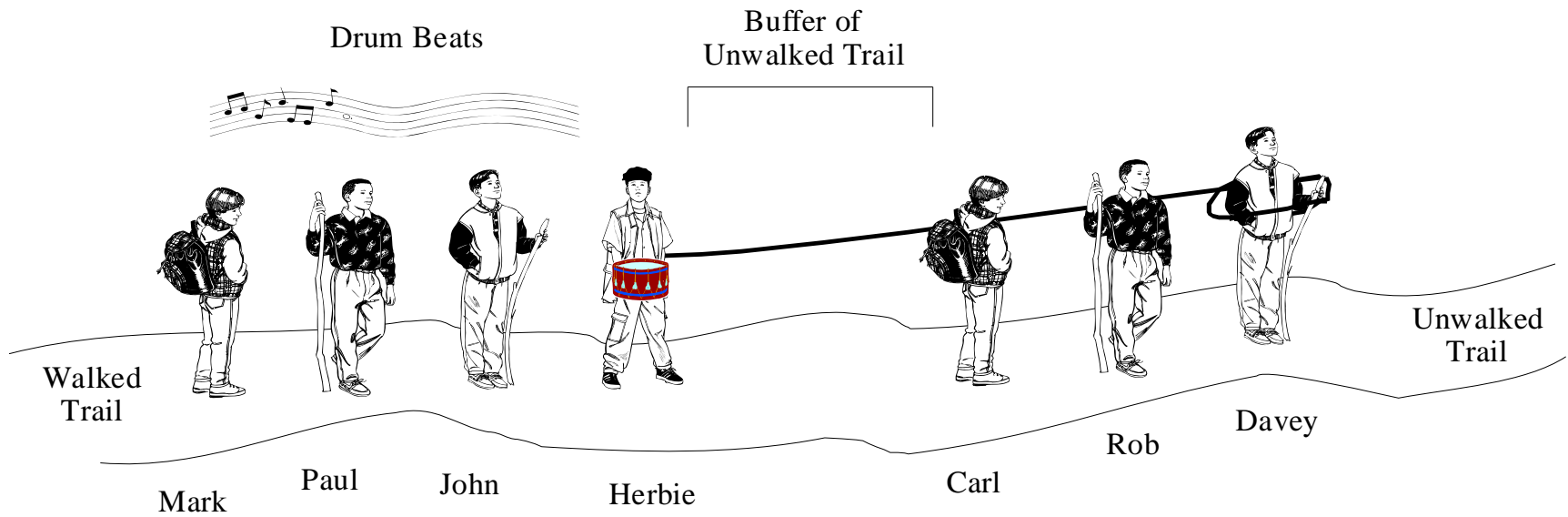


*THE THEORY OF CONSTRAINTS AND  
THROUGHPUT ACCOUNTING*

# Boys on a Hike



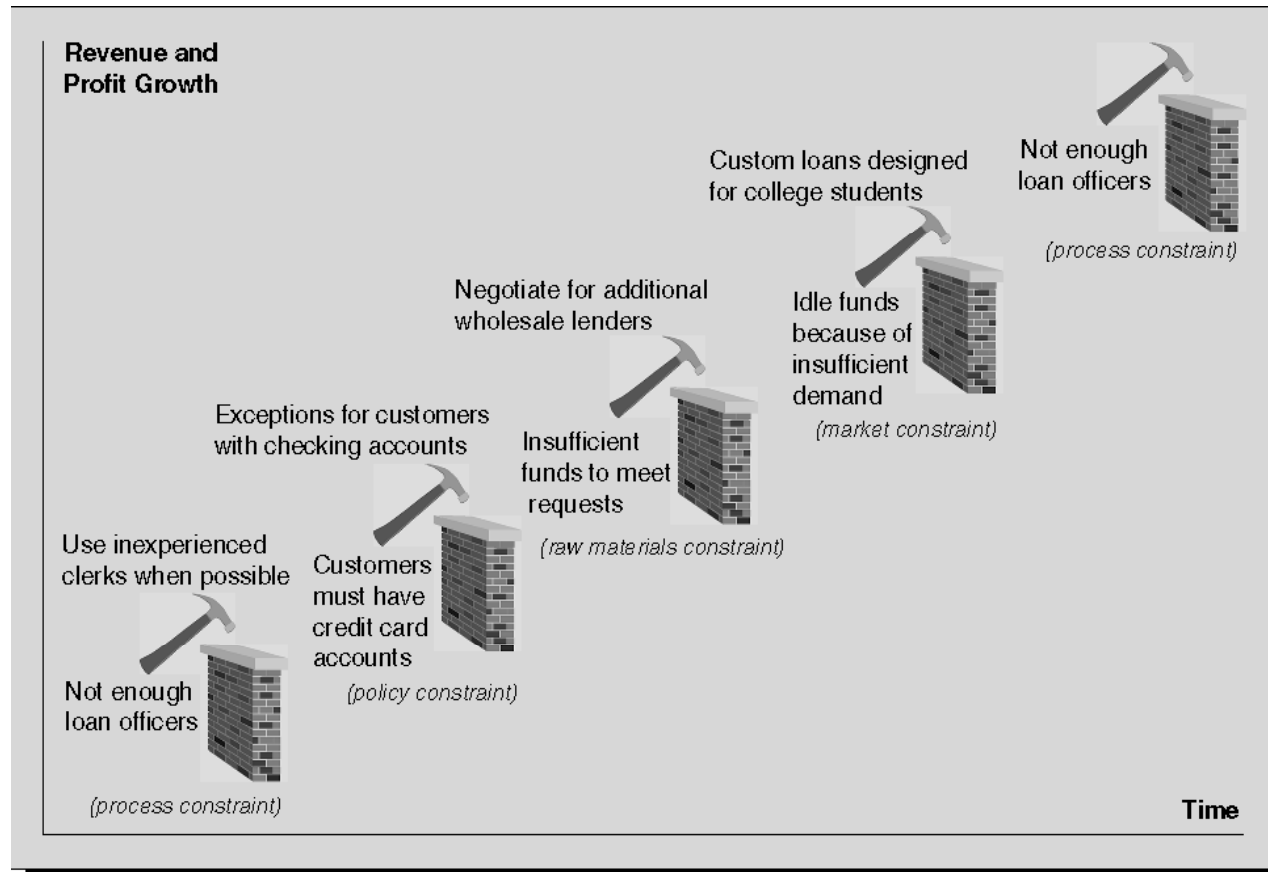
Term	Definition	Hiking example
throughput		
inventory		
operational expense		
statistical fluctuations		
dependent events		
direct materials		
bottleneck/ constraint		
the goal		

