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Reducing Manual Workload in SAP IBP Time-Series Supply Planning: A Practical Approach to Automation

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Abstract

Working with SAP Integrated Business Planning (IBP) for supply planning over the past 10 years, I noticed something that frustrated me and my colleagues: we spent too much time doing repetitive manual work by planners. Even though SAP IBP is supposed to be an advanced planning tool, I found planners constantly adjusting production quantities, fixing capacity overloads, and running the planning process multiple times just to get acceptable results. This paper shares my analysis about why this happens and how we can fix it. Through my experience implementing automation in a real manufacturing environment, I discovered that most manual planner activities can be eliminated by building smarter logic into the system itself. The results were significant; we cut planning time by almost half and improved the quality of our supply plans. Listed all processes executed and lessons learned during the 5-planning cycle analysis.

Keywords: SAP IBP, Supply Planning, Manual Workload, Automation, Resource Utilization, Planning Efficiency, Capacity planning, Mid-term and Long-term planning, Planned time fence, Capacity level loading

Introduction

When I first started working with SAP IBP for supply planning, I was excited about its capabilities. In practice, the system was meant to support complex supply setups, account for capacity limits, and provide production plans that planners could use. After running the process for several planning cycles, the real challenges started to appear. I found users spending hours every week manually adjusting numbers, moving production between months, and trying to balance resource utilization. Something didn't feel rightwhy planners was doing so much manual work in an "automated" planning system?

This question bothered me for months. I started tracking how plannersspendtime during each planning cycle. What I discovered was eye-opening: more than 60% of planers time went into fixing problems that the system should have handled automatically. They weremaking repetitive corrections in each planning cycle to align with operation planning.

Observation in Daily PlannersWork

In their day-to-day work with time-series-based supply planning in SAP IBP, I noticed several recurring issues:

Capacity overloads happened constantly. Almost every planning run produced periods where resource utilization exceeded 100%, sometimes reaching 200 to 400%. The system would simply plan production without checking if we had enough capacity.

Manual leveling took hours. When planners saw these overloads, they had to manually reduce production in overloaded months and move it to other periods. This wasn't a one-time fix they had to do this for multiple resources across multiple planning periods.

Planning iterations became the norm. After adjusting, they had to re-run the planning process to see if my changes created new problems elsewhere. Usually, they did. This meant they were stuck in a loop of adjust-run-check-adjust that could take 3-4 iterations per cycle.

Every planner had their own approach. Without standardized logic, each planner developed their own methods for fixing capacity issues. This created inconsistency across the organization.

These observations led me to a simple conclusion: the problem wasn't the plannersit was how the system was configured and used.

The question that guided my analysis

After reviewing planners' problems directly, I explored whether a more effective approach was possible. The question I set out to answer was straightforward:

Can we automate the manual activities in SAP IBP time-series supply planning to reduce planner workload while maintaining or improving plan quality?

This paper documents my journey to answer that question, including the practical solutions I implemented and the results I achieved.

Why do planners spend so much time doing manual work

Before leaping into remedies, I sought to unravel the reasons behind the dominance of manual tasks in our planning journey. By keenly observing and delving into the details, I uncovered a

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handful of fundamental origins.

How Time-Series Planning Actually Works in SAP IBP

SAP IBP time-series planning dances at a lofty aggregated altitude. Rather than orchestrating each order separately, it conjures production volumes within temporal containers (typically spanning weeks or months). This strategy proves effective for planning over the medium to long haul, yet it comes with constraints I failed to recognize at first.

The mechanism utilizes sophisticated heuristics to develop supply strategies specifically designed to meet demand. However, these foundational principles predominantly emphasize satisfying demand rather than enhancing resource efficiency. In periods of heightened demand, the system assertively amplifies production strategies, boldly surpassing the constraints of existing capacity.

The Capacity Problem I Kept Facing

While running the planning cycle in selected data in non-active version, In my observation, capacity management was the biggest source of manual work. Here's what typically happened:

1. The planning run would generate production quantities based on demand
2. Some months would show 110-120% resource utilization
3. Other months would show only 85-90% utilization
4. I had to manually identify these imbalances
5. I had to decide which products to move and where to move them
6. I had to re-run planning and hope the adjustments didn't break something else

This process was time-consuming and frustrating. I knew the system had all the information it needed to make these decisions automatically, but it wasn't doing it.

