WAIT TIME - A TACTICAL TOOL OR TENACIOUS EVIL

AN ARTICLE SERIES ON LEAN SUPPLY CHAIN

Two illustrious luminaries, Isaac Newton and Albert Einstein of our times steadfastly upheld the notion that **TIME flows inexorably forward**. To this day, no tangible evidence has emerged to suggest that anything within the cosmos can evade time's grasp, retreating into the past or leaping into the future. We find ourselves perpetually racing against time, a relentless pursuit. This truth resonates within organizations as well; they must strive tirelessly to keep pace with the ever-advancing march of time

The biggest challenge is to face customer and say WAIT. When we say Lean Supply Chain Management, our focus shifts on wastages in the Value Chain and out of the wastages popularly called as **DOWNTIME** (Defect, Overproduction, Waiting, Non-Utilized Talent, Transportation, Inventory, Motion & Excess Processing), WAIT TIME remains very critical and complex factor

In measuring effectiveness of the Supply Chain Management, one of the key parameters which is often referred is **CASH-to-CASH Cycle Time**. The time remains a critical factor in this and other KPI's as well. Effectively managing time for each function within the supply chain enterprise is as crucial as managing financial resources. Delays at any stage not only lead to waste but can also create a cascading effect, resulting in even greater inefficiencies.

Normally risk associated with time in the Value Chain can be divided into four categories:

Implicit Wait is a certain measure of time before throwing an exception. Once this time is set, each Value Chain section will wait.

Explicit Wait is a guideline, which is directed to wait until a certain condition occurs before proceeding for executing the task. It is an improvement on implicit wait since it allows the program to pause for a certain defined period to keep the value chain feasible.

Interruption is a time interval during which there is a temporary cessation of something to make it work again. Certain process or tasks which may get hindered due to uncertain scenario, but one can overcome by deploying relevant solutions. Solution must be aimed at reducing the mean time to recover from setbacks.

Disruption is the action of preventing something, especially a system, process, or event, from continuing as usual or as expected for a longer period. It has the potential to damage the value chain process in significant manner. In most of the situations, solution(s) are either not available or non-feasible.

It's obvious that risks associated in implicit Wait time < Explicit Wait time < Interruption < Disruption.

Task at hand for the managers lies in defining the process, policies and procedures in such a way, that risk is minimized in consistent manner

Details	Implicit Wait Time	Explicit Wait Time	Interruption	Disruption
Raw Material	Consolidation of Order / Containerization	Break Bulk Movement	Demand vs Supply Gap / Non-Availability or Gap of Human /Tech or Process	Act of God / War
Supplier	Negotiations / Rate Contract / Purchase Order	Consolidation of Orders / Shipping Decision / Payments Terms Compliance	Seasonality / Cyclical leading to Bull Whip Effect /Capacity Constraints (Demand vs Supply Gaps)	Price Fluctuations / Act of God / War, Shipping -lane disruptions
Manufacturing Plant	Queueing time to Unload raw material / Production Capacity Constraints	Stock Outs / Processing Time / Machinery Break Down (Mean time to Acknowledge, Respond, Repair, Resolve, Recovery)	Strike / MRO Delay / Major Accident	Breakdown of Industrial Peace and Harmony / Natural Disaster etc.
Distribution Centre	Receiving Orders, Processing time for Unpackaging, Packaging, Picking, Sorting, Route Planning and Documentation, Coordination / Communication	Order on HOLD / Cancellation Rerouting, Customization of Order, Inventory Issues Error in processing Documents Network Issues Alteration in SOP	Machine Breakdown Safety Incident /Accident Connectivity Issues (Software /Hardware)	Breakdown of Industrial Peace and Harmony / Strike /Riots/ Natural Disaster etc.
Retailer	Supply of Products Conversion Ratio of Prospective customers	Delay in Payment Receiving issue after Confirmation, Change in Credit Policy Absence of desired SKU and quantity in stipulated timelines Financing Issues faced from customer after Purchase confirmation	Stoppage of Supply from Company due to various reasons Removal of Credit Period Shortage of Working Capital Price Disruption because of New Competition	Contract / Agreement Termination with Supplier Shifting of Customer Base to competitor Slowdown in Sector or Technology / SKU being sold
Customer	Purchase Journey time for Desired Product or Service Financing arrangement Process time Order to Installation Period	Material Not available for Shelf Purchase Delay in Processing Order, Delivery or Installation of Product within scheduled period	Overcommitment on timelines Order Misrouted or Documentation Issue or Damages on Arrival Case	Order Cancellation without Information Supply Disruption for longer period due to various reasons
Repair	Processing time to make the product Usable FRT (First Response Time) and CCT (Call Closure Time)	Spares Availability Issues Capacity or Constraints to Handle the volume	Unavailability of Spares or Skilled Manpower (Significant Lead time) Cost to Repair being very high (Financially Non feasible) after certain period	Product discontinued Spares Unavailability
Return	Waiting for Confirmation from Customer Collection to Case Closure Time Processing time for accounting in stocks	Long Deferment from customer Delayed Collection from Authorized Vendor	Customer Refusal Lost in Transit	Customer Not Traceable Material not found
Recycle	Collection time from Downstream	Capacity Constraints to Recycle	Lack of Infrastructure or Technology Change in Policy	Non-Feasibility in terms of cost /usage or environment protection

