Proven Ways to Reduce Manufacturing and Production Costs

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Lincotek Medical

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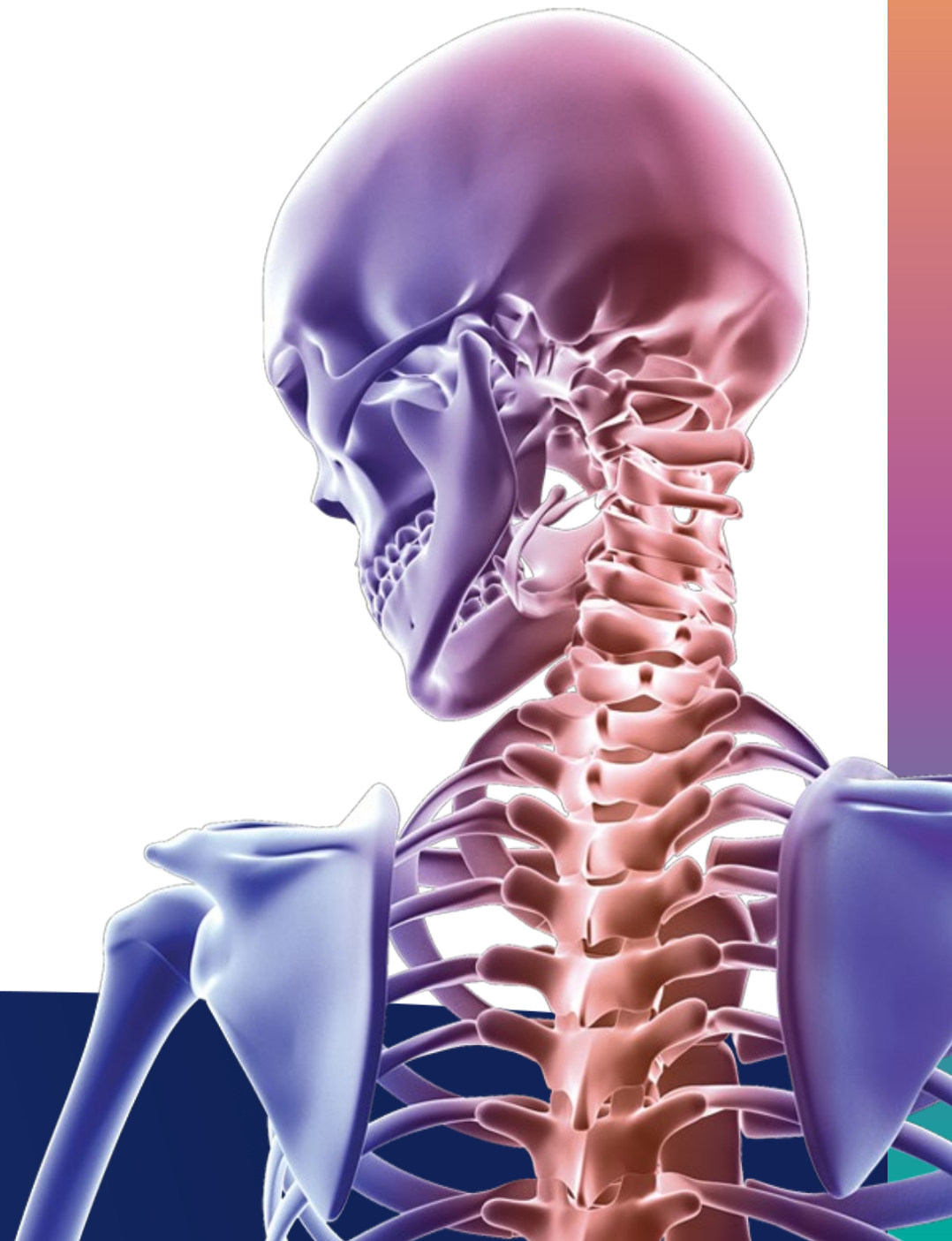

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Major Challenges

1 Profit Margin Squeeze

- Lower reimbursement rates in outpatient settings and limited differentiation among implants contribute to pricing pressures.
- Adoption of high-performance materials increases implant costs, further squeezing profit margins.