\*\* see The Goal, pp. 60-61, 101-102

## *The Five-Step TOC Process*

- ❖ Step 1. Identify the system's constraint(s).
- ❖ Step 2. Decide how to exploit the system's constraint(s).
- ❖ Step 3. Subordinate everything else to the above decision.
- ❖ Step 4. Elevate the constraint(s).
- ❖ Step 5. If a constraint has been broken, go back to step 1.

# Breaking Constraints for Continuous Improvement (Kaizan) using TOC



## *Comparing Three P&L Statements*

<b>GAAP Basis</b>		<b>Contribution Margin Basis</b>		<b>Throughput Basis</b>	
<b>Revenue</b>	<b>\$500,000<sup>a</sup></b>	<b>Revenue</b>	<b>\$500,000<sup>a</sup></b>	<b>Revenue</b>	<b>\$500,000<sup>a</sup></b>
<b>Cost of Goods Sold</b>	<b><u>(120,000)</u></b>	<b>Variable Costs<sup>b</sup></b>	<b><u>(155,000)</u></b>	<b>Direct Materials</b>	<b>( 50,000)</b>
<b>Gross Margin</b>	<b>\$380,000</b>	<b>Contribution Margin</b>	<b>\$345,000</b>	<b>Throughput Margin</b>	<b>\$450,000</b>
<b>Sell. &amp; Gen. Admin. Exp.</b>	<b><u>(350,000)</u></b>	<b>Fixed Costs<sup>c</sup></b>	<b><u>(315,000)</u></b>	<b>Operating Expense<sup>d</sup></b>	<b><u>(420,000)</u></b>
<b>Operating Income</b>	<b><u>\$ 30,000</u></b>	<b>Operating Income</b>	<b><u>\$ 30,000</u></b>	<b>Operating Income</b>	<b><u>\$ 30,000</u></b>

<sup>a</sup> Sales Price is \$5,000 per ton, 100 tons produced and sold

<sup>b</sup> Direct Materials (\$50,000) + Direct Labor (\$20,000) + Variable Manufacturing Overhead (\$15,000) + Variable Selling & General Administrative Expense (\$70,000)

<sup>c</sup> Fixed Manufacturing Overhead (\$35,000) + Fixed Selling & General Administrative Expense (\$280,000)

<sup>d</sup> All costs in the organization other than Direct Materials.

## THE GOAL: Chapter 31

### 1. Fallacious Assumptions

- p. 259 “According to the cost-accounting rules that everybody has used in the past, we’re supposed to balance capacity with demand first, then try to maintain the flow. But instead we shouldn’t be trying to balance capacity at all; we need excess capacity. The rule we should be following is to balance the flow with demand, not the capacity.” (Alex)
- p. 259 “The incentives we usually offer are based on the assumption that the level of utilization of any worker is determined by his own potential. That’s totally false because of dependency. For any resource that is not a bottleneck, the level of activity from which the system is able to profit is not determined by its individual potential but by some other constraint within the system.” (Alex)
- p. 259 “When somebody is working, we’re getting use out of him.” (Hilton)
- p. 260 “We’ve assumed that the utilization and activation are the same. Activating a resource and utilizing a resource are not synonymous.” (Alex)
- p. 260 “An hour lost at a bottleneck is just an hour lost of that resource. An hour saved at a non-bottleneck is an hour saved at that resource.” (Hilton)
- p. 260 “Bottlenecks temporarily limit throughput. Maybe your plant is proof of that. But they have little impact upon inventory.” (Hilton)
  - “It’s completely the opposite. Bottlenecks govern both throughput and inventory. My plant has shown that performance measurements are wrong.” (Alex)
- p. 260 “When costs go up, profits have to go down. It’s that simple.” (Hilton)