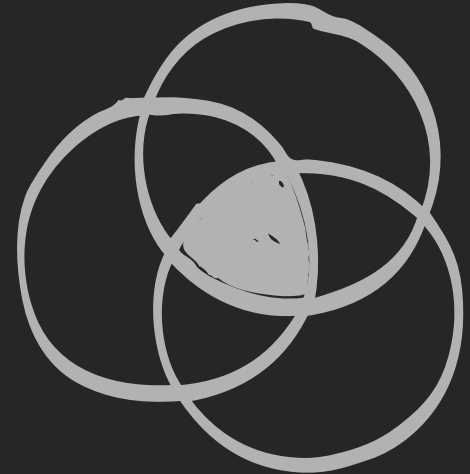


IONIA

It Might Get Loud

Continuity, privacy, and data management in the age of #voicefirst and messaging

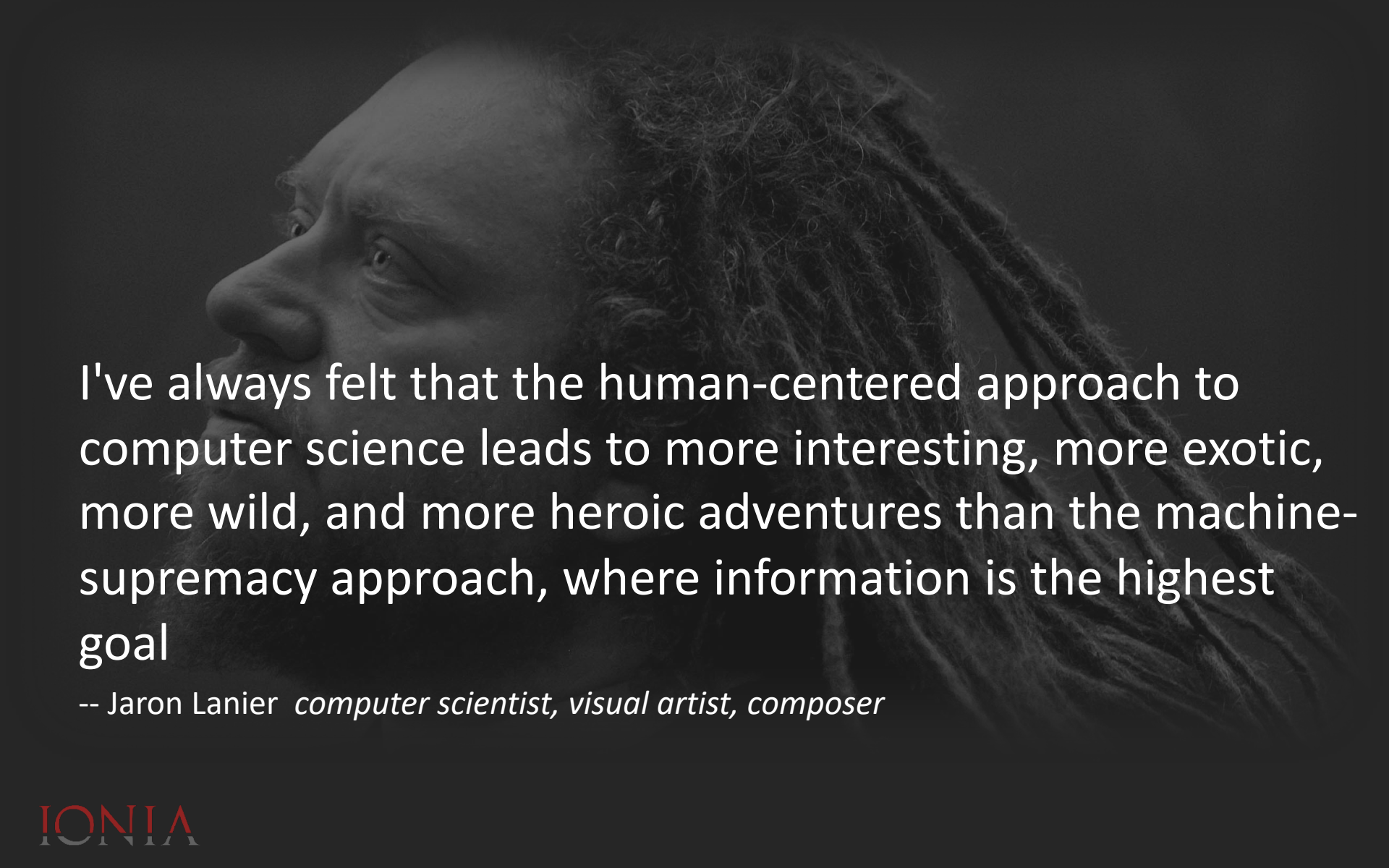
Matt PM Cybulsky PhD
IONIA Healthcare Consulting