Exhibit 1: Key Factors Affecting Time (FAT) in Value Chain

It's obvious that wait time can't be made zero but can be minimized by optimizing the FAT (Factors Affecting Time) in Value Chain. To bring optimization on these dimensions, there are several practices in place as of now and evolving. We must divide the solution in six dimensions to tackle this critical and complex issue at hand which can be called as Factors to Optimize Wait Time (FOWT)

(a)Predictability- Accuracy on the requirements which can visualized in advance is the best solution as each stakeholder is aware of the work at hand and constantly put efforts to minimize

(b)Visibility – Live updates is next step to ensure flow of Information at all levels and prepare the supply chain for minimal disruption with advance preparedness

(c)Tolerance Zone- An optimized tolerance zone to be defined statistically or non-statistically and consistent methodologies to be deployed for ensuring consistency in time and balancing cost to serve

(d)Variability – Bringing Variability in each component like cost, Capacity and Resource will reduce the wait time significantly and can bring competitive advantage

(e)Combined Capability Mix – Defining Ideal mix of Human, machine and Technology guided by Standard Operating procedures will significantly bring down the wastage happening due to wait time

(f)Flexibility- Arrangement to switch to alternative means, methods, sources and resources for sustaining the business

When examining solutions through the lens of the aforementioned dimensions that function as factors for optimizing wait time (FOWT), the following matrix can be employed as a standardized approach to address inefficiencies within the value chain and promote business sustainability.

Details	Implicit Wait Time	Explicit Wait Time	Interruption	Disruption
Raw Material	Predictability / Visibility	Combined Capability Mix/Flexibility	Predictability	Flexibility
Supplier	Variability	Tolerance Zone	Predictability / Variability /Visibility	Visibility /Tolerance Zone /Flexibility
Manufacturing Plant	Combine Capability Mix / Visibility /Tolerance Zone	Combine Capability Mix / Visibility /Tolerance Zone	Combine Capability Mix	Tolerance Zone /Flexibility
Distribution Centre	Combine Capability Mix / Visibility /Tolerance Zone	Combine Capability Mix / Visibility /Tolerance Zone	Combine Capability Mix	Tolerance Zone /Flexibility
Retailer	Predictability / Visibility	Visibility /Tolerance Zone	Visibility / Flexibility	Visibility / Flexibility
Customer	Predictability / Visibility	Flexibility `	Flexibility / Tolerance Zone	Visibility
Repair	Visibility /Tolerance Zone	Tolerance Zone / Visibility / Flexibility	Flexibility	Flexibility
Return	Visibility /Tolerance Zone	Visibility /Tolerance Zone /Flexibility	Tolerance Zone	Tolerance Zone
Recycle	Visibility /Tolerance Zone	Combine Capability Mix / Visibility /Flexibility	Combine Capability Mix / Visibility	Tolerance Zone

