Global Trends in MedTech 2022

Fundamental Product Change on the Horizon

MPO Webinar Series
March 1, 2022

Overview of the Three-Day Event

Tuesday, March 1
The OEM Landscape: Fundamental Product Change on the Horizon

Wednesday, March 2
Dethroning Current Kings: OEM Product Trends Will Reshape the Supply Chain

Thursday, March 3
MedTech's Global Trends **Panel Discussion**

Perspective: Looking Out 3 to 10 Years

- Focus on the "seismic trends" driving the industry

- Three- to ten-year horizon

- Source material: OEM presentations to analysts and investors
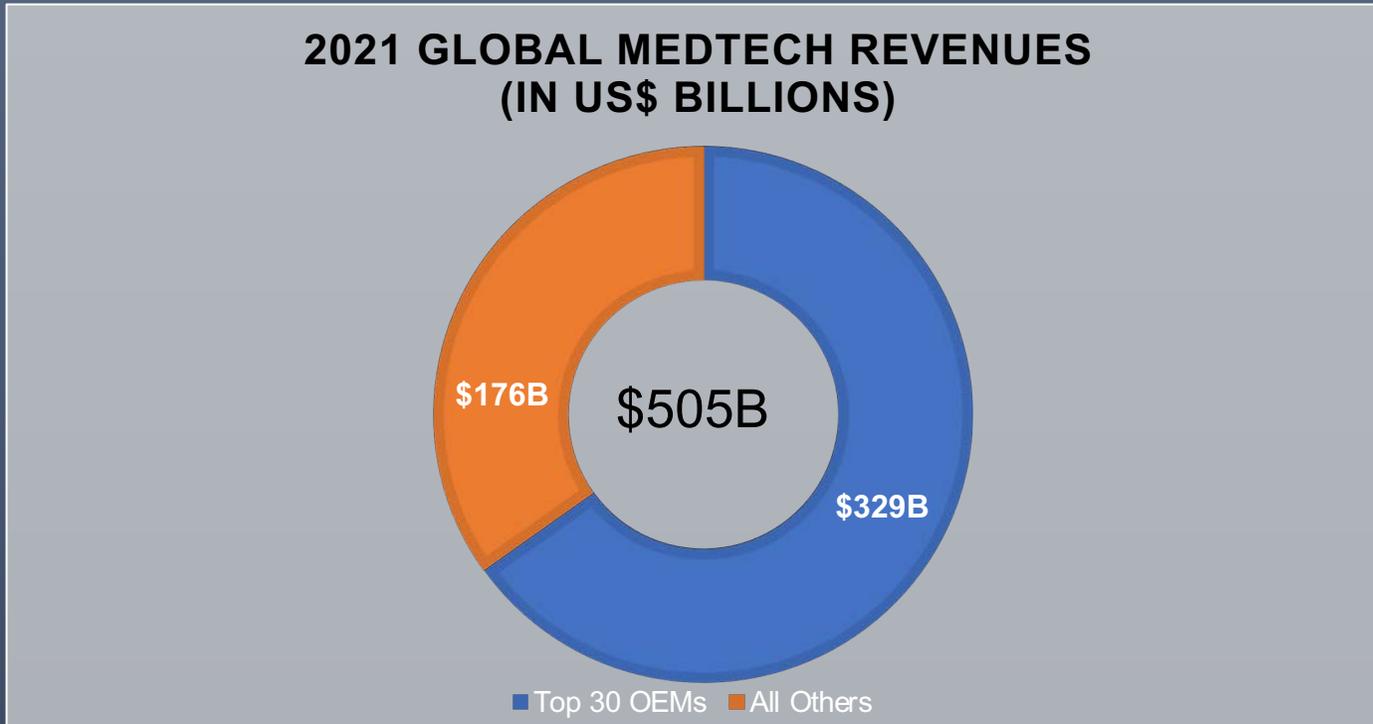
About A.S. Freeman Advisors

