The State of the Medtech Industry

A Volcano Under the Snow

MPO Summit
San Diego, California
October 18, 2023

A.S. Freeman
ADVISORS, LLC

The Question Driving Today's Presentation

- What is the size and direction of the medtech industry?
- How will the industry's direction change the structure and players in the supply chain?

Who will be sitting here five years from now?

Executive Summary

- Healthcare at inflection point due to rising patient load and unsustainable costs
- Economic necessity will lead to product changes:
  - More digitally networked devices for better patient, payor outcomes
  - New classes of wellness and health monitoring devices to avoid or delay costly treatments
  - Healthcare workflow devices for greater productivity
- Contract manufacturing incumbents face strategic decisions as firms with digital expertise expand into medtech manufacturing
- Supply chain leadership is likely to shift towards large CMs with digital content expertise

About A.S. Freeman Advisors

Tony Freeman
President

A.S. Freeman ADVISORS, LLC

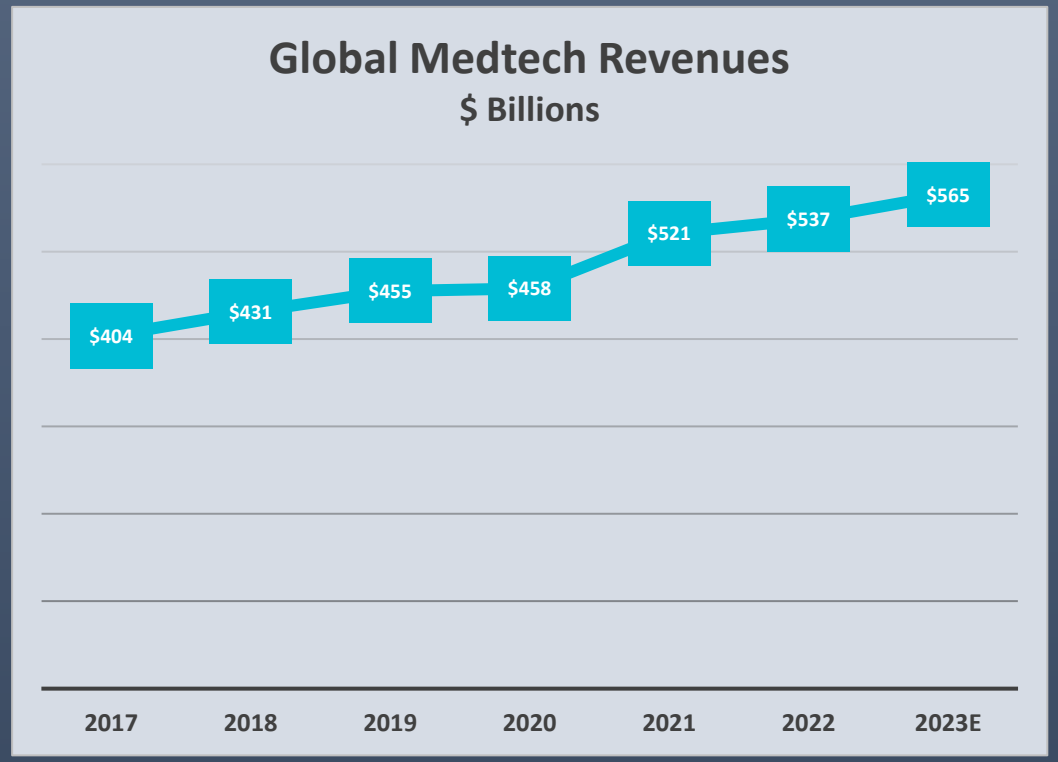
- Merger and acquisition advisory services
- Corporate strategy in support of valuation
- Focus on precision manufacturing and specialty materials markets
- Publishes Global Trends: Medical Device and Diagnostic OEM Strategy and Implications for the Supply Chain
  https://asfreeman.com/global-trends-in-medtech-2023/
- www.asfreeman.com