2 High Inventory Burden

- Traditional supply chain model requires ~12-month inventory levels, costing 8% of sales annually
- Driven by long lead times and Minimum Order Quantities
- Slows new product introductions as launch inventory builds are large

3 Slow Time to Market

- R&D teams are at a standing start, many items to de-risk (technical, regulatory, market)
- Manufacturing Engineering Transfer is labor intensive process
- Casting and forging tool design processes are lengthy

SITES MEDICAL

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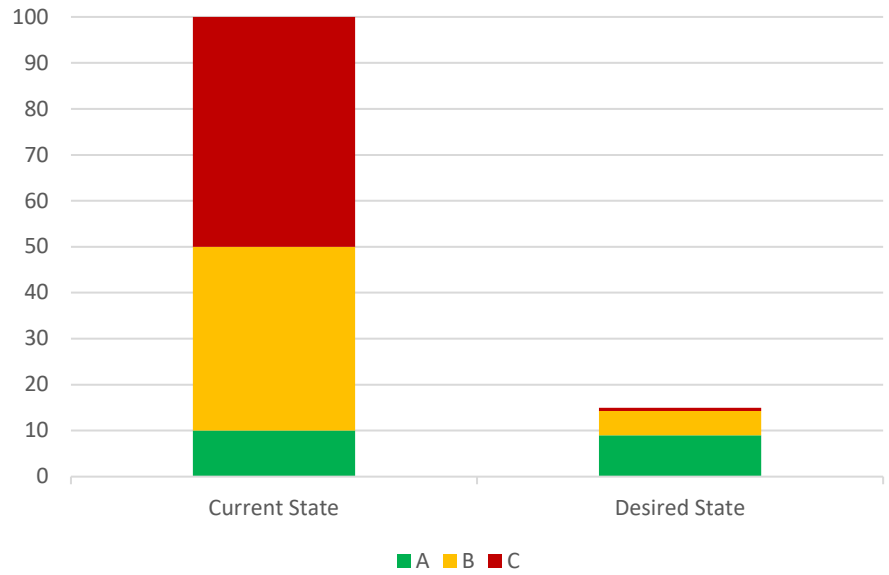
2 The Inventory Problem

Inventory composition should be proportional to revenue, but it isn't for a variety of reasons.

Inventory Proportions



Drivers of Unproductive Inventory

- Large economic order sizes in manufacturing
- Long manufacturing lead times
- Product delivery configuration – OR inventory sets
- Outlier sizes
- Difficulty forecasting low volume SKUs

The annual cost of inventory for an orthopedic OEM is >8% of sales (based on Cost of Money for inventory holdings, Excess & Obsolescence expense, Shipping & Handling expense).

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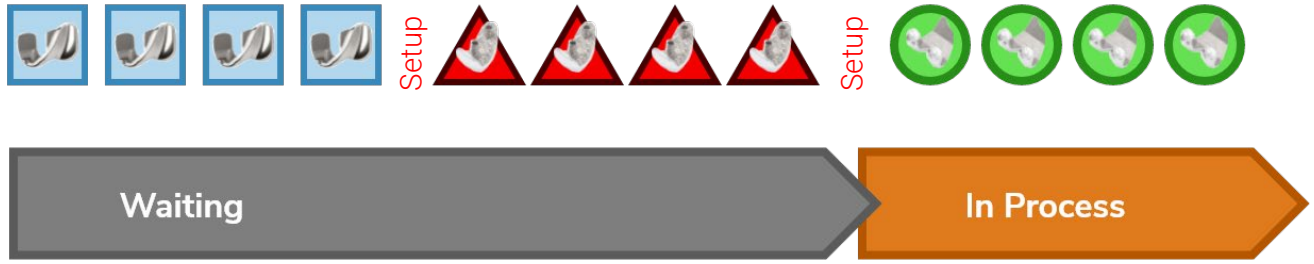
2 1 High Velocity Manufacturing

We are addressing the inventory problem through our High Velocity Manufacturing approach, whereby we build the highest quality implants in as few as 3 weeks, in lot sizes as low as one, in a highly economical way. We only build what is necessary to satisfy demand, thereby decreasing inventories.