- Merger and acquisition advisory services

- Corporate strategy in support of transactions

- Focus on precision manufacturing and specialty materials markets

- Publishes *Global Trends: Medical Device and Diagnostic OEM Strategy and Implications for the Supply Chain*
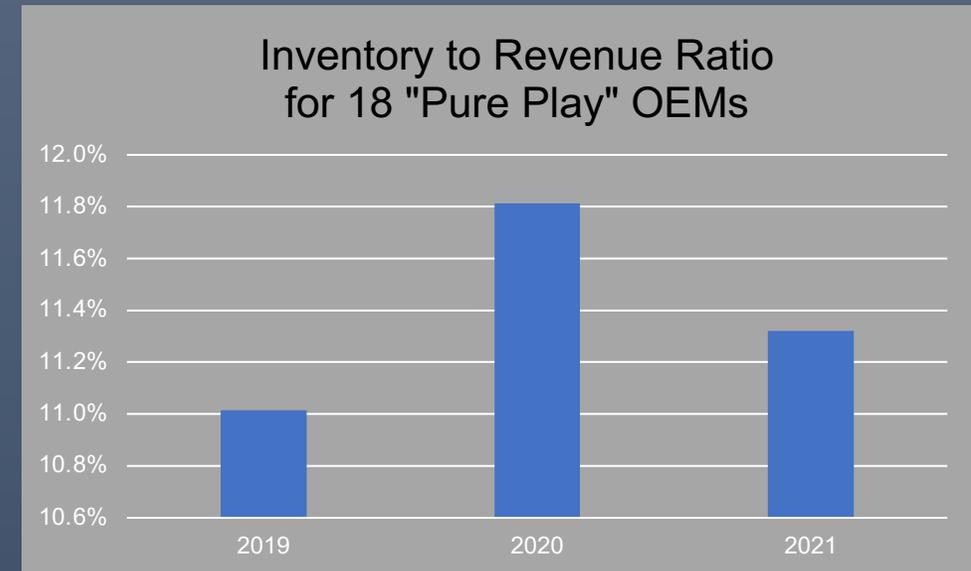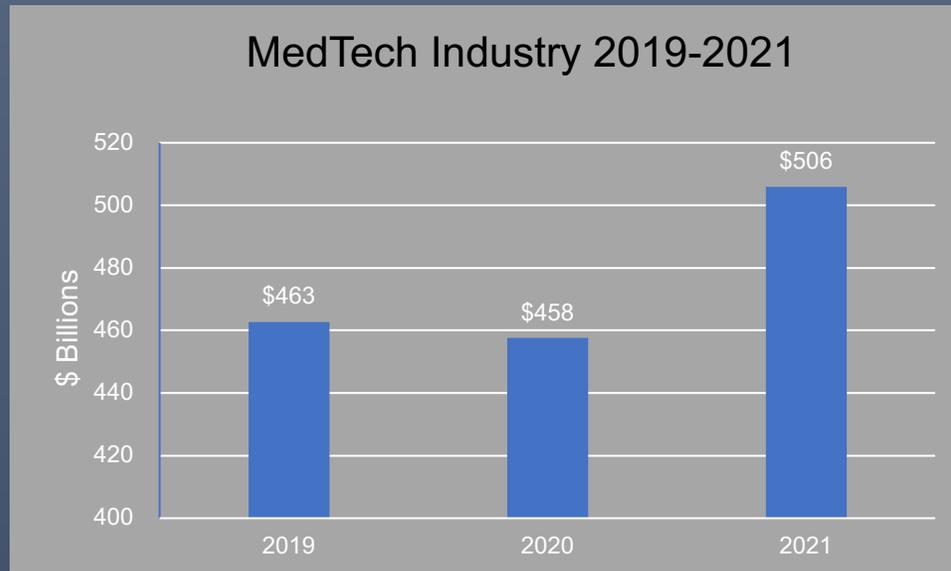
**Tony Freeman
President**

A.S. Freeman
ADVISORS, LLC

How Large is the MedTech Industry?

**2021 GLOBAL MEDTECH REVENUES
(IN US$ BILLIONS)**

$176B

$505B

$329B

■ Top 30 OEMs ■ All Others

- $505 billion in 2021 vs. $457 billion in 2020
- 4-6% growth rate projected for 2022

How Did COVID Impact the Industry?