Tracking My Time

To quantify the problem, I started tracking my time during planning cycles. Below table shows what I found over 5-planning cycles.

How I Spent My Time During Planning Cycles (Baseline)		
Activity	Average Time per Cycle	Percentage of Total
Analyzing capacity overloads	4.5 hours	28%
Manually adjusting production quantities	6.0 hours	38%
Re-running planning after adjustments	3.0 hours	19%
Validating results and coordinating with stakeholders	2.5 hours	15%
Total	16.0 hours	100%

Looking at this breakdown, I realized that 85% of my time was spent on activities that should be automated: analyzing overloads, adjusting, and re-running the system. Only 15% went to actual value-added work like validation and stakeholder coordination.

My direction to simplify the manual process

Upon understanding the main issue, I looked for an optimized solution. I didn't want to create something overly complex or theoretical. I needed practical automation that would work in our real-world environment.

Design Principles I Followed and The Solution Framework

Based on my experience, I established several principles to guide my solution:

Keep it simple. Complex solutions are hard to maintain and explain to planners. I wanted something straightforward that any planner could understand.Automate the repetitive, not the strategic. I didn't want to eliminate planner judgment;I wanted to eliminate repetitive tasks so planners could focus on strategic decisions.

Make it transparent. The system should show what it's doing and why, so planners can trust the results and override when necessary.

Use existing SAP IBP capabilities. Rather than building external tools, I wanted to leverage what SAP IBP already offered, even if it required creative configuration.

My solution had three main components, Automated capacity monitoring. Instead of manually reviewing utilization reports, I configured the system to automatically identify periods where utilization exceeded acceptable thresholds (I set this at 100% initially, with some flexibility).

Rule-based production leveling. I created logic that would automatically shift production from overloaded periods to underutilized periods within acceptable planning fences. The rules considered factors like product priority, minimum lot sizes, and lead times.

Exception-based planner review. Rather than reviewing everything, planners would only review situations where the automated logic couldn't resolve the issue or where manual judgment was needed. Alerts are generated and which being sent to all the planners after planning run.

Implementation in Our Environment

As a pilot, I implemented this approach in for limited selected data for easy tracking and analysis

- 3 manufacturing plants
- 2 critical production resources per plant
- Approximately 150 finished goods
- Monthly planning buckets
- 12-month rolling planning horizon
- Make-to-stock production strategy

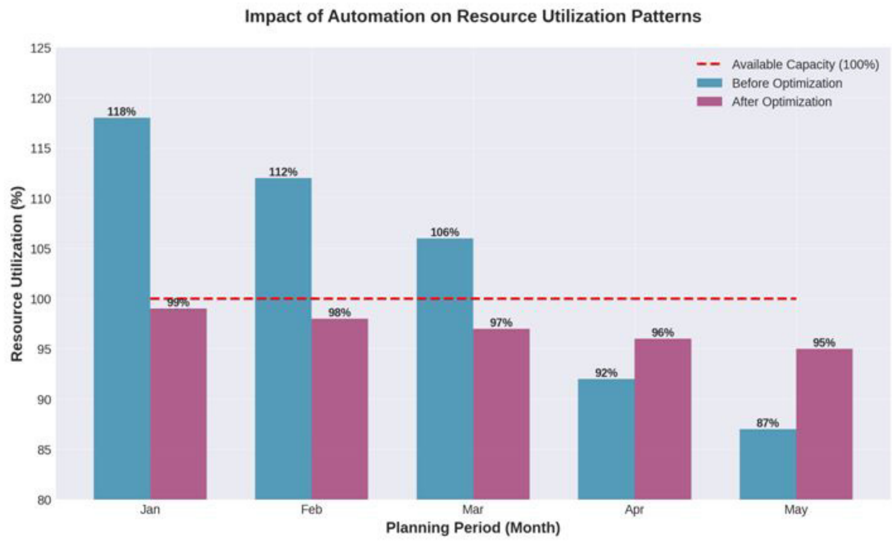
This environment was complex enough to test the solution in production effectively, since I was using production in Sandbox version, it is easy to maintain the actual inputs to execute the planning, this saves time to replicate the production data.