Perspective and Methodology

- Focus on the “seismic trends” driving the industry
- Three- to 10-year horizon
- Source materials:
  - OEM presentations to analysts and investors
  - Contract manufacturer public statements
  - Government health, financial, and demographic data

The Medical Technology Market – Size and Growth Rate

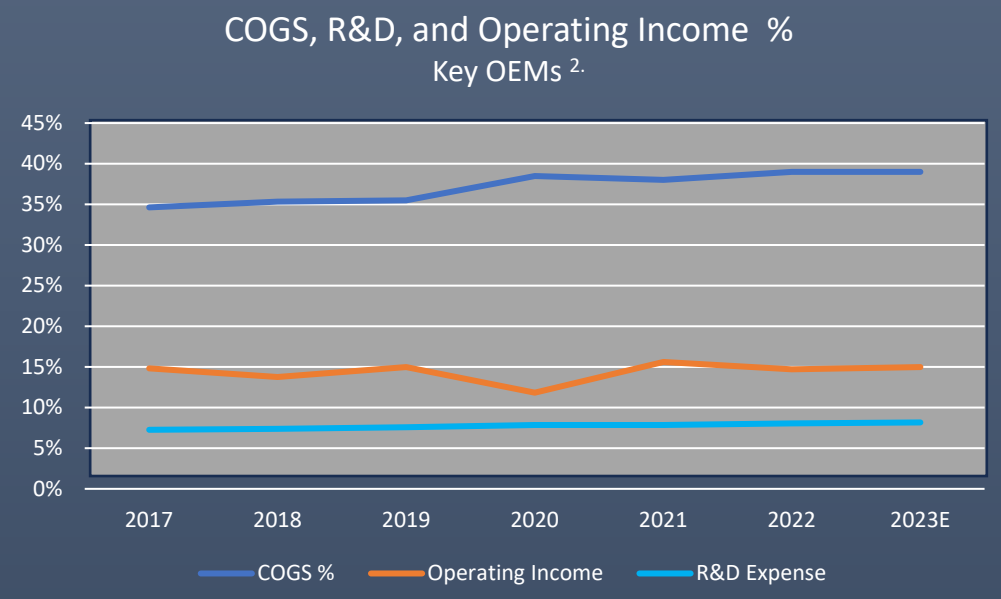
- On path for $565 billion in 2023 [1.]
- Projected revenue growth rate of 5.9% through 2026 [1.]
- In line with 5-year revenue CAGR of 5.8%
- Estimates range from 4% to 8%, depending on OEM



Medtech remains a steady growth industry and is unlikely to diverge in the next several years

Top OEM Financials – Something Interesting in the Numbers

- Rise of Cost of Goods Sold
  - Inflation
  - Supply chain disruptions, weaker overhead absorption
- Operating income hovers around 15%
- R&D increasing from 7.25% to just over 8.1%
  - Points to significant number of product launches
  - OEM faith/dependence on the future of new products



Recent challenges but investment for long-term growth

What Are MedTech's Key Drivers and Drags?

Drivers

- Aging populations in developed countries
- Growing middle class in developing countries
- Health infrastructure buildout in developing countries
- Treatment of chronic diseases (often "diseases of affluence")

