



Supply Chain Case Study

MTC MEDICAL DEVICE SUPPLIERS

Introduction

- ▶ Analysis of **MTC's** current challenges and opportunities, focusing on how the company can address a **2.3%** medical device tax and improve its profitability. We'll explore key areas such as **financial recovery**, **logistics optimization**, **demand forecasting**, and **strategic positioning**.
- ▶ In **2014**, MTC's net earnings were **\$663.96 million**, down from **\$856.68 million** in **2013**. This creates a shortfall of **\$192.72 million**. Adding the **2.3%** tax on 2014 revenue of **\$5.95 billion**—approximately **\$137 million**—we need to make up a total of **\$329.72 million**.



Increase revenue by \$329 million. How?

- ▶ ***Increasing sales volume*** through market expansion or new product introductions.
- ▶ ***Adjusting pricing*** strategically while staying competitive.
- ▶ ***Improving cost efficiency*** through better supply chain management.
- ▶ ***Optimizing operating expenses*** by cutting non-essential costs.
- ▶ ***Enhancing marketing and sales efforts***, including digital marketing and salesforce expansion.

LOGISTICS IMPROVEMENTS

- ▶ 1. **Bring sterilization in-house:** While this requires a significant upfront investment, it eliminates 120 hours of transport time and reduces transportation costs, which are close to \$3 per mile. Over time, this will lead to substantial savings.
- ▶ 2. **Partner with a 3PL for bulk delivery:** By outsourcing final delivery to a third-party logistics provider, we can reduce the responsibility of sales representatives, lower commission costs, and improve negotiating power with GPOs and hospital supply chains.
- ▶ 3. **Store safety stock in-house:** Replacing trunk inventory with centralized safety stock reduces operating costs and improves inventory tracking, while still meeting emergency needs through 3PL partnerships.

Trunk Stock Analysis

Pros:

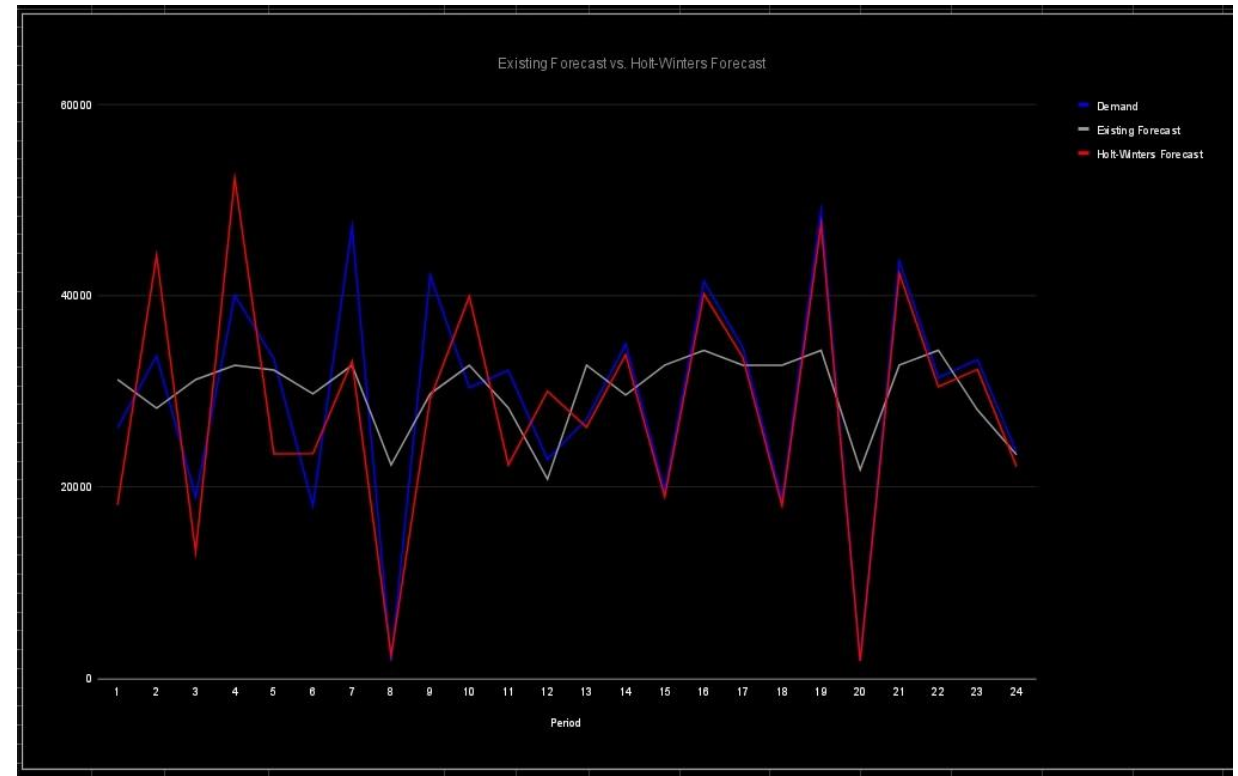
- ▶ Removes inventory responsibility from salespeople.
- ▶ Reduces commission costs and overall operating expenses.
- ▶ Improves inventory tracking and reduces dependency on distributors.
- ▶ Better protection against stock outs.

