

Just-In-Time Systems Eliminate the Bullwhip Effect

The Bullwhip Effect is a common problem in traditional supply chains. This problem is eliminated in a true Just-In-Time (JIT) system because of the elements present. The chart below illustrates how this problem is eliminated.

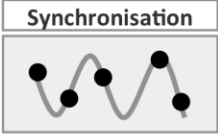
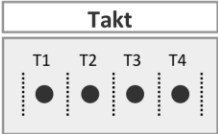
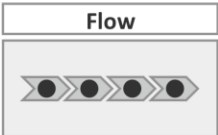
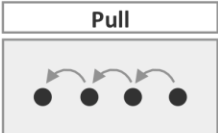
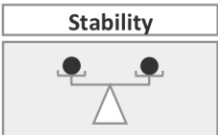
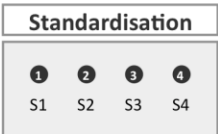
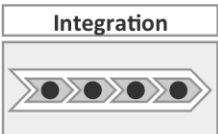
<i>Lean Logistics Principle</i>	<i>Description</i>	<i>Bullwhip impact</i>
 <p>Synchronisation</p>	Harmonised material flow by both volume and time without interruptions so that parts move in a coordinated and highly orchestrated way	<ul style="list-style-type: none"> • No overproduction or waiting time • Information replaces the need for inventories • Quick response to changing requirements
 <p>Takt</p>	Common signal which acts as pacemaker for all processes in a value stream	<ul style="list-style-type: none"> • No variation in process time • Each operation performs equally
 <p>Flow</p>	Manufacturing and moving just one piece at a time by consistently interchanging variants	<ul style="list-style-type: none"> • Reduced lead times with high throughput rates • Cuts down lot-size inventories in process • High variety flexibility through quick product changeovers
 <p>Pull</p>	Customer demand driven system where downstream operation provides information to the upstream operation - parts are only processed when a customer signals a need	<ul style="list-style-type: none"> • Decentralised material control with quick reactions to demand variations • High transparency with no information distortion
 <p>Stability</p>	Even material flow where the volume and variety of items produced are levelled over a fixed period	<ul style="list-style-type: none"> • Smooth and stable demand stream • Adjustment of surplus capacities • Avoids last-minute panics and confusions causing turbulences to material flows
 <p>Standardisation</p>	Creating a disciplined system with standardised times and methods for internal and external operations	<ul style="list-style-type: none"> • Improved process quality • Highly repetitive jobs with consistency in cycle time per unit
 <p>Integration</p>	Integration of activities both within the own company (internal) and between companies (external)	<ul style="list-style-type: none"> • Reduced uncertainty of material flow • Reduced control cycles and lead times • Quick response due to undistorted and undelayed data

Table 1: Impact of lean logistics principles on the bullwhip effect