Drags

- Max reimbursement approaching in US, W. Europe, Japan

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Drags

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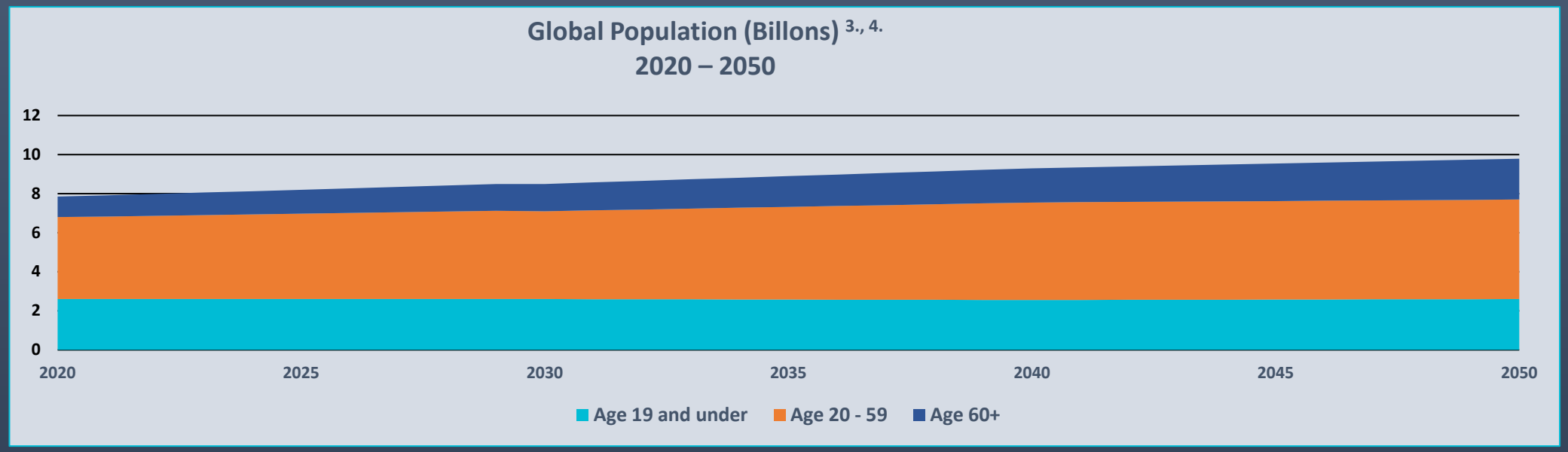
Aging Populations

- 2020 – People over 60
  - 1 billion of 7.8 billion
  - 12.8% of global population
  - More over 60 than under 5
- 2050 – People over 60
  - 2.1 billion of 9.7 billion
  - 22% of global population



Implications

- ***Not enough money***
  - More old people than young people
    - Massive increase in medtech spending
    - Decline in ratio of healthy workers/taxpayers to older healthcare consumers
  - Already at peak/near-peak healthcare spending in developed countries
    - US at questionably sustainable at 18% GDP, touched 19.7% during covid
    - Other developed countries between 11% and 16%
    - Value-based healthcare will help, but will not solve the money problem
- ***Not enough providers***
  - Insufficient healthcare staff given current productivity
  - Covid demonstrated the limits of healthcare capacity

A Volcano Under the Snow

- Current system unsustainable
- Compelling economics for change
  - Keep people healthier for longer
  - Make healthcare staff more productive
- ***Early signs of revolutionary product change***
  - Demographics and economics will force profound changes to healthcare
  - New, radically different devices are required to make a pivot to healthier populations and more productive healthcare staffs
  - Most of these devices require digital capabilities to function
  - Many will be produced at consumer, not medtech volumes
  - Few current suppliers have the expertise to meet these manufacturing requirements

A Note on Terminology

- Tangible content = metal, plastic, elastomeric, and ceramic components, assemblies and packaging in and around a medtech device
- Digital content = the sum of electronics, software, and networking technologies in and around a medtech device

Three Quickly Evolving Classes of Devices

- Digitized ecosystems for acute/chronic care
- Wellness products that stop, delay, or reduce acute/chronic care
- Workflow management devices that expand healthcare productivity

All have digital content,
all are in their early stages

Rising Digitization in Acute/Chronic Care Devices

- Traditionally standalone devices are being knitted into information sharing devices
- Many mechanical/electro-mechanical devices require digital hardware and software to be relevant in modern care settings
- Over 70% of major product family releases by key OEMs are digital or digitally enabled devices
  - Medtronic – 11 out of 15
  - BD – 20 of 36
  - ResMed – 100%

Stryker Crossflow Integrated Arthroscopy Pump

- Arthroscopy pump with “ReconiSense” technology determines suction rates for cutters, burrs and RF tools
- Ensure better visualization
- Result is safer, less costly procedures
- The incremental value is in the electronics/software/data

If the “new value” comes from electronics, who leads manufacturing?