TRADITIONAL BATCH FLOW



Machine setup time driving larger lot sizes for efficiency and cost

HIGH VELOCITY
SINGLE-PIECE FLOW

Zero setup time, dimensional stabilization and automation allow cost-effective manufacturing with lot sizes as low as one

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2 Inventory Case Study

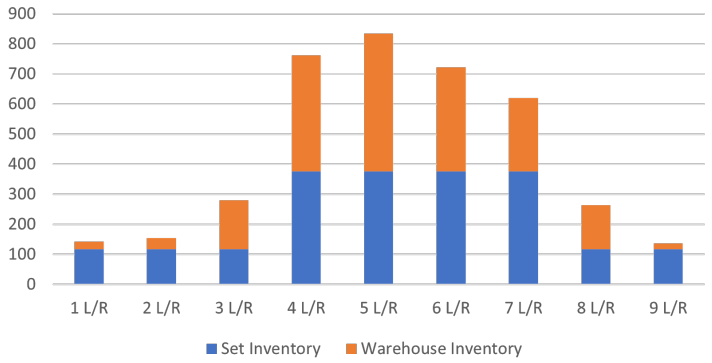
Key inventory model inputs:

- 5-year forecast from OEM
- Cost of capital 12%
- Excess and obsolete expense 2.5%
- Shipping and handling expense 2.5%
- Three manufacturing scenarios:
    1. Traditional batch manufacturing: TKR 4-month lead time, MOQ 15
    2. High Velocity Manufacturing (HVM): Set deployment is the same as traditional manufacturing; 4-week lead times and MOQ of 1
    3. Make-to-Surgical Plan (MtSP): Set deployment is much less than traditional manufacturing or HVM as only the product needed for surgery is manufactured, plus some safety stock; 4-week lead times and MOQ of 1

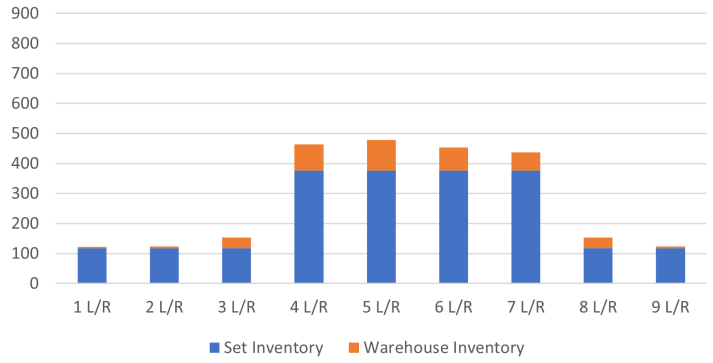
2 Inventory Case Study

Key inventory model outputs:

Traditional Manufacturing



High Velocity Manufacturing

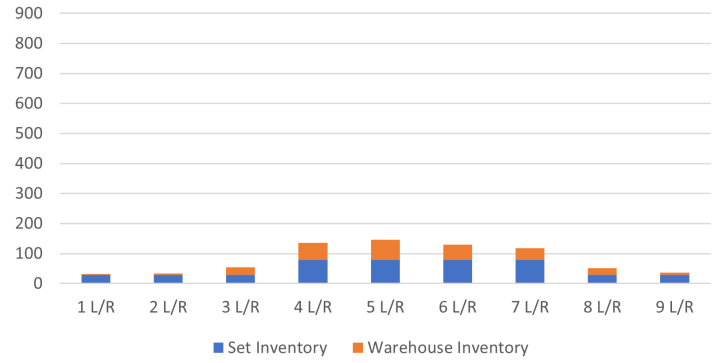


36% overall inventory reduction

77% WH inventory reduction

HVM (5 Yr)	Femur + Tib	Femur	Tibia
Unit Avoidance	2,899	1,623	1,276
Inventory Avoidance	$ 1,149,091	$ 761,187	$ 387,904
Carrying Cost Avoidance	$ 670,608	$ 515,619	$ 154,989
Cost Avoided per Unit	$ 78	$ 103	$ 49
NPV (12%)	$ 1,624,731	$ 1,140,005	$ 484,726