Cons:

- ▶ Initial costs for warehousing and inventory management systems.
- ▶ Potential strain on relationships between salespeople and doctors.
- ▶ Training costs for new inventory systems.

Demand Forecasting

- ▶ Holt-Winters reduces forecast errors, leading to better production and distribution decisions.
- ▶ It captures trends and seasonality, which MTC's current methods miss.
- ▶ For example, in August 2013, Holt-Winters reduced the MAPE from **16.78%** to **0.01%**, and in July 2014, it improved accuracy from **0.30%** to **0.03%**.



Strategic Positioning

Key Initiatives

- ▶ 1. **Deliver cost savings:** Offer competitive pricing, reduce TCO, and absorb some supply chain costs.
- ▶ 2. **Provide operational efficiency:** Streamline distribution, implement smart kiosks, and offer consignment inventory.
- ▶ 3. **Focus on quality and patient outcomes:** Ensure high product quality, provide training, and collaborate on clinical outcomes.
- ▶ 4. **Build strong relationships:** Engage with key decision-makers, leverage sales representatives, and participate in hospital value analysis teams.
- ▶ 5. **Demonstrate financial stability:** Ensure supply chain resilience, provide financial transparency, and offer long-term contracts.

Initiatives with Strategic Partners

Implement Just-in-Time (JIT) Inventory Systems:

- ▶ Reduce hospital inventory costs by delivering surgical kits only when needed, using real-time demand forecasting.

Deploy Smart Kiosks:

- ▶ Streamline inventory management by installing smart kiosks in hospitals, integrating RFID technology for real-time tracking.

Co-Develop Customized Surgical Kits:

- ▶ Work with hospitals and surgeons to design tailored kits for specific procedures, reducing waste and improving clinical outcomes.

Sterilization Make vs. Buy Analysis

Top 3 Reasons to Bring Sterilization In-House

- ▶ 1. ***Control Over Quality and Timing***: Ensures consistent quality and faster turnaround times.
- ▶ 2. ***Supply Chain Simplification***: Reduces transportation costs and improves efficiency.
- ▶ 3. ***Long-Term Cost Control***: Eliminates third-party markups and provides predictable costs as production scales.

Top 3 Reasons to Keep Sterilization Off-Site

- ▶ 1. ***Cost Savings***: Avoids upfront capital investment and leverages third-party economies of scale.
- ▶ 2. ***Focus on Core Competencies***: Allows MTC to focus on product innovation and customer relationships.
- ▶ 3. ***Reduced Regulatory Burden***: Third-party providers handle complex regulatory compliance.

Conclusion

- ▶ 1. Increasing revenue through strategic pricing, cost efficiency, and market expansion.
- ▶ 2. Optimizing logistics by bringing sterilization in-house, partnering with 3PLs, and discontinuing trunk stock.
- ▶ 3. Improving demand forecasting with the Holt-Winters method.
- ▶ 4. Positioning itself as a strategic supplier by delivering cost savings, operational efficiency, and strong partnerships.
- ▶ 5. Collaborating with hospitals on initiatives like JIT systems, smart kiosks, and customized kits.