Wellness Devices

- It's cheaper to:
  - Avoid acute episodes
  - Avoid chronic, costly diseases
- Wellness devices will be necessary for:
  - Lifestyle compliance (exercise, BP, blood sugars)
  - Medication compliance
  - Monitoring/early warning

Consumer devices in many cases

AliveCor KardiaMobile

- Medical-grade EKG system paired to smart phone
- No professional training required
- Warns of a-fib, other unusual heart rhythm symptoms
- Can email EKG to doctor
- Works anywhere
- ***$79 on Amazon*** [5.]
- Early warning of CR issues can avoid costly emergency treatments, hospitalization, and rehabilitation

KARDIA™ by ALIVECOR

Economics of Wellness

- Cost comparison
  - $79 KardiaMobile + $125 doctor visit = $204
  - Stroke triggered by atrial fibrillation = $143,000 in hospitalization and rehab [6.]
  - Will reduce need for acute treatment devices for stroke and cardiac rhythm
- The math is indisputable. Payers have an economic incentive to push wellness devices towards patients
- Will wellness devices eliminate acute and chronic care devices? No, but it will bring new players into the supply chain
  - Digitally expert
  - Used to consumer product production levels
  - Potentially powerful future competitors

Workflow and Process Navigation Systems

- Rise of workflow and process analysis on factory floor
- Rise of workflow and process analysis in and out of hospitals
- Healthcare economics require greater productivity from providers and facilities

A blurring of lines between therapeutic device and the process, workflow, and business of care systems

