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# Shortening the Planning Cycle

*New tools allow companies to plan at the speed of business.*

The fundamental purpose of planning is to anticipate future needs, identify challenges and develop a course of action for accomplishing an objective. While the purpose remains the same in today's new-generation software environment, the planning processes have evolved. The MRP, ERP and APS systems of the past few decades have been surpassed by new-generation planning tools incorporating service-oriented architectures and business process platforms. The complexities of today's business environment have driven the development of these tools, offering more visibility and accessibility to managers across the enterprise and the extended enterprise.

Enterprises are challenged, more than ever, by the variability and uncertainty of supply and demand, increased lead times from global supply sources and customers' expectations of rapid response. Additionally, the global supply chains of today's companies have increased risks and communications, often leading to high levels of redundant inventories, among other obstacles to efficiency and profitability.

Considerable inefficiencies also exist in the strategic and tactical decision-making process, leading to misalignments in the supply chain. Furthermore, the inherent information latency in the planning process, spanning multiple planning domains and systems, creates delayed and inaccurate responses to customer needs and upsets in demand or supply. The inability to track key performance indicators, proactively detect exceptions and take the necessary corrective actions after assessing the cost, service

and margin implications of the alternative actions adds to the difficulty of creating an effective plan-do-check-act cycle (PDCA). (See article, page 21.)

## **Deficits of previous-generation planning capabilities**

Considerable time and manual effort is spent on supply chain data management, plan extraction, plan aggregation and personalization of reports for decision making. This leaves little time for analysis and decision making between planning cycles and can lead to last-minute firefighting across multiple functions.

The planning systems in place at most companies today leave IT organizations unable to respond to the changes required to support innovations in business processes. They are challenged with maintaining multiple systems for plan input data, plan output data, plan archives and reports and with creating personalized, user- or domain-specific workflows across multiple planning functions. This results in a higher total cost of ownership to maintain and support the infrastructure for planning.

These business challenges, process inefficiencies, productivity losses and IT limitations create barriers to excellence in financial management, resulting in revenue shortfalls from lost opportunities, margin erosion from non-sustainable cost structures and poor return on assets and investments. Customer satisfaction also decreases as

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a result of poor responsiveness, the inability to provide differentiated service levels and the inability to offer competitive prices. Operational excellence suffers as well from high investments in inventories, a poorly utilized asset base and significant expediting and waste.

Recent technology advances have enabled a new generation of planning, which we call Agile PDCA. The advanced systems enable enterprises to meet changing customer demand and to counter supply variability. The table shows the differences between the old and the new planning capabilities engendered by technology advances.

But with new-generation tools, a planner will understand the root cause, adjust demand-side levers—such as promotions and price changes—to shape the demand and, if necessary, make changes in the supply plans. The system enables corrective action and continuous planning.

In the old paradigm, planners had limited exception-management capabilities, such as exception highlighting and exception dashboards, which required significant manual effort in understanding the root causes of the exceptions (such as short or late demand, inventory stock-outs, safety-stock violations and capacity shortages).

## Innovation Through New-Generation Planning Systems

PREVIOUS GENERATION	NEW GENERATION
Demand/Supply Match	Closed-Loop Planning for Agile PDCA
Manual Exception Management with Limited Interactivity	Diagnostics, Simulation and Resolution with Scenario Planning and Process Playbooks
Snapshot-Based Batch Planning	Event-Based Incremental Planning to Evaluate Global Impact and Resolution
Inflexible Process with Rigid Workflows	Agile Planning Processes and Systems for Rapid Adaptation to Changing Business Models
Multiple User Interfaces for the Same Role	Roles-Based Unified Workflows across Multiple Systems for Responsiveness

### Beyond demand/supply matching

The objective of the older generation of supply chain planning was to reconcile demand and supply to create a feasible operational plan or a forecast-driven demand/supply matching process. With new-generation solutions, the objective goes beyond demand/supply matching to making the plan happen and continuous improvement by closing the loop between planning and execution with Agile PDCA.

How is this accomplished? A structured process proactively senses deviations and shapes demand or supply so as to “make the plan happen” and achieve enterprise business goals consistently. For example, in order to react to trends sensed by point-of-sale data—be it an uptick in demand or a slowdown—planners might typically reforecast the trend and adjust the supply in the old paradigm.

New-generation solutions help planners diagnose the root causes of the exceptions and evaluate alternative scenarios for resolution. They do so by using a playbook approach, where predetermined actions are taken when particular situations identified by the system arise. This playbook approach reduces the dependency on individuals (and individual error) and provides the opportunity for creating a standard operating procedure for exception management and Agile PDCA.

For example, a leading consumer electronics company in North America has successfully adopted a process-playbook approach for its vendor-managed inventory (VMI) process. The playbook enables users to map deviations between consumption and previous sell-through plans and to apply countermeasures, updating the plan along the way. The playbook provides the logic for picking the right

business lever based on multiple factors, such as magnitude of the deviation, lead time available for action and cost. With the process-playbook approach, the consumer electronics company has been able to significantly reduce its weeks-of-supply channel inventory, increase its in-stock percentage to the upper 90 percent range, improve operating profits for the product line and significantly enhance its VMI partner relationships.

From a frequency perspective, older generation systems provided monthly or weekly snapshots of the plan. New-generation systems enable companies to increase that frequency to daily or even multiple cycles within a day. Such incremental planning helps them evaluate the global impact of events on an as-needed basis. These companies are creating a continuous planning process—or at the least, a fast and frequent one. For example, a leading personal-computer manufacturer significantly reduced inventory and cash-to-cash cycles by running multiple planning cycles within each day. These cycles helped the company plan its assembly operation and material and procurement requirements.