Voice and voice activation does represent one of the most important developments in the last 20 years. It is potentially as important as the development of the web itself because it makes accessing the underlying technology even easier for everyone to do.

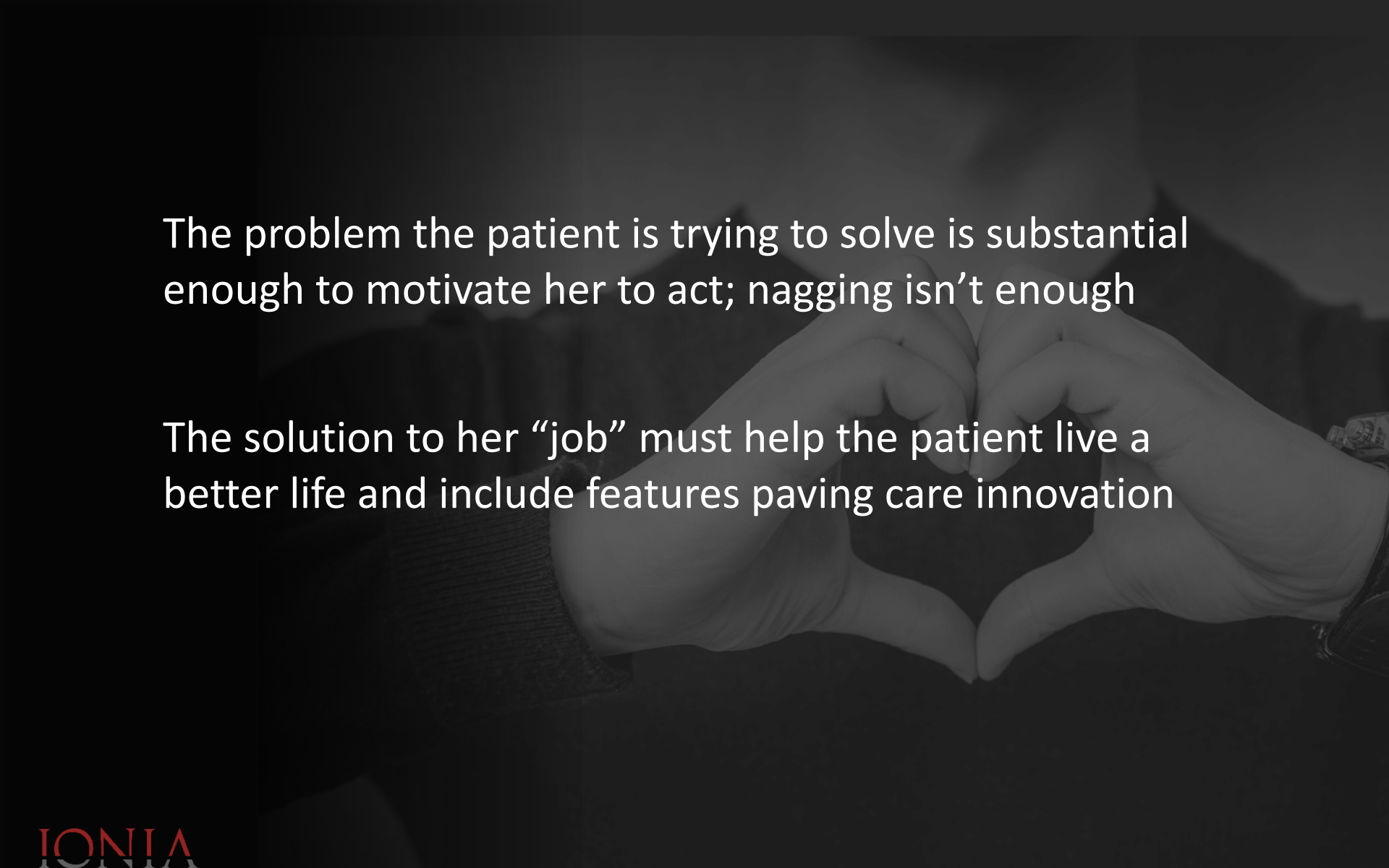
- Cory Treffiletti MediaInsider, Chief Marketing Officer of Voicea