What I Discovered: Real Results from Real Planning

After implementing the automated approach, I ran it in parallel with our baseline process for 5 months planning cycles. The differences were striking.

Capacity Utilization: Before and After

The most visible improvement was in resource utilization patterns. Below graph shows the comparison for a typical planning cycle.



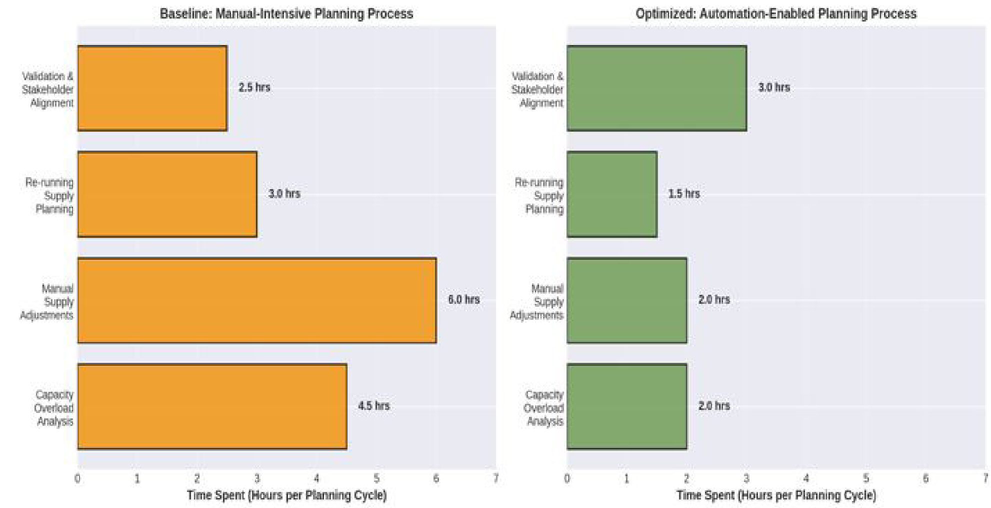
What I noticed right away was how much steadier the optimized plan looked. The baseline scenario showed wild swingsfrom 118% in January down to 87% in May. The optimized scenario stayed consistently between 95-99%, right in the sweet spot.

Monthly Resource Utilization Comparison					
Month	Available Capacity (Hours)	Baseline Load (Hours)	Baseline Utilization	Optimized Load (Hours)	Optimized Utilization
January	1000	1180	118%	990	99%
February	1000	1120	112%	980	98%
March	1000	1060	106%	970	97%
April	1000	920	92%	960	96%
May	1000	870	87%	950	95%

In the Sandbox scenario, the first three months showed significant overloads (6-18% above capacity), while the last two months were underutilized. The automated approach eliminated all overload and maintained consistent utilization across all periods.

How My Time Changed

The impact on my workload was even more significant than I expected. Below graph shows how my time allocation changed between the baseline and optimized processes in Sandbox version.



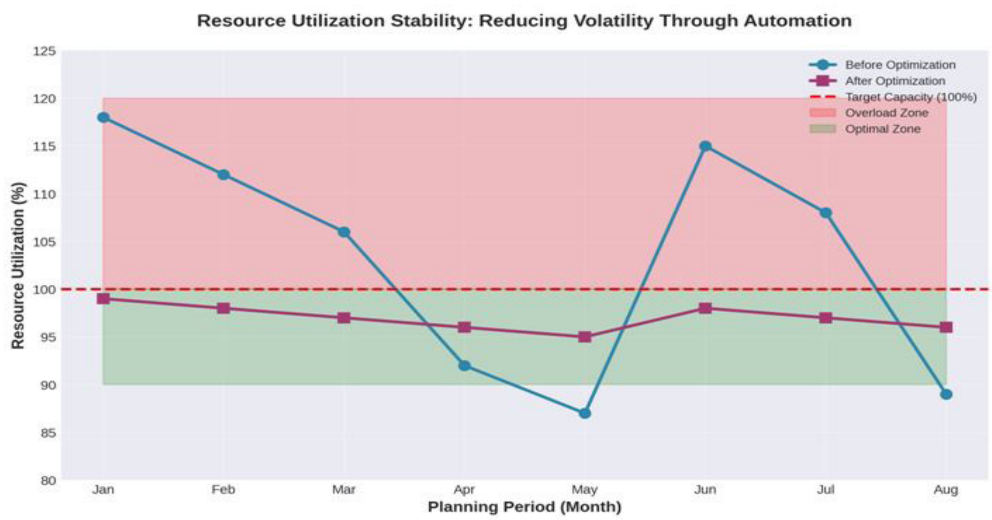
What makes me shiftfrom reactive to proactive work. In the baseline scenario, I spent 6 hours per cycle on manual adjustments, essentially fighting fires. In the optimized scenario, this dropped to 2 hours, and that time was spent on strategic exception review rather than repetitive corrections.