Make-to-Surgical Plan Manufacturing



81% overall inventory reduction

85% WH inventory reduction

MtSP (5 Yr)	Femur + Tib	Femur	Tibia
Unit Avoidance	8,154	5,665	2,489
Inventory Avoidance	$ 3,413,541	$ 2,656,885	$ 756,656
Carrying Cost Avoidance	$ 2,232,617	$ 1,700,106	$ 532,511
Cost Avoided per Unit	$ 276	$ 410	$ 131
NPV (12%)	$ 5,041,212	$ 3,890,171	$ 1,151,042

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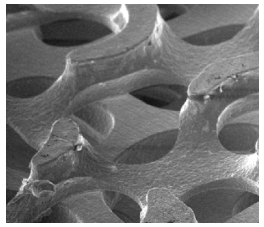
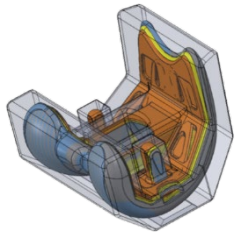
High Performance Implant Solutions Delivered Faster

Faster Design



OsteoSync Ti

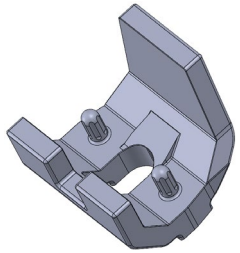
- Advanced characteristics
- Proven performance
- Proven attachment
- Broad application
- FDA Masterfile



Universal Castings & Forgings

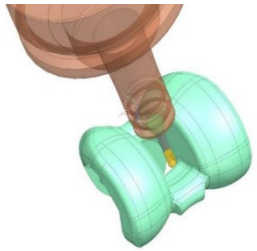
- Off-the-shelf availability
- Multiple OEMs
- Multiple Sizes
- Enable rapid prototyping during design
- Accommodate design changes

Faster Manufacturing Transfer



Targeted Castings & Forgings

- Short lead times
- OEM specific
- Size specific
- L/R compatible
- Narrow/wide compatible
- Enable rapid manufacturing transfer
- Cost effective



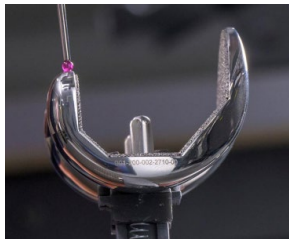
Digital Twin

- Facilitates scaling of DMR (Programs, inspection plans, risk files)

Zero Set-up

- Standard fixturing
- Standard tooling
- Digital DMR
- Enables Make-to-Surgical Plan Mfg

Faster Production

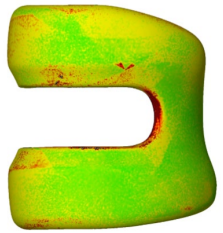


Dimensional Stabilization

- Reduced part movement
- Uninterrupted Process Flow

Automated Transfer Systems

- Autonomous operation
- Uninterrupted Process Flow



100% Inspection

- Accommodates varying lot sizes (as low as one)
- State-of-the-art eQMS w/ Siemens Teamcenter
- Advanced In-line Inspection Technologies