MedTech Industry 2019-2021

(Bar chart, $ Billions)
- 2019: $463
- 2020: $458
- 2021: $506

Inventory to Revenue Ratio for 18 "Pure Play" OEMs

(Bar chart, percentages)
- 2019: ~11.0%
- 2020: ~11.8%
- 2021: ~11.35%

- **COVID revenue drop in 2020; likely would have risen ~5% without the pandemic**

- **Inventory-to-revenue ratio:**
  - Lasting disruption through 2021
  - Seems like a small inventory hike, but actually represented at least $5 to $14 billion in "inventory overage" in 2020
    - Cause for order pushouts
  - Inventory build likely peaked higher in mid-year 2020

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

  - Increased focus on the treatment of chronic diseases (often "diseases of affluence")

  - Emphasizing wellness – Monitoring health for longer, more active life

- **Drags**

  - Max reimbursement approaching in US, Europe, Japan

Two Messages from OEM CEOs Through 2021

- **2021 was a recovery year**

    - Sales and operations approaching a return to normal

    - Pre-pandemic: focus on business "rationalization" following growth run

    - Post-pandemic: few such initiatives mentioned, with <u>one major exception</u>

- **Fundamental reshaping of product lines and revenue models**

    - MedTech industry has discovered the "digital ecosystem"

    - Geoff Martha of Medtronic – *"Putting the tech in MedTech"*

What Is a Digital Ecosystem?

- **A progression from *Devices* to *Digital Devices* to the *Digital Ecosystem***
  - Digitally capable devices, from thermometers to smartphones to surgical robots
  - Linked via data network
  - Share central services
  - Storage of records
  - Databases of results
  - AI for treatment options
  - Enhanced communications modes for people and systems in care chain
  - Workflow management
  - Ties into business systems (scheduling, reimbursement, billing)

- **A blend of devices and services**

Which OEMs Have Committed?

21 of the top 30 OEMs currently offer or have announced digital ecosystems

Three Examples of Digital Ecosystems

Edwards Lifesciences
Smart Recovery Initiative

**Stryker/Vocera**

Baxter/Hillrom

Edwards Lifesciences Smart Recovery Initiative

- **What Happened?**

  - On June 1, 2021, ELS announced a non-invasive pressure cuff for its Smart Recovery Initiative suite
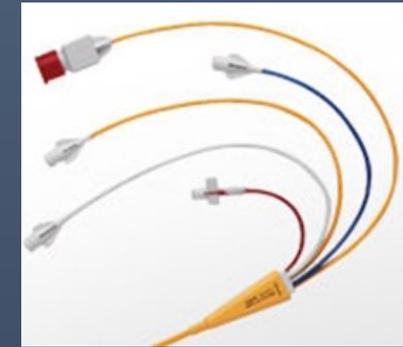
- **What Is It?**

  - Ecosystem of devices, monitors, and predictive software for monitoring hypotension, a pre-heart attack warning sign in surgical recovery patients

  - Machine learning for continuous improvement
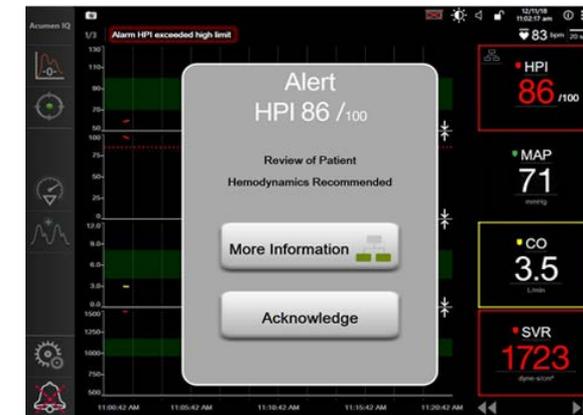
Edwards Lifesciences Smart Recovery Initiative