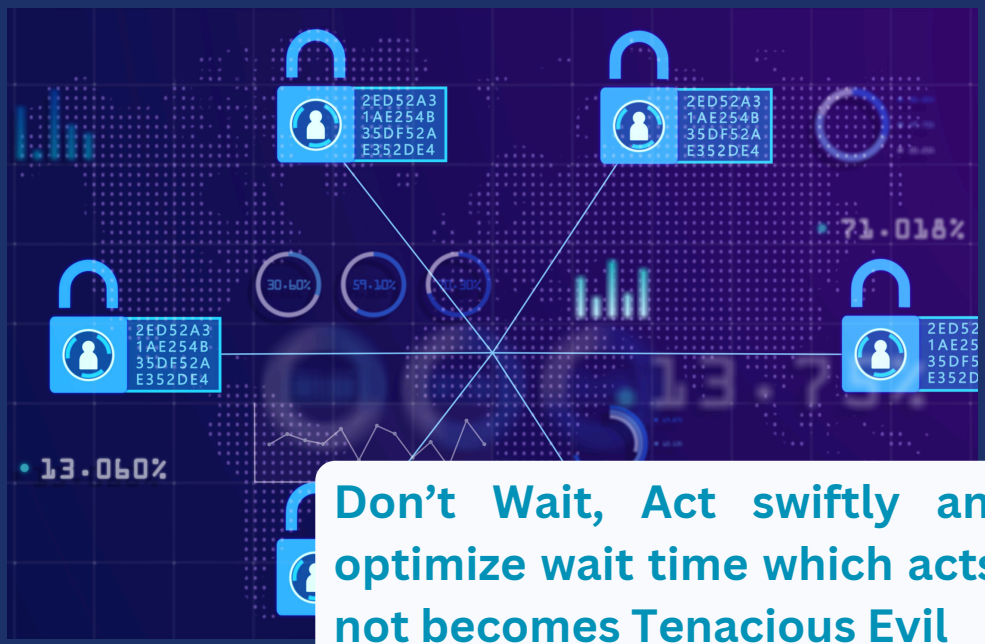
Exhibit 3: Matrix to Optimize Wait Time in Value Chain

Predictability	Forecasting Methods, Planning Engines, Data Analytics, Artificial Intelligence e.g.- Dynamics 365
Visibility	Digital Twins, Extended Warehousing Management System, Transport Management Systems, Dashboards, GPS Tracking e.g. Power BI , Tableau
Tolerance Zone	Statistical Limits for task in terms of Output, Quality, Timelines etc. e.g.- OEE, SMED, OTED
Variability	Make or Buy, Modular vs Additive Manufacturing, 3D Printing
Flexibility	Alternate Sourcing Capability
Combine Capability Mix	ASRS, Use of Bot and Robots, Usage of Drones

Exhibit 4: Methods and Measures to Optimize Wait Time

Changing business dynamics, competing supply chain, rapid digital evolution, ever changing customer preferences has led to different methods, means and mechatronics to take place and facilitate the supply chain and making Wait Time pivot to any organization

We are moving into era of artificial intelligent world, which is giving Real time data processing capabilities, Cognitive decision makings ability supported from smart technologies and widespread igitalization



Organizations have enhanced their capabilities and capacity to map, visualise, plan, analyse, and deploy tool, tech and processes to compete with time and keep the pace to move ahead of the competition despite Intrinsic and extrinsic factors affecting the Supply Chain Cycle time.

As we deliberate on the criticality of wait time, it becomes evident that wait time serves as a tactical tool when managed within both implicit and explicit levels. Even if circumstances deteriorate to the point of interruption or disruption, it is essential to implement strategies that swiftly restore wait times to the predefined explicit and implicit limits. Organizations that neglect to maintain consistent control over wait time may face detrimental consequences, potentially reaching an irretrievable state, thus rendering it a persistent challenge to hold this Tenacious evil.

Don't Wait, Act swiftly and decisively to optimize wait time which acts as Tactical Tool not becomes Tenacious Evil

About the author

Mr. Kuldeepak Singh is an author of best selling book “A Handbook on Supply Chain Management” a supply chain professional with a rich experience of a decade and half and handled multiple portfolios during his tenure. He has worked with organizations like Hindustan Latex Limited, Godrej & Boyce Mfg. Co. Ltd to name a few. He has good expertise in projects related to Supply Chain and has worked with one of biggest and oldest government health project Revised National Tuberculosis Control Project-II (RNTCP-II) as well. His expertise area includes Optimizing Secondary and Last Mile Logistics, Process Mapping, Cost Optimization, Operational Excellence, Productivity Improvement and Warehousing (RFQ to Operations Initiation) in Consumer Durables, FMCG Sector and Healthcare Domain.

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