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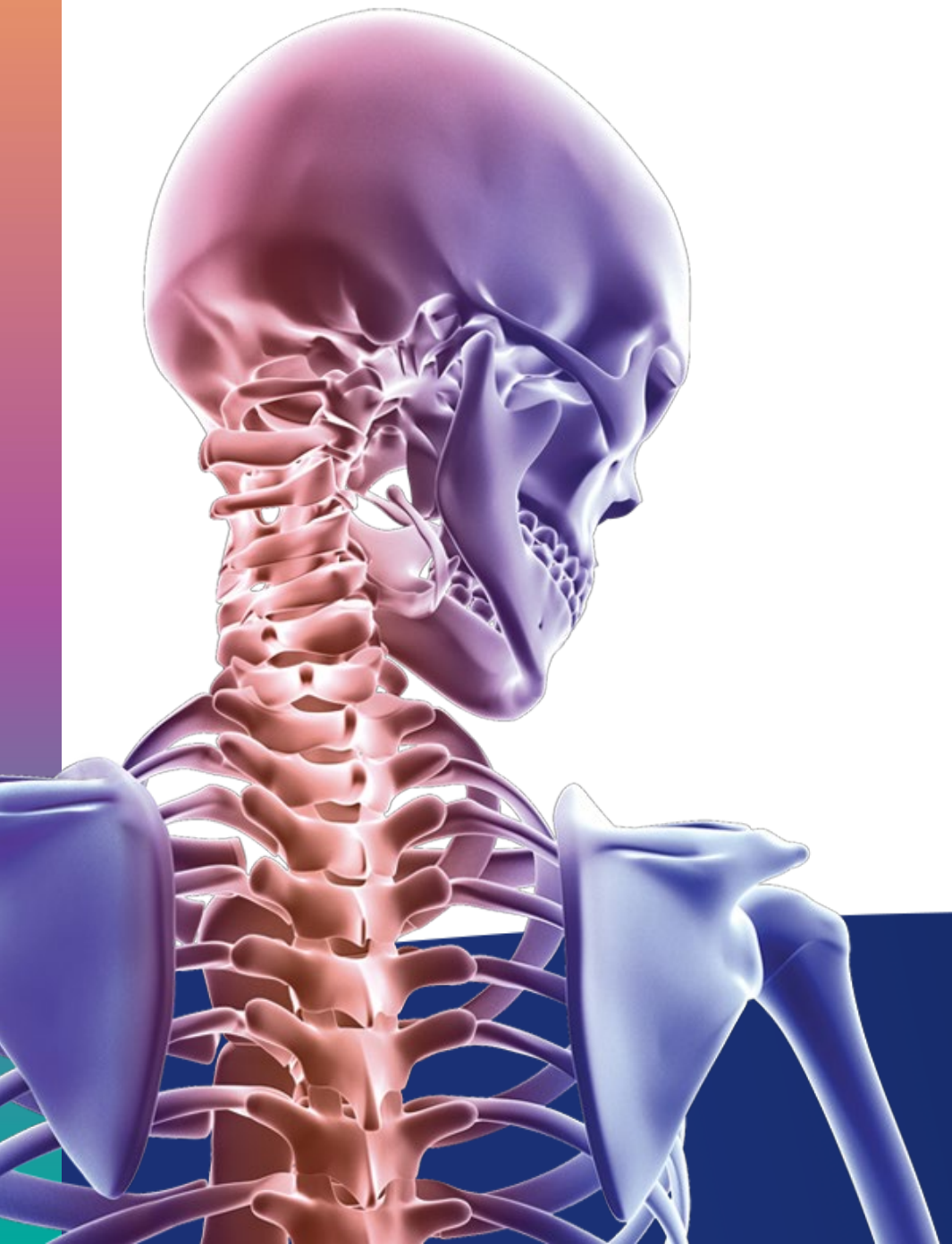