5 Mins



I've always felt that the human-centered approach to computer science leads to more interesting, more exotic, more wild, and more heroic adventures than the machine-supremacy approach, where information is the highest goal

-- Jaron Lanier *computer scientist, visual artist, composer*



The problem the patient is trying to solve is substantial enough to motivate her to act; nagging isn't enough

The solution to her “job” must help the patient live a better life and include features paving care innovation



Finding Tempo

10 Mins

Emergence, Adoption, History

20 years, 5 waves of digital disruption

Web

Make it
virtual.

Search

Make it
discoverable.

Social

Make it
shareable.

Mobile

Make it
responsive.

Voice

Make it
conversational.

1994

A large extra cheese, pepperoni, and mushroom pizza from Pizza Hut is the first thing ordered online.

[ENTREPRENEUR](#)

2002

Google Toolbar allows people to search in a browser without visiting the Google homepage; SEO efforts begin in earnest.

[MOZ](#)

2006

Facebook goes beyond colleges: the platform opens to any user over 13 years old with a valid email address.

[ENTREPRENEUR](#)

2010

The iPad is announced. Apple sells 3 million in the first 80 days; 15 million are sold by the release of the iPad 2, one year later.

[CNET](#)

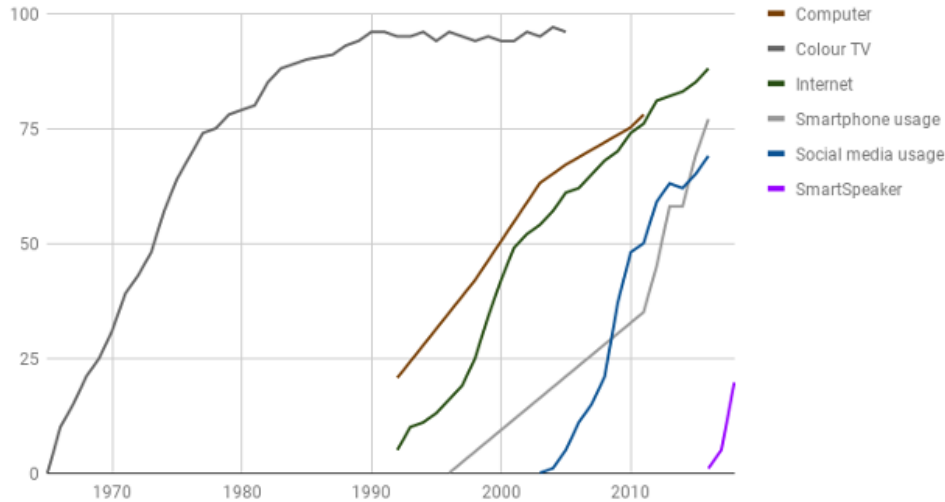
2016

During the 2016 holiday season, sales of Amazon Echo devices grow 900% over the previous year.

