus on specific industrial sectors on which they focus their toolset; for example process industries rather than discrete," he said. "We have always taken the view that customers want what they want and therefore the flexibility of the tool to customise it to those wants, whatever it is, is

> **"** Because revenue would be spread over several years when adopting SaaS, there could be a top-line revenue impact. Business leaders are choosing departmental and SaaS-delivered packaged applications that target specific domains."
>
> *– Alexandria Rumble, TXT.*

important. So we have standard rules, such as TOC, but it's not for everybody. We have discrete manufacturing users but process ones too."

For Stork, one of the key differentiators is expertise and knowledge, particularly in Demand Planning. "This is a very different environment to the rigid transactional environment of most ERP systems," he said, "and being able to provide experienced and knowledgeable trainers and implementation consultants can ensure that an investment in Demand Planning tools is successful and returns an ROI within the targeted 6 to 12 month period."
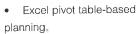
Rumble believes the right planning solution will provide a greater user experience with elasticity of functionality on demand, and be able to plan through the segmentation of

customers and/or products. She continued: "As companies are pushing a more collaborative way of working in their teams – particularly relating to demand and supply planning – solutions must make this effortless and provide the ability in one solution for each stakeholder to see the data he or she needs to do their part job as part of a connected way of working." Rumble added that if S&OP is taken as an example, each user should be able to see the same plan in their own 'language': marketing in terms of margins by brands and promotional activities, and sales in terms of customers by sales etc. In addition, Rumble maintains that the solution must provide a good level of analytics to enable each player to solve issues, predict problems and also identify opportunities. More specifically Rumble believes that the ideal planning solution will include:

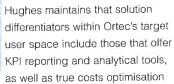**Karin Bursa**

- Excel pivot table-based planning.
- Full top-down/bottom-up and attribute based multi-dimensional planning.
- Advanced simulation capabilities.
- Advanced planning tools: product images visualisation and responsive/editable charts.
- Integrated performance management.
- Flexible workflow management.

For Bursa, one of the main differentiators within the planning & forecasting-related software arena is the breadth and flexibility of the planning solutions available. As global supply chain networks become more complex, Bursa considers that software needs to be able to solve many complex problems in a straight forward and easy to understand fashion. "The software must be able to leverage all the data that is available to help the customer understand and improve all areas of the supply chain," she said. "For example, inventory optimisation alone delivers value, but when you incorporate that into a suite of supply chain planning solutions you improve demand visibility and help develop more accurate inventory policies that provide both strategic and tactical business benefits."

Pandey's view is that the key areas where most leading product vendors in the planning community are focusing are collaboration, responsiveness and S&OP. However, he points out that the approaches taken in these dimensions have different flavours. Pandey continued: "When it comes to functionality differentiators, some offerings are focused on rapid simulation and analysis/what-ifs, with Kinaxis leading the pack – in others, connecting simulation results back into execution (eg. Oracle rapid planning integrated with ASCP). Some planning-related software drives collaboration with suppliers/channel (eg. ICON, SAP – SNC) and provide closed loop S&OP (eg. JDA)."

Hughes maintains that solution differentiators within Ortec's target user space include those that offer KPI reporting and analytical tools, as well as true costs optimisation (including tariff tables). Additionally, driver hours regulations and Working Time Directive applications need to be factored into the equation. Hughes adds that, in the customer's eyes, the speed of optimisation, algorithm quality and mapping standards remain the biggest differentiators among planning software suppliers. Lane reflects that the users need to consider whether the best fit for them would be out-of-the-box software with configurability, or highly configurable software requiring specialist consultancy support during installation.

According to Williams, understanding the real meaning of collaborative planning - and the process and people change to enable this - is vital not only from a consultancy point of view but also form software vendors. But, he believes that the biggest differentiator is to recognise that success will only come from a combination of systems, processes and people – and the ratio, understood by more advanced companies in this area, is 10 per cent systems, 30 per cent process, 60 per cent people.

Planning for tomorrow

What do our commentators believe might be the next key developments to look out for in the world of planning and forecasting-related software over the next year or two? Bursa explains that there are two areas of increased innovation that Logility is currently witnessing. The first is the mobility of performance management and the ability to access role-specific information from anywhere at any time. The second is in the ability to better manage new product introductions. "The pace of new product introductions continues to quicken," she said, "and companies need to accurately forecast demand, clearly understand the impact on production and distribution, and optimise inventory investments."