Thank You

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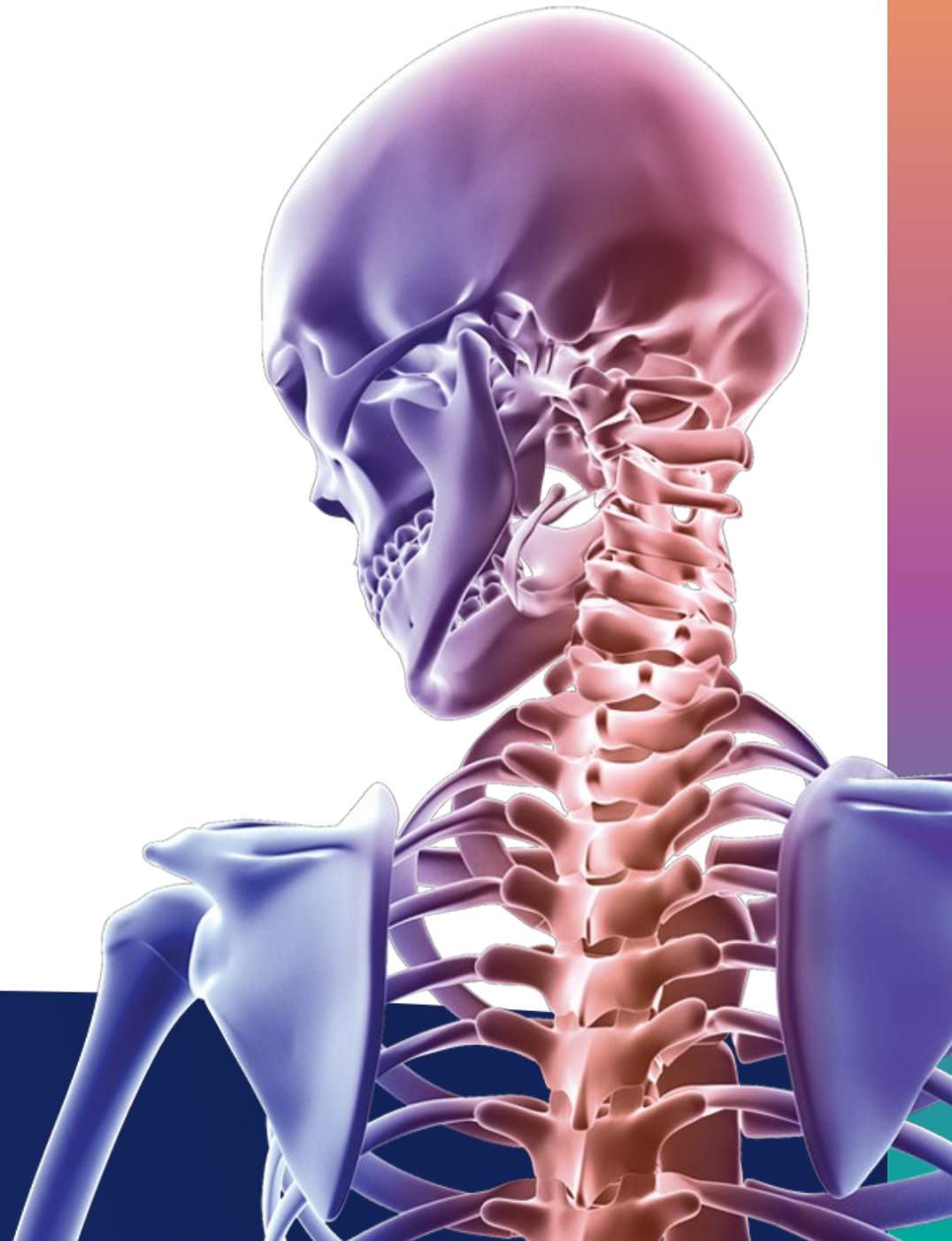
Kris Carter
Director of Supply Chain
Total Joint Orthopedics (TJO)



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The Cost Pressures Facing Orthopedic OEMs

- Global & Economic Headwinds
  - Increasing tariffs
  - Persistent economic uncertainty
- Shrinking Operational Margins
  - Rising labor & material costs
  - Lower reimbursement rates at hospitals and ASCs
- Operational Inefficiencies
  - High inventory carrying costs
  - Fragmented, multi-tiered supply chains

My Focus Areas

- Driving Cost Reduction
- Reducing Lead Times
- Increasing Order Flexibility
- World Class Product Quality
- Avoiding Stockouts

Two Opportunities to Drive Change

- Make the RFQ Process as a Strategic Lever for Cost Reduction
- Inventory Optimization

Make the RFQ Process a Strategic Lever for Cost Reduction

Use the RFQ as collaboration tool, not a price war

- Focus on total value (cost, quality, lead time, flexibility)
- Engage supplier in early-stage DFM and value engineering
- Invite alternatives on tolerancing, inspection & manufacturing methods
- Vet supplier for risk, capacity and scalability
- Be up front about expectations and constraints
- Build long-term relationships on shared goals

Smart Supplier Selection

- Right-sized the relationship: avoid suppliers too big or too small
- Prioritize flexibility with open POs, responsiveness to changing demand
- Strategic fit over lowest price
- Explore vertical integration and supplier consolidation where it makes sense
- Leverage economies of scale and new technology
- Prioritize continuous improvement