- **Why Does It Matter? It Is Succeeding.**

  - Originally announced in 2017

  - Successful rollout to market

  - ~7% growth in 2021

- Three takeaways

  - An example of market acceptance of a digital ecosystem

  - Most of the value is in the electronic modules/add-ons and predictive software, not the hardware

  - Establishes a technology moat, allowing ELS to stave off competition

Stryker/Vocera

- **What Happened?**
  - On January 6, 2022, Stryker announced it would acquire Vocera Communications for $3 billion

- **What Is It?**
  - Vocera develops digital products that link nurses, doctors, and other hospital staff into one rules-based communications system on the hospital floor. No more phone/pager/SMS/loudspeaker/shouting approach to collaborative healthcare.
  - A workflow and communications technology package aimed at hospital floors
  - Staff members use a Vocera device for all communications with care team and to receive alerts/data from monitoring devices
  - Goals:
    - End information overload and increase staff control over floor operations
   - Bring order and productivity to an often-chaotic environment

Stryker/Vocera

- **Why Does It Matter?**

  - Vocera is not a medical device in the traditional sense. Stryker is moving into hospital workflow automation.

  - Once installed, no room for non-Stryker communication/data systems

  - Stryker has the opportunity to link Stryker devices and databases to the Vocera platform

- **Takeaways**

  - An instant digital ecosystem

  - Gives Stryker first chance to sell new digital devices that link to this platform

  - Stryker expands its reach, not Cisco, HP, or Juniper

  - Stryker buying technology to dominate and expand
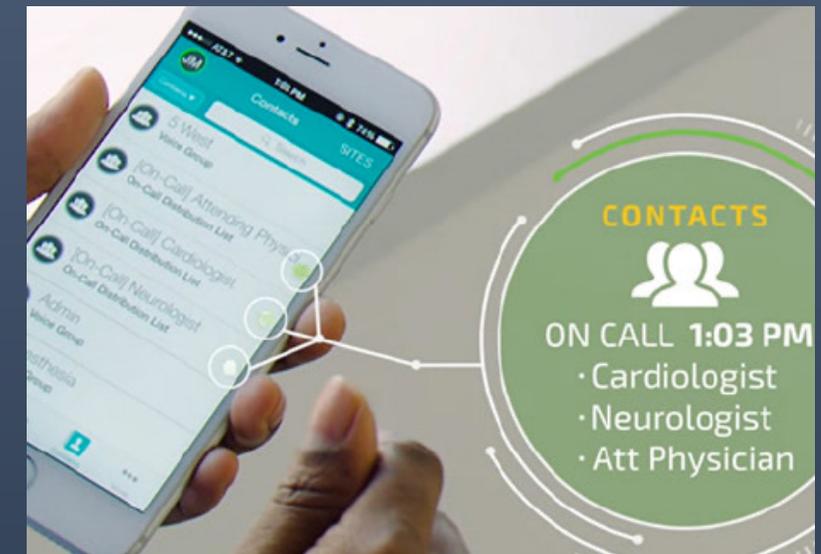
Baxter/Hillrom

- **What Happened?**

  - On September 2, 2021, Baxter announced it would buy Hillrom for $12.4 billion

  - Baxter was 9th on MPO Top 30 with sales of ~$17B

  - Hillrom was 30th with sales of ~$2.9B

- **What Is It?**

  - Hillrom's strategy is "Advanced Connected Care"