Lane considers that solutions will become increasingly web-based, and with larger volume capacity, while Latham comments that

> **"** The pace of new product introductions continues to quicken, and companies need to accurately forecast demand, clearly understand the impact on production and distribution, and optimise inventory investments."
>
> *– Karin Bursa, Logility.*

real-time finite scheduling will receiving increasing take-up. This, he explained, is a solution whereby the schedule is always evolving as events are reported, thus saving the user the need to 'run' the scheduler. "The 'best' next action will always be picked in response to an event; for example, upon completion of an operation," he said. "The best next operation to be run at the work centre is chosen, rather than simply picking the operation at the top of a work-to list developed some time ago when the scheduler was last 'run'."

Pandey believes that while supply chains will become even more organised and gain more attention, the supply chain function itself is undergoing a fundamental shift and the

Atul Chandra Pandey

Infosys®

boundaries between traditional planning and execution functions are becoming almost non-existent. "Demand planning has come a long way from being statistical forecast-driven numbers," he said. "It has grown into consensus and collaboration-based forecast and now includes market intelligence, competitor analysis and getting plugged into the upstream CRM function. Similarly, supply planning is no longer a batch-oriented process where the plan is created, then shared, modified, and re-planned."

Pandey points out that today supply signals are received and processed in real time, and corresponding supply decisions are more

❝ The focus is on improving execution efficiencies and strengthening visibility through better and real-time connections with suppliers, channel and distribution partners, and customers."
— *Atul Chandra Pandey, Infosys Technologies.*

frequent, hourly in some cases. "The focus is on improving execution efficiencies and strengthening visibility through better and real-time connections with suppliers, channel and distribution partners, and customers," he said, adding that the supply chain is converging with marketing and sales, whether in terms of forecast consensus or collaboration, or determining shipment plans from manufacturers to retailers. Similarly, he maintains that the integration between post-sale customer service and the supply chain function is tightening; whether this pertains to quick replacement of a part or cutting lead time on repair. "Some of my clients are investing in these areas and focusing on improving service capabilities by restructuring the supply chain function to strengthen reverse logistics and post-sale customer service," said Pandey.

Rumble maintains that Supply Chain Planning

(SCP) technology will continue to move forward by helping to bring together companies' existing processes and people in different geographies and functions. She added that best-of-breed solutions are leading the way by empowering businesses with real-time visibility of not only the supply network but also of the entire value chain. "The translation of this information for each individual ensures everyone is on the same page," she remarked, "while dashboards and 'what if' scenario capabilities means the most profitable decisions for the business can be made." Rumble also commented that software vendors are increasingly looking at the greater integration of SCP and execution capabilities as the next step. "A lot of vendors are either developing or looking to acquire components to help turn this vision into a reality over the next couple of years," she said.

Novels considers that in the planning (longer term) area the market will witness a move towards more graphically interactive systems, but those that also have the ability to automate the process of deciding what size batches should be made when. For the short-term tactical shop floor scheduling area, Novels believes we will see that companies who cannot move to an entirely make to order scenario will use Heijunka based APS systems that will aim to minimise their inventory in all its forms.

Williams believes we will see many more companies adopting IBP/S&OP processes. He added that there will be failures, largely because companies will not understand or accept what it means to go down this route. However, Williams also maintains there will be successes achieved by those that accept the 10 per cent systems, 30 per cent process, 60 per cent people ratios. "You will see more software houses attempting to penetrate this space in addition to the current specialists," he said. "So, as in the past, there will be many

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— *Johnny Hughes, Ortec.*

more who will say they have solutions without understanding the real requirements of these processes."

Hughes observes that more and more companies are integrating Advanced Planning seamlessly into their business. Moreover, he pointed out that Ortec has noted a shift taking place in the world of planning towards newer methodologies. Hughes commented: "As the reliance on planning grows, so does the need for innovation in the types of tools available: solutions that can offer automated data import, increased calculation power, improved communication visualisation methods and immaculate integration. The field of advanced planning was, and still is, able to benefit greatly from innovations in software applications, communications technology and mathematics. But just as technology has evolved, so too has the way in which individuals and teams operate in their working environment." ●

Johnny Hughes

ORTEC