Mach Medical Design Transfer Case Study

TJO Primary CoCr Femur Transfer

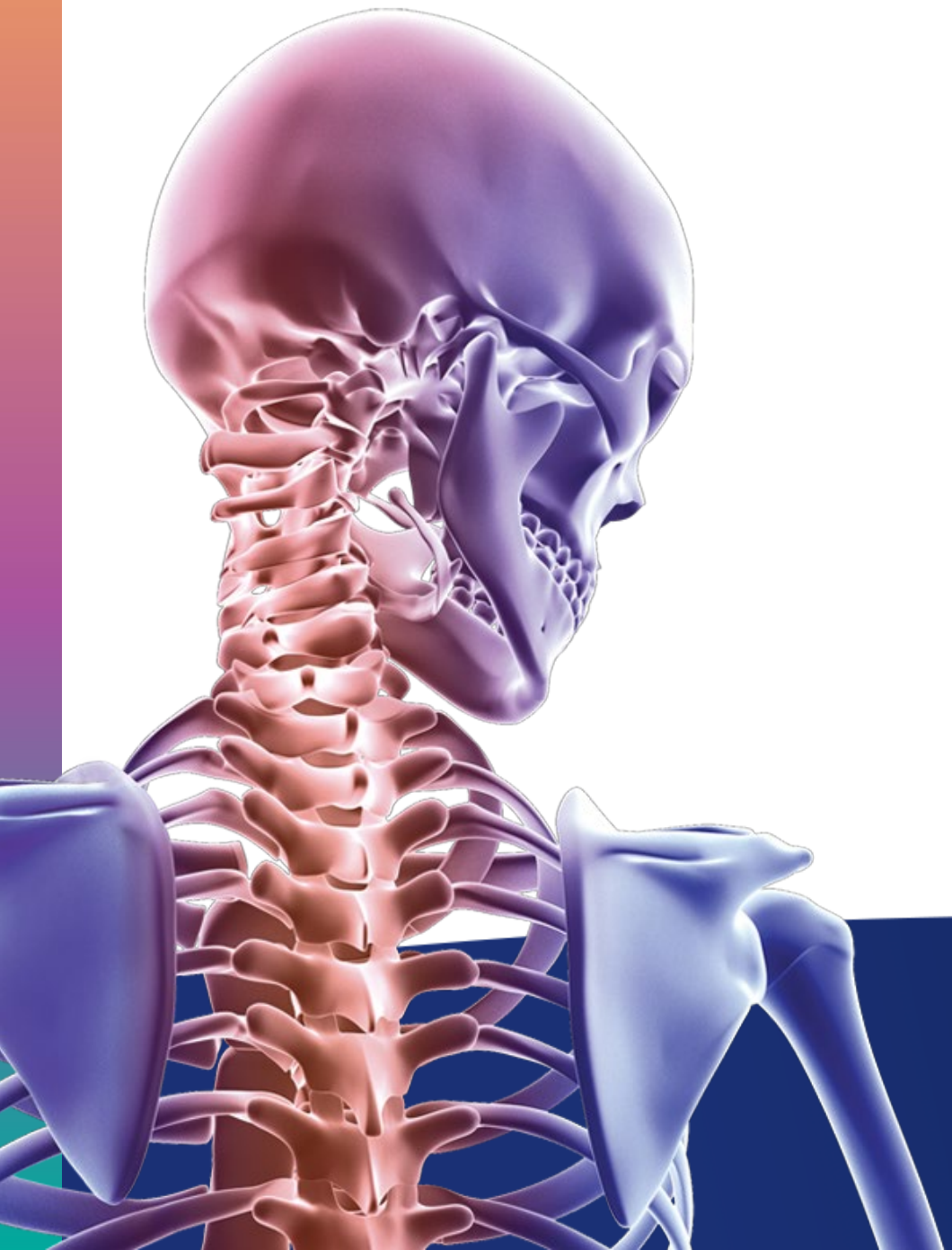
- Conducted capability validation with Mach Medical's universal femur casting
- Building TJO-specific casting tools for all sizes in parallel
    - Mach sourced at a new to TJO supplier

Results:

- Forecasted savings of 20%+ PO spend cost savings
- Reduce primary femur carrying costs
- Reduced lead times enabling smarter purchasing decisions