**With new-generation solutions, the objective goes beyond demand/supply matching to making the plan happen.**

With older-generation tools, the processes and workflows were inflexible and rigid, requiring significant investment in terms of time and money for incorporating changes in the business. To modify processes and systems at the rate of business change, new-generation planning processes and workflows are built and maintained using business process platforms. For example, a leading steel producer is using the i2 Agile Business Process Platform to deploy custom workflows for structured “what-if” scenario analysis in its planning and forecasting functions. Furthermore, the system has helped the company reconfigure its existing applications and workflows to support new business processes. The results have included improvements in delivery, order-fulfillment lead times and optimal product mixes, as well as reductions in inventory.

### **Capabilities from new-generation systems**

From a business-user perspective, the advances in visibility and accessibility of data for decision making have been quantum. Before new-generation systems, users had to access multiple systems—each with its own user interface—to complete a workflow, leading to significant loss of productivity and information latency. New systems enable roles-based unified workflows—both data and user interface—across multiple systems for improved responsiveness.

A leading European semiconductor company has success-

fully leveraged i2's new-generation planning capabilities to deploy a unified order-promising workflow across i2 and SAP® R/3® to provide real-time visibility across the systems. But, more important, the system allows the company to manage order exceptions using root-cause analysis, thereby improving customer-service levels, responsiveness to exceptions and planner productivity.

Are you ready for new-generation planning systems? The following enablers are seen as prerequisite capabilities.

### **Data Management**

The ability to manage supply chain master data, planning data models and planning parameters in a single data hub, as well as the automated management of data-related processes to prepare, cleanse, validate, synchronize and transform data from multiple sources, serve as a foundation to improve plan accuracy and reduce latency within the planning process. Without these capabilities, planners are challenged by the GIGO (garbage in, garbage out) principle.

### **Constraint Representation**

If you cannot represent it, you cannot plan for it. It is imperative to incorporate operational realities in the business process and the associated constraints within the planning models in order to develop a plan that can be executed. This requires comprehensive representation of physical entities of the supply chain, business models, processes, constraints, business rules and objectives.

### **Optimization**

Optimization techniques with the right balance of speed and intelligence are imperative for developing a plan to operate at peak efficiency with minimal cost and achieve business metrics such as profitability, customer service levels and utilization. These techniques should have configurable business objectives and should be specific to industry, planning domain and business problem.

### **Plan Diagnostics and Control**

Capabilities to understand and monitor plan quality and performance, to identify the exceptions, to investigate the root cause and to simulate alternative corrective actions are critical for interactive planning, process innovation and continuous improvement. The capabilities should enable diagnostics for both historical and planned performance, and provide a mechanism to implement the corrective actions.

### **Total Plan Management**

A system of record for all current and past published plans, with access to actual performance, serves as one version

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of the truth and provides a foundation for managing enterprise-wide plans. A structured planning process from plan creation to plan release (plan creation, reconciliation, evaluation, scenario management, adjustment, collaboration and release) not only enhances planner productivity, but also gives the planner the ability to evaluate the impact of alternative resolution options and decisions on plan objectives and business goals. It also provides a decision-support framework to improve and maintain the plan as it is executed. The capability to synchronize plans, planning cycles and execution, and to have visibility into exceptions, enables reliable execution of plans and forms an integral part of plan management.

### Execution Visibility

Closing the loop with actual execution is a must and is addressed by the capability to capture transactional information and provide time-phased visibility into material flows shown in distributed execution systems. This capability is vital for analyzing plan performance, for identifying and resolving exceptions and for maintaining and improving the plan.

### Planning Workflow Creation and Personalization

Enabling rapid response requires a structured, yet flexible planning process for each planning domain. The planning solution should have the flexibility to incorporate the unique business needs arising from differentiated business models. Capabilities to quickly establish, deploy and maintain decision-making systems at the rate of business innovation and process changes are imperative if companies want to eliminate value lost from the lag between business change and IT implementation. A service-oriented architecture provides the services required to create and configure planning workflows spanning multiple applications. It also enables a unified, interactive, decision-support workbench, with data views from multiple planning and execution systems. In addition, a service-oriented architecture provides for roles-based customization, extension and personalization of the user interface, planning reports and dashboards.

As the sidebar at right shows, the benefits of new-generation planning processes and solutions are significant. They have an impact on management productivity and decision making, but most important, on a company's business and financial success.

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## Benefits of New-Generation Planning

### Financial Benefits

- Increased revenue with improved product availability and increased responsiveness
- Reduced cash-to-cash cycles from reduced latency in planning and execution
- Reduced operating expenses from better decision making
- Optimal investments in inventories and capacities for maximum return on assets
- Lower total cost of ownership for information systems and improved return on investment for future advancements with an agile and flexible platform
- Reduced costs for systems changes and upgrades

### Business Benefits

- Improved enterprise synchronization with a system of record for the plan
- Improved responsiveness—the ability to quickly react to changes in business conditions—with structured processes to identify, monitor and counter supply chain upsets
- Reduced latency in business processes and information flows from reduced planning cycle times and data latency
- Increased planner productivity with personalized plan views and roles-based structured workflows
- Empowered IT organizations to implement system changes at the speed of business innovation
- Increased information consistency in planning through a single source for supply chain data

### Management Benefits

- Improved ability to innovate on business processes and rapidly implement to counter changing business conditions
- Reliable and rapid responses to customers
- Personalized plan views and roles-based structured workflows for improved productivity
- More time for strategic analysis and decision making between planning cycles