  - Transitioned from medical furniture and basic devices to electronically linking a large percentage of basic monitoring devices
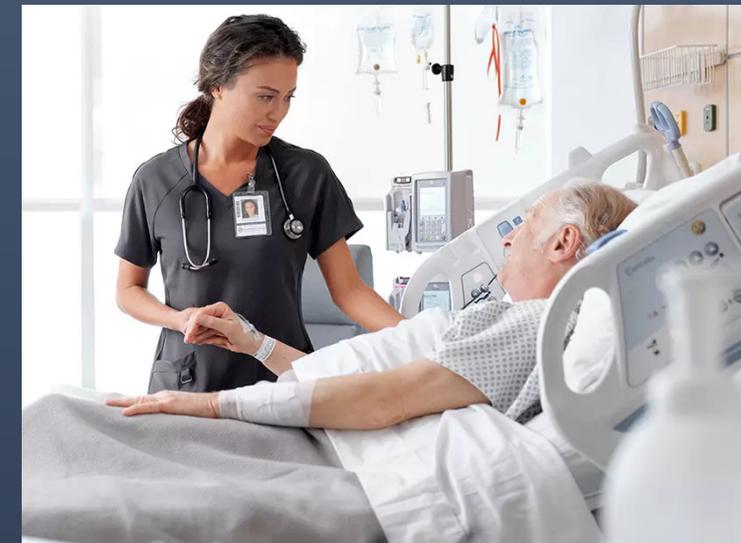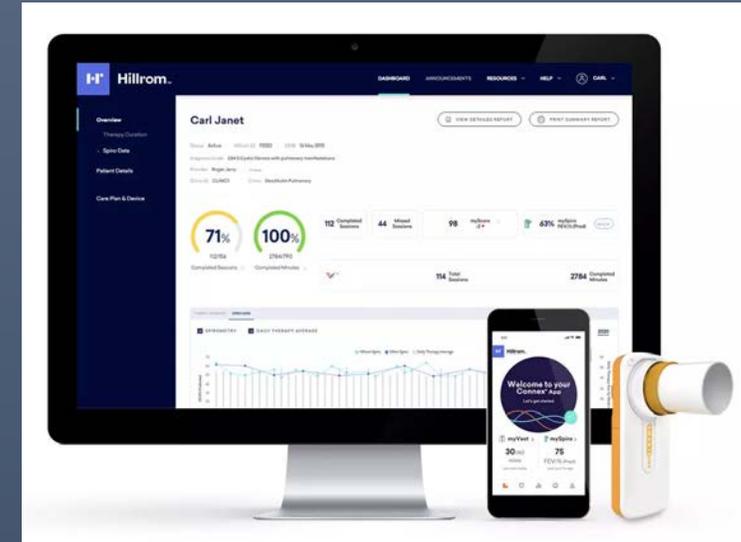
Baxter/Hillrom

- **Why Is It Important?**
  - Hillrom's digital and connected architecture
  - Even the hospital beds are electronic
    - Monitor patient activity, vitals, fall

- Takeaways
  - Affords Baxter digital access to almost every room in a hospital
  - Forms the spine of a comprehensive digital ecosystem

How Are the OEMs Doing It? Acquisitions.

Date	Acquirer	Target	Application
January 2022	Stryker	Vocera Communications	Hospital communications and workflow management
December 2021	GE Healthcare	BK Medical	Surgical visualization from ultrasound data
September 2021	Baxter	Hillrom	Connected care devices and systems
August 2021	Hillrom	Bardy Diagnostics	Wearable cardiac monitoring sensors
January 2021	Stryker	OrthoSensor	Real-time post-surgery patient monitoring
January 2021	Boston Scientific	Preventice Solutions	Wearable cardiac monitoring sensors
January 2021	Philips	Capsule Technologies	Medical information data management
December 2020	Philips	BioTelemetry	Remote monitoring
December 2019	Medtronic	Klue	Patient motion tracking related to diabetes treatments
July 2019	Philips	Medumo	Patient tracking, triaging, and scheduling
March 2019	Zoll Medical	Golden Hour	EMS patient recording and charting
January 2019	Zoll Medical	Payor Logic	Patient data, reimbursement, billing system links

What Does This Mean for the MedTech Industry?

- Change in revenue mix

- New products

- New care settings

- New supply chain

Change in Revenue Mix

- Digitalization allows OEMs to charge for services as well as products

    - New-ish model for many device OEMs

    - Recurring revenue streams – extremely valuable

- Watch for the rise of "product/service" packages

- This trend will influence which devices are built and which are not

Philips Lumify

- Ultrasound transducer

- Plugs into <u>any</u> USB-capable display

- Can be used in any setting

- Records results and patient data in HIPAA-compliant format

- Subscription fee of $199/month

ResMed MatrixCare

- Suite of cloud-based software applications for real-time EHR updates

- Gathers data from multiple devices and systems

- Extends to workflow, operations management, and business systems offered by ResMed