Inventory Optimization

- Implement Vendor Managed Inventory / Kanban Agreements
- Continually monitor and adjust safety stock strategies
- Improve forecasting accuracy with smarter tools
- Classify and Segment Inventory (ABC) for focused management
- Rationalize Field Inventory and Consignment
- Align inventory strategy with product lifecycle
- Leverage data and analytics to make smarter decisions



Thank You

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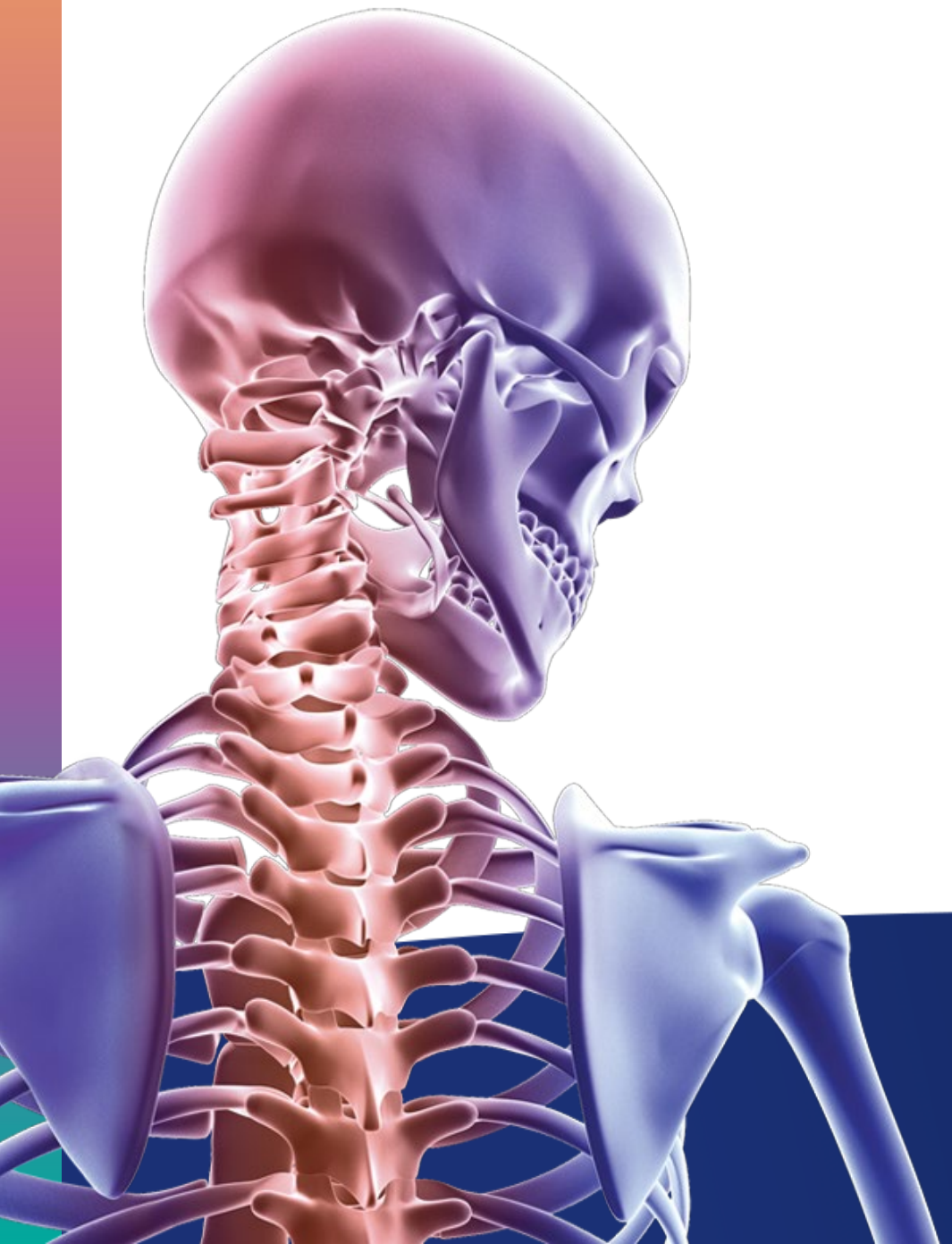

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