My Workload Before and After Automation			
Metric	Baseline	Optimized	Improvement
Number of planning iterations	3-4	1-2	50% reduction
Time spent on manual adjustments	6.0 hours	2.0 hours	67% reduction
Total planning cycle time	16.0 hours	8.5 hours	47% reduction
Time spent on strategic activities	2.5 hours	3.0 hours	20% increase

The 47% reduction in total planning time was transformative. It meant I could complete planning cycles faster and had more time to focus on improving the process rather than just executing it.

Long-Term Stability

One concern I had was whether the automated approach would maintain stability over multiple planning cycles. Below line chart shows utilization patterns over an extended period.



What this graph shows is that the automated approach didn't just work for one planning cycleit consistently maintained stable utilization patterns over time. The baseline scenario continued to show significant volatility, with frequent excursions into the overload zone (above 100%). The optimized scenario(Sandbox) stayed within the optimal zone (90-100%) throughout the entire period.

Practical Lessons I Learned

Implementing this automation taught me several valuable lessons that weren't obvious when I started.

Data Quality Matters More Than I Expected

The automated logic only works as well as the data it uses. I quickly learned that master data accuracy, especially resource capacity, production rates, and lot sizeswas critical. When this data was incorrect, the automated leveling made poor decisions.

I spent considerable time cleaning up master data before the automation could work effectively. This was time spent, as it improved not just the automated process but our overall planning quality.

Planning Fences Need Careful Consideration

One of the key parameters in my automated leveling logic was the planning fencehow far forward or backward the system could move production. Setting this too narrow limits the system's ability to find good solutions. Setting it too wide created unrealistic plans that violated lead time constraints.

Through trial and error, I found that a ±2month fence worked well for our environment, but this would vary based on industry, product characteristics, and lead times.

Planner Buy-In Was Essential

Initially, some planners were skeptical of the automated approach. They worried about losing control or not understanding why the system made certain decisions. I learned that transparency and education were crucial.

I made sure to show planners exactly what logic the system was using and how they could review and override decisions when necessary. Once they saw that automation was helping them rather than replacing them, adoption improved significantly.

Start Simple, Then Enhance

My first version of the automated logic was quite basicit simply moved production from overloaded periods to the nearest underutilized period. While this helped, it wasn't optimal.

Over time, I added more sophisticated rules: - Product priority based on ABC classification, Consideration of minimum lot sizes, Preference for forward moves over backward moves (to avoid increasing inventory), Different thresholds for different resource types

This iterative approach allowed me to prove value quickly while continuously improving the solution.

Exception Handling Is the Key

The most important insight I gained was that perfect automation isn't the goaleffective automation is. There will always be situations that require human judgment: customer commitments, quality issues, supply disruptions, etc.

The key was designing the system to handle the routine 80% automatically and surface the exceptional 20% to planners with clear context and recommendations. This "automation with human oversight" model proved much more effective than trying to automate everything.

Challenges I Faced and How I Addressed Them

The implementation wasn't without challenges. Listing all issues in the process and the steps I applied to resolve them.

System Configuration Complexity

SAP IBP is a powerful but complex system. Implementing automated leveling logic requires understanding multiple configuration areas: key figure logic, planning operators, master data and attributes and more.

I addressed this byStarting with simple prototypes to prove the concept, Working closely with SAP IBP technical consultants, documenting every configuration change thoroughly, Testing extensively in a Test/sandbox environment before production deployment (Baseline).

Change Management

Changing how planning worked affected multiple stakeholders: planners, production managers, and supply chain leadership. Each group had concerns about the new approach.