- SaaS model only
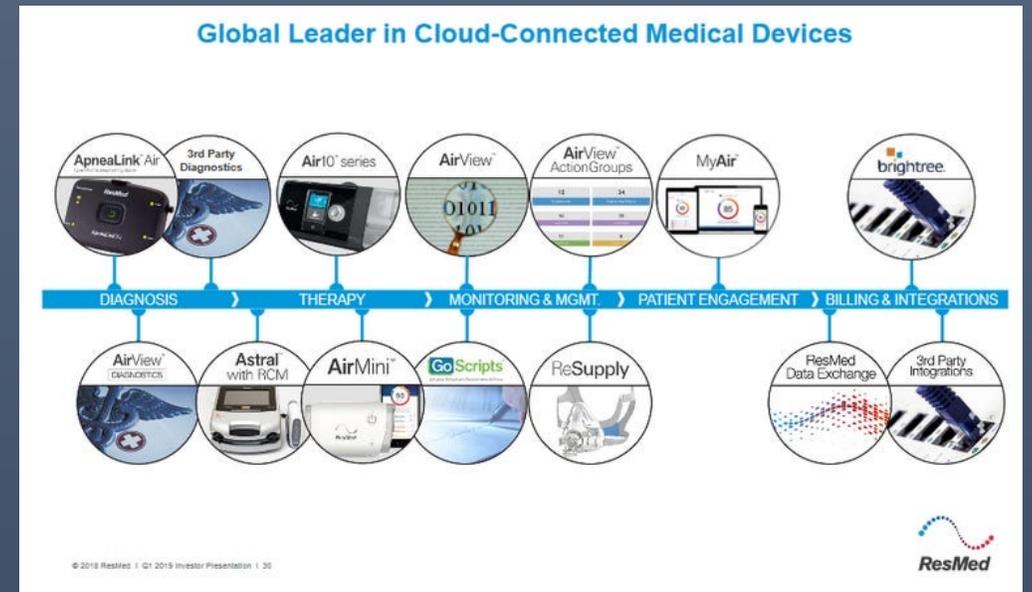
New Products

- New revenue sources drive the launch of new products

- Value derives from the marriage of physical and digital

- Example: Intuitive Surgical da Vinci

  - MIS robotic surgical system

  - Is the value:

    - The robot?

    - The software?

    - The data?
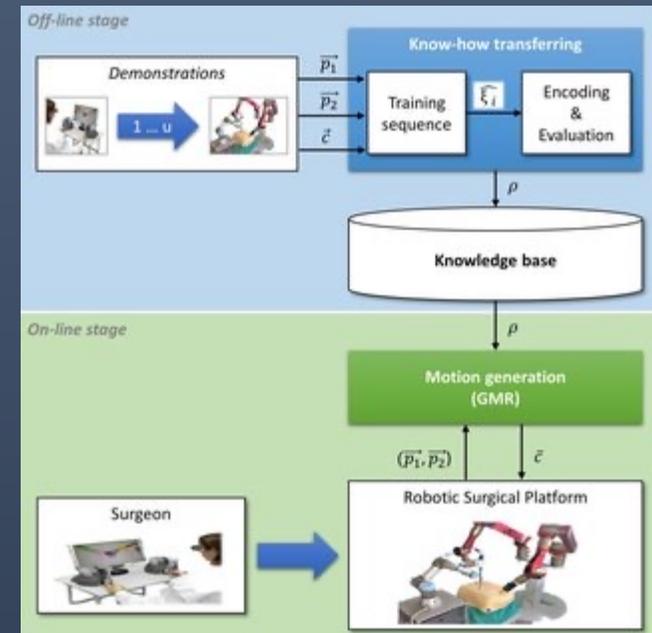
New Settings

- **Digitalization places devices in new locations**
  - Digital devices can communicate from anywhere
  - Data can be shared between patient, care team, treatment management systems

- **More devices will be placed not only where people recover, but – more importantly – where they get sick**
  - Urgent care clinics
  - Pharmacies
  - Home and workplace