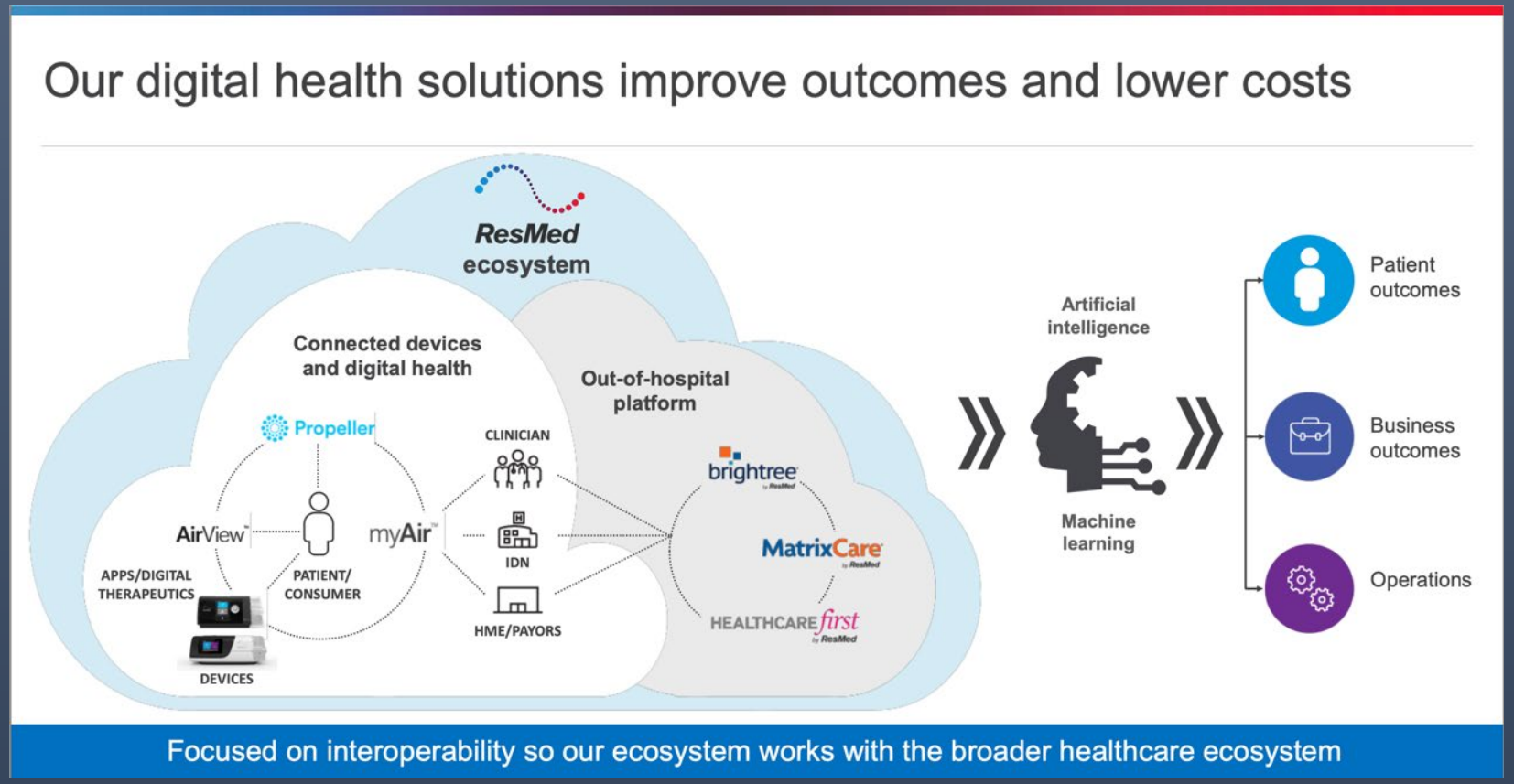
ResMed Suite

- Isn't ResMed a respiratory products company?
- Ventilation, COPD, sleep apnea for hospital and home
- Only a portion of ResMed's strategy

ResMed, a major OEM, is blending automated healthcare procedures/management with devices

Blending Devices With Healthcare Management

ResMed calls itself a digital healthcare company



Graphic from ResMed

Tangible Products or Digital Health Firm?

Four digital offerings

- Propeller – patient reporting and monitoring
- Brightree – "Revenue cycle management"
  - Reorder supplies for home users
  - Tracking and record keeping
  - Billing
  - Electronic prescription/referrals
- MatrixCare
  - Electronic health records from primary care through post-acute care (rehab, home care, nursing homes)
- Healthcare First
  - Scheduling out-of-hospital services
  - Communications among healthcare staff and patients for appointments and therapies

Tangible Products or Digital Health Firm?