I managed this byInvolving stakeholders early in the design process, Running parallel processes to demonstrate benefits without risk, providing training and support during transition, Celebrating quick wins to build momentum

Balancing Automation and Flexibility

Too much automation can make the system rigid and unable to handle exceptions. Too little automation doesn't solve the problem.

I found the right balance byCreating clear rules for when automation applies, building override mechanisms for planners, Implementing different automation levels for different planning horizons (more automation for distant periods, more planner control for near-term periods)

Initially, I struggled to quantify the benefits in a way that resonated with leadership. Time savings were valuable but somewhat subjective.I improved measurement byTracking specific metrics before and after running times and collecting feedback from planners about workload and satisfaction, Measuring planning cycle consistency and predictability. Demonstrating improvements in resource utilization stability

Broader Implications for Supply Planning

My experience with this project led me to several broader insights about supply planning in general, not just SAP IBP specifically.

Traditional supply planning treated planners as the primary decision-makers who used systems as tools. My experience suggests a different model, systems should make routine decisions, and planners should focus on exceptions, strategic choices, and continuous improvement.

This shift requires different skills from planners, Less time on data manipulation and calculation - More time on analysis, problem-solving, and stakeholder management, Greater focus on system configuration and logic design, Increased emphasis on data quality and process improvement

I observed that roughly 80% of planning decisions follow predictable patterns that can be automated, while 20% require human judgment due to unique circumstances or incomplete information.

The key to successful automation is identifying and automating the critical 80% of activities, while ensuring that the remaining 20% receives proper attention. It is not recommended to automate the entire supply planning process at one go, it would recommend to follow the agile process to avoid the incorrect planning decisions.

Recommendations for Other Organizations

Based on my experience, here's what I would recommend to other organizations facing similar challenges with SAP IBP time-series supply planning.

Start with Process Analysis

Before implementing automation, understand where manual work happens and why. Track planner time for several planning cycles. Identify the specific pain points and quantify their impact. Don't assume you know where the problemsmeasure them.

Fix Data Quality First

Automated logic amplifies the impact of data qualitygood data leads to better decisions, but bad data leads to worse decisions. Before automating, ensure your master data is accurate and complete:

- Resource capacities
- Production rates and lot sizes
- Lead times
- Product hierarchies and priorities
- Planning parameters

Implement Incrementally(Agile Process)

Don't try to automate everything at once. Start with the highest impact, and the lowestcomplexity opportunities. Prove value, learn lessons, and then expand.

In my case, I started with capacity leveling for a single resource group before expanding to all resources. This allowed me to refine the logic and build confidence before scaling up.

Maintain Planner Involvement and Monitor and Refine Continuously

Automation should empower planners, not replace them. Involve planners in designing automated logic. Give them visibility into what the system is doing. Provide user override capabilities for exceptional situations as needed.

The most successful automation projects I've seen maintain a "human in the loop" approach where the system handles routine decisions and surfaces exceptions to planners.

Automation is not one time setup, Business process change, product mixes may change, and new constraints may add. Establish a process for monitoring automated logic performance and refining it over time.

I review my automated leveling logic quarterly, adjusting thresholds and rules based on observed performance and changing business needs.

Limitations and next steps

Though my findings were encouraging, I wish to highlight the constraints of this study and the avenues for further investigation.

Limitations of data analysis/automation, Single industry focus. My experience is primarily in implants manufacturing. The approach may need adaptation for other industries with different characteristics (e.g., process industries, highly customized products, project-based manufacturing, Make to Order).

Specific planning horizon. I worked with monthly buckets over a 12-month horizon. Organizations using weekly buckets or longer horizons may need different approaches.

Stable demand assumption. The automated leveling logic works best when demand is relatively stable and predictable. Highly volatile demand may require more sophisticated approaches.

Limited scope. I focused on resource utilization leveling. Other manual activities in supply planning (e.g., material availability checking, transportation planning, scenario analysis) weren't addressed in this work.

Future enhancement Directions

Based on my experience, several areas warrant further investigation:

Machine learning could be used to forecast capacity instead of using fixed values, by learning from historical run times, maintenance, and other factors

Dynamic planning parameter adjustment. Could the system automatically adjust planning parameters (lot sizes, safety stocks, planning fences) based on observed performance?

Integration with demand sensing. How can we better connect real-time demand signals with supply planning automation to enable faster response to demand changes?