- **Economic impact of remote monitoring is profound**
  - Reimburser acceptance of cost-saving devices will push development
  - Incentive to develop many more devices for less-expensive, non-traditional settings

- **Who wins? Medical device OEMs or consumer electronics companies?**
  - OEMs have deeper expertise in the technology of medicine
  - Consumer electronics companies
    - Develop easy-to-use products at affordable prices
    - Have mass marketing and distribution expertise
    - Already have a foothold in most homes and offices
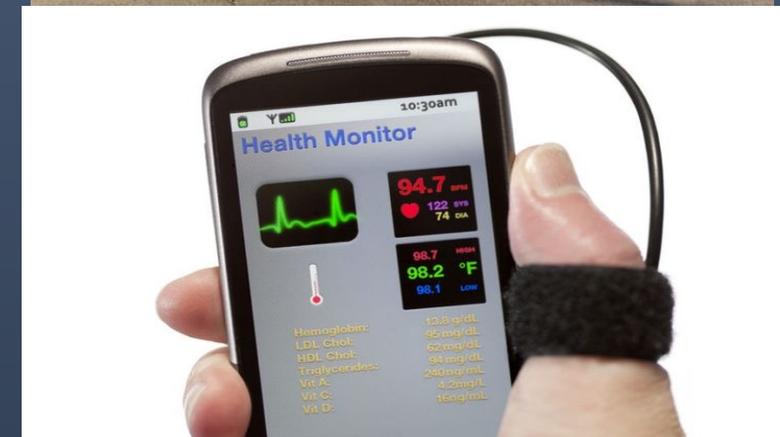
Abbott Freestyle Libre

- Continuous glucose monitoring (CGM) device
  - Sensor
  - Display
  - Tracking software
  - Can communicate with care team
- CGM used to only be available in hospitals
- In addition to daily glucose management, tracks medically significant conditions as they develop
- Moves tracking from the emergency room to patients' homes
  - Avoids medical emergencies
  - Profound cost savings over acute care
- Abbott vs. Apple/Android?
- The bigger picture: Are OEMs moving beyond acute/chronic care into wellness?
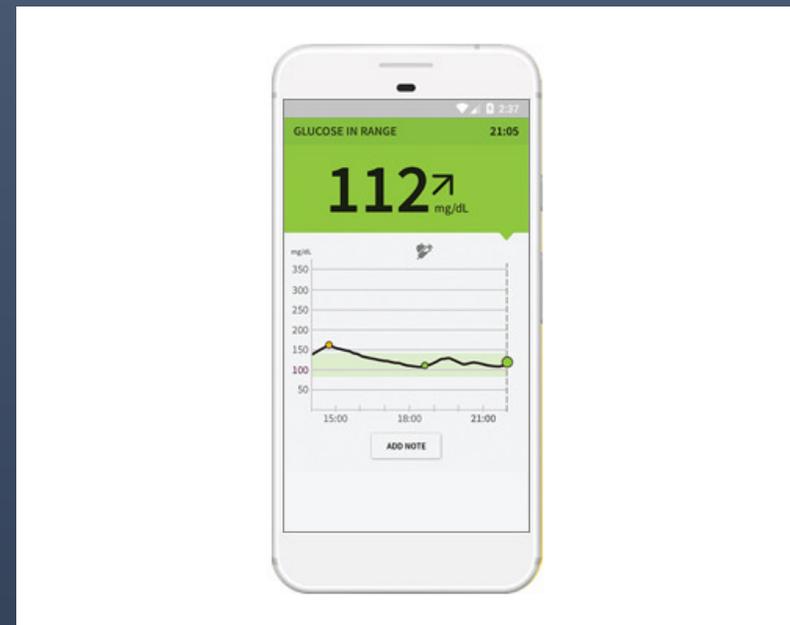
New Supply Chain

- Who will design and build these new products?