SaaS is about 12% of ResMed revenues

Propeller

brightree® by ResMed

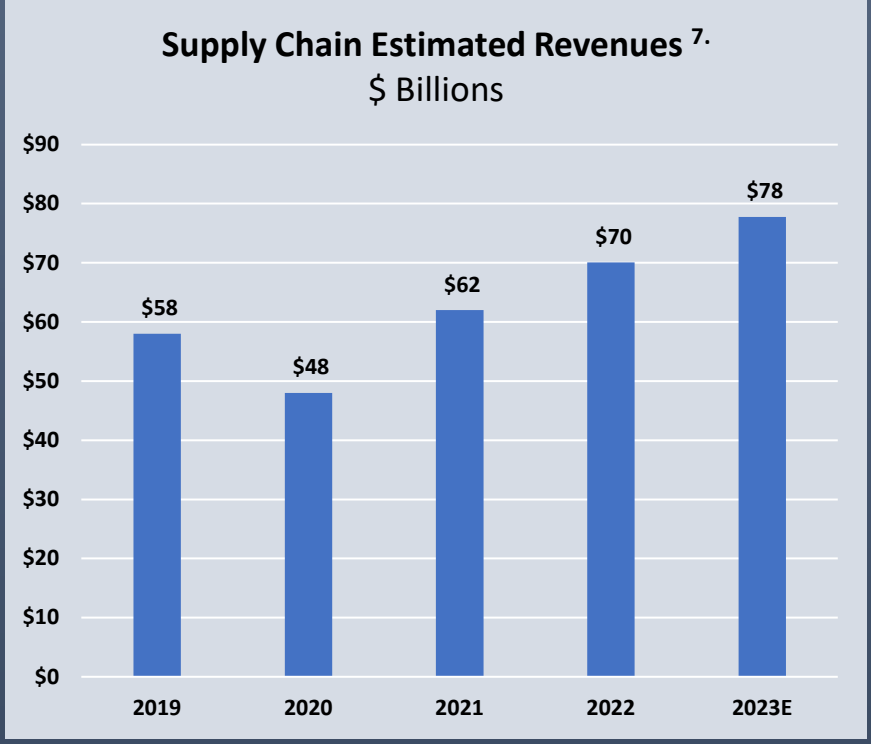
MatrixCare® by ResMed

HEALTHCARE first by ResMed

The Supply Chain

Supply Chain Size and Growth Rate

- Supply chain roughly ~$78 billion in 2023 [7.]
- Always a murky number
- Return to normal growth in 2023
  - Rebuild inventories post-covid
  - Delayed programs coming to market
- ~29% of medtech is outsourced
  - "Sweet section" of growth curve
  - ASFA estimates 9% YOY growth through 2025
  - Lower than most estimates, inventory bulge in 2024?
  - Growth decline to medtech market growth starts in 6-9 years?

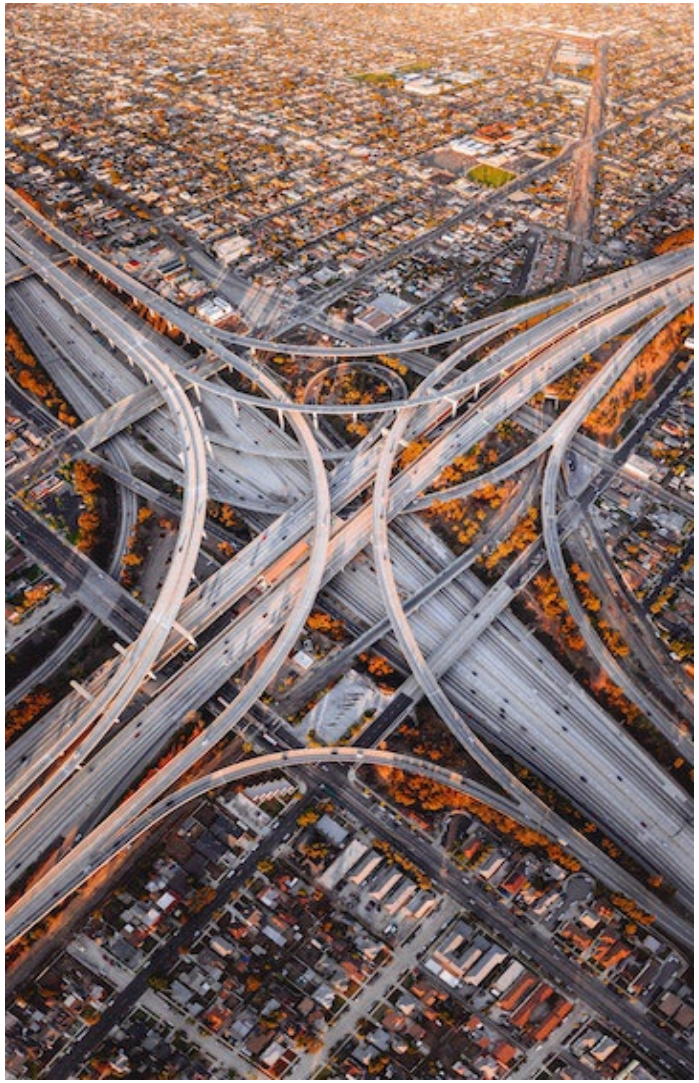


OEM Supply Chain Strategy – It's Unclear

- Covid
  - Original driver to "think about the unthought"
  - Challenged the single-supplier, JIT inventory utopian vision
- Post-covid, OEMs talked about resilient supply chain strategies
  - Covering natural disasters
  - Increasingly hinting at geopolitical risk
- Two general themes:
  - Regionalization of supply "Build where you sell"
  - Redundancy of supply "Expand dual sourcing"

CM Issues for the Next Five Years

- Supply chain roles
  - Roles are becoming more structured
  - Aerospace or automotive model? Something else?
- Digital content
  - Who will manufacture digital device content?
  - What is the role of digital supply chain companies on the selection of other vendors?