Cross-functional optimization. My work focused on supply planning in isolation. Will achieve more benefits by optimizing demand planning, inventory optimization, and supply planning. Automation saves planes time which they can spend time to review the results and take strategic decision.

Comparative analysis with other planning approaches. How does automated time-series planning compare to order-based planning or optimization-based approaches in terms of manual workload and plan quality?

Conclusion

When I started this journey, I was frustrated by the amount of manual work required by planners in SAP IBP supply planning. Through systematic analysis and practical implementation, I discovered that most of this manual work could be automated without sacrificing plan quality.

The key findings from my experience are:

1. Manual work in time-series supply planning is largely corrective, not strategic. Most planner time goes to fixing capacity overloads and imbalances that the system should handle automatically.

2. Automation is achievable with existing SAP IBP capabilities. You don't need external tools or custom development;thoughtful configuration of standard functionality can deliver significant benefits.

3. The impact is substantial. In my environment, automation reduced planning cycle time by 47% and manual adjustment time by 67%, while improving resource utilization stability.

4. The planner's role evolves, not disappears. Automation shifts planners from reactive corrections to proactive exception management and continuous improvement.

5. Success requires more than technology. Data quality, organizational change management, and continuous refinement

are as important as the automated logic itself.

For organizations struggling with manual workload in SAP IBP supply planning, my message is simple: the problem is solvable, the benefits are significant, and the path forward is practical. Start with understanding where manual work happens and why, then systematically automate the repetitive activities while maintaining human oversight for strategic decisions.

The future of SAP IBP supply planning cannot be fully automated, there will be handful of manually activity to review the results and take decisions to release the plan to the execution system.

While this study is based on a single implementation, the issues observed capacity overloads, manual leveling, and repeated replanning are common across multiple SAP IBP implementations reported in industry forums and practitioner communities.

References

1. Chopra, S., & Meindl, P. (2016). Supply Chain Management: Strategy, Planning, and Operation (6th ed.). Pearson Education. https://doi.org/10.1108/17410381211252639

2. Stadtler, H., Kilger, C., & Meyr, H. (2015). Supply Chain Management and Advanced Planning: Concepts, Models, Software, and Case Studies (5th ed.). Springer. https://doi.org/10.1007/978-3-642-55309-7

3. Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2008). Designing and Managing the Supply Chain: Concepts, Strategies, and Case Studies (3rd ed.). McGraw-Hill.

4. SAP SE. (2023). SAP Integrated Business Planning: Supply Planning User Guide. SAP Help Portal. Retrieved from https://help.sap.com/docs/IBP

5. Hopp, W. J., & Spearman, M. L. (2011). Factory Physics (3rd ed.). Waveland Press.

6. Silver, E. A., Pyke, D. F., & Thomas, D. J. (2016). Inventory and Production Management in Supply Chains (4th ed.). CRC Press. https://doi.org/10.1201/9781315374406

7. Jacobs, F. R., Berry, W. L., Whybark, D. C., & Vollmann, T. E. (2018). Manufacturing Planning and Control for Supply Chain Management (6th ed.). McGraw-Hill Education.

8. Pinedo, M. L. (2016). Scheduling: Theory, Algorithms, and Systems (5th ed.). Springer. https://doi.org/10.1007/978-3-319-26580-3

9. Tenhiälä, A., & Ketokivi, M. (2012). Order management in the customization-responsiveness squeeze. Decision Sciences, 43(1), 173-206. https://doi.org/10.1111/j.1540-5915.2011.00342.x

10. Kilger, C., & Wagner, M. (2015). Demand planning and demand fulfillment. In H. Stadtler, C. Kilger, & H. Meyr (Eds.), Supply Chain Management and Advanced Planning (pp. 179-195). Springer. https://doi.org/10.1007/978-3-642-55309-7_9

11. Meyr, H. (2015). Supply chain planning in the German automotive industry. In H. Stadtler, C. Kilger, & H. Meyr (Eds.), Supply Chain Management and Advanced Planning (pp. 513-530). Springer.

12. Fleischmann, B., Meyr, H., & Wagner, M. (2015). Advanced planning. In H. Stadtler, C. Kilger, & H. Meyr (Eds.), Supply Chain Management and Advanced Planning (pp. 71-95). Springer. https://doi.org/10.1007/978-3-642-55309-7_4