- Much of the current supply base does not manufacture components or assemblies for digital devices

- New suppliers will enter the supply chain

  - Will bring their own capabilities to supply both digital and tangible components, assemblies, and complete devices

- More on this topic tomorrow

Major Competitive Wars Brewing – Two Models

OEM Dominance

Interoperability
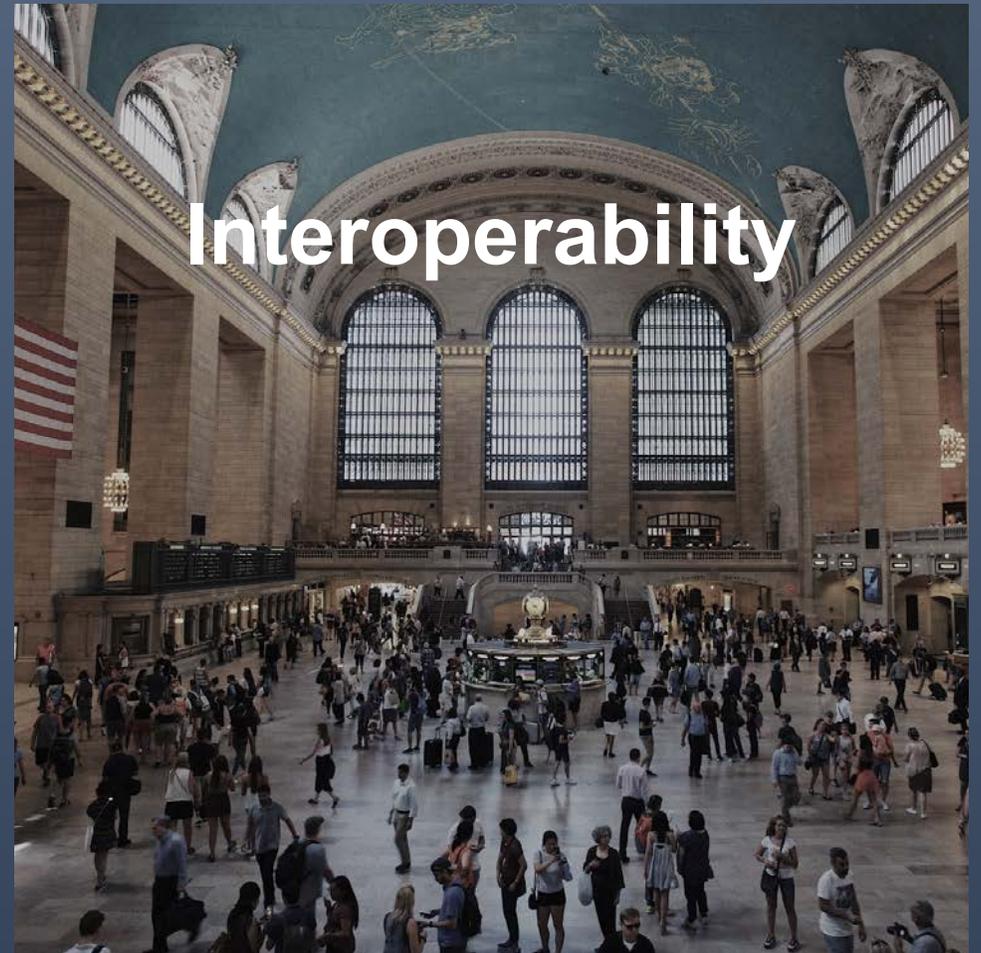
OEM Dominance

- All nodes in the ecosystem come from a single vendor

- Near-total dominance of a department or hospital floor

- Similar to the IBM model of the 20th century:

    - Holistic

    - Expensive

- Aligns with the current "slow" pace of medtech development

- Strong financial incentive for OEMs capable of market dominance

- Possibility of disruption by "also-ran" OEMs

Interoperability

- No interoperability standards currently exist

- Requires common cross-vendor protocols for communication, data-sharing

- Intel USB model of the 21st century

- Messier from a business perspective; better suited to fast movers

- Creates massive systems- and data-integration opportunities

About Tomorrow's Session – The Supply Chain

- Size and growth rate of the medtech supply chain

- The continued rise of international contract manufacturers

- Changing role of the traditional suppliers

- New entrants in the supply chain

For More Information

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