Supply Chain Roles

- Slow rise of the prime contractor on flagship devices for top 30 OEMs
- Often run by program managers at top 10 CMs
- Evolving to program management offices?
- Prime contractors increasingly control
  - OEMs slowly handing off selection of sub-contractors and suppliers to the prime contractors
  - Control increasing as primes complete a few programs for major OEMs
- Evolving towards the tiered aerospace supply chain model
- Trend is less applicable to smaller OEMs and startups

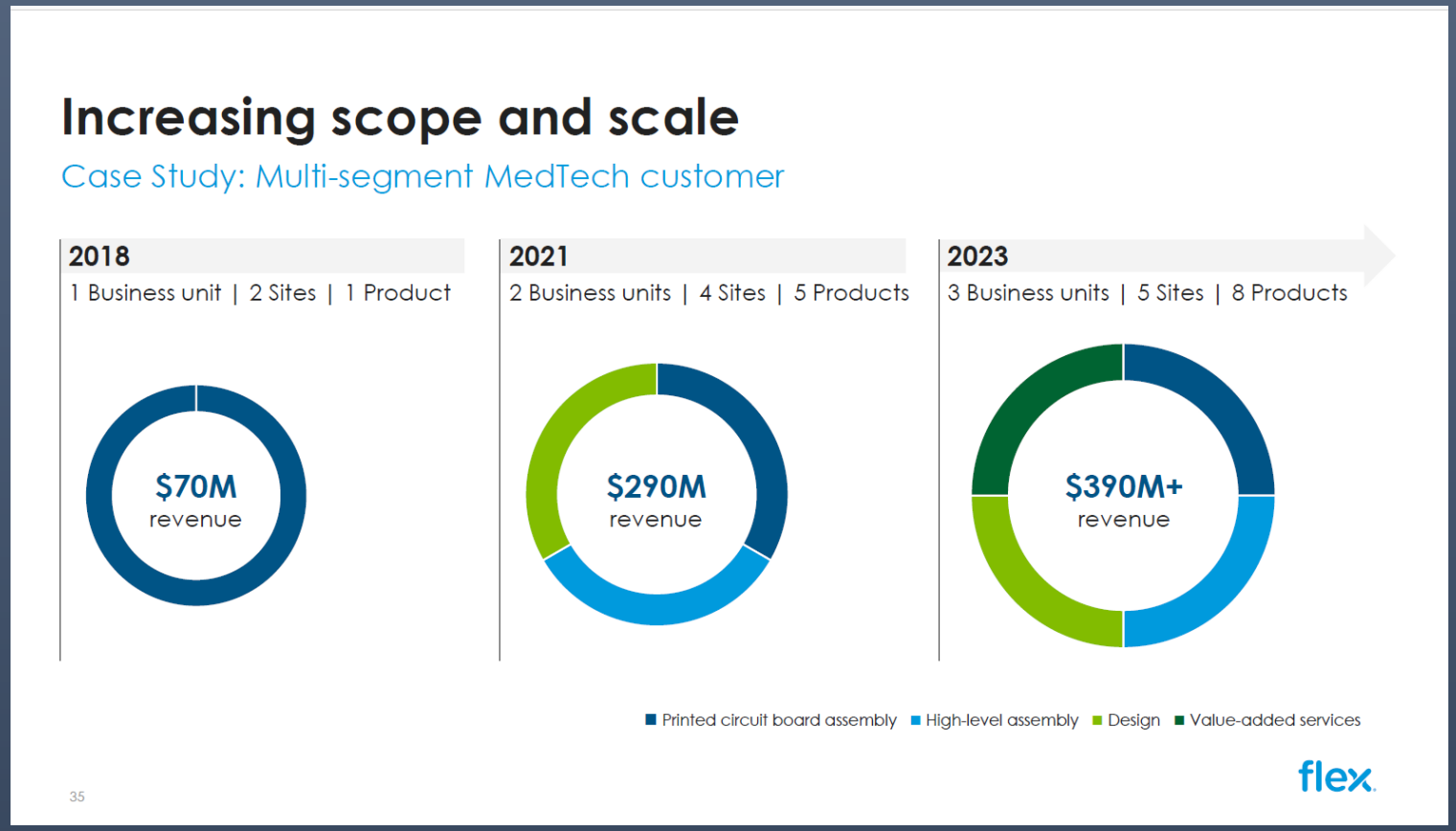
Growing disintermediation risk for smaller suppliers, regardless of quality or price

Which Supply Chain Firms Will Dominate Digitized Devices?

- Many of the incumbent CMs face a challenge
  - Focus on metal and plastic components, assemblies, packaging, sterilization
  - Little to no electronics or digital design capability
  - No background in digital standards (communications, networking, security)
- Global CMs with digital content backgrounds are in the strongest position

The Flex Example

- Starting with printed circuit board expertise
- Captured more content in design, manufacturing, and assembly
- Few CMs can offer this portfolio of services



Source: Flex Investor Day 2022 Virtual Investor and Analyst Day Presentation [8.]

Anyone Else? Opportunists Who Stick

- Electronics manufacturing and software companies
- Limited medtech experience but will be drawn by the industry's opportunities
- They may start as "junior partners" in projects with incumbents
- Some will expand/buy/partner their way into important CM roles
- Will start to bring their preferred tangible products partners into the mix
- Significant attrition of newcomers but some will establish themselves in the supply chain

Can “Non-Digital” CMs Survive?

- Depends on strategy
- Three approaches
  1. Stick to the tangible
  2. Invest in electronic/digital capabilities
  3. Become an integrator

Back to the Five-Year Question – Who Will Be At The MPO Summit?

- Incumbents will still be around though more distant from large customers as prime contractors become more prevalent
- More employees of larger CMs
- Many more digital content experts
- More designers of consumer-scale wellness products
- More developers integrated therapeutic and workflow systems

Rise of digital content will shift the makeup and leadership of the medtech supply chain

End Notes

1. Estimate formed by A. S. Freeman Advisors staff from publicly reported revenues of MPO's Top 30 OEMs (https://www.mpo-mag.com/top-30) and their estimated share of complete medtech contract manufacturing market.

2. Reported COGS, Operating Income and R&D spending for the select members of the MPO Top 30 OEMs that separately report these three categories of expense in their annual reports. Selection based on applicability of product portfolio to MPO Summit audience.

3. *Ageing and Health*, World Health Organization data sheet, October 1, 2022, https://www.who.int/news-room/fact-sheets/detail/ageing-and-health

4. United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects 2017* – Data Booklet (ST/ESA/SER.A/401). https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Jan/un_2017_world_population_prospects-2017_revision_databooklet.pdf

5. AliveCor KardiaMobile on Amazon.com. https://www.amazon.com/KardiaMobile-Single-Lead-Personal-Monitor-FDA-Cleared/dp/B01A4W8AUK/

6. *Short- and longer-term health-care resource utilization and costs associated with acute ischemic stroke,* https://doi.org/10.2147/CEOR.S95662

7. Estimate formed by A. S. Freeman Advisors staff.

8. Flex Investor Day 2022 Virtual Investor and Analyst Day Presentation. *https://investors.flex.com/events-and-presentations/events/event-details/2022/Flex-2022-Virtual-Investor--Analyst-Day/default.aspx*

Special thanks to C. Eicher, A. Yan, and J. Garcia/R. Hunter for assistance with this presentation.

For More Information

Please contact:

Tony Freeman
tfreeman@asfreeman.com
(917) 868-0772