[GEEKWIRE](#)

Fastest Tech Adoption in US History

Technology Adoption by Household in the United States



US Smart Speaker Total Audience Reach May 2018



Smart Speakers are indexes for #VoiceFirst

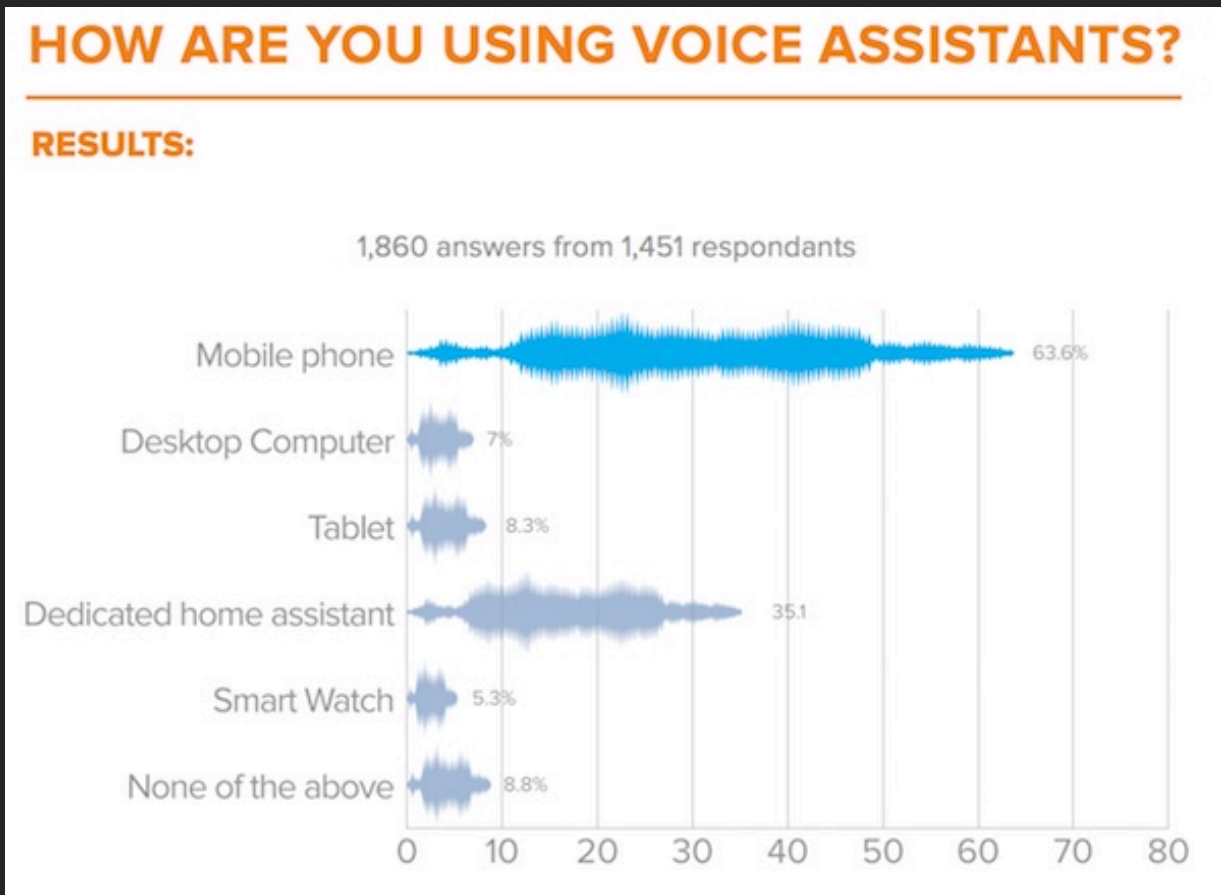
Smart Home Devices by Category, 2018 and 2022 (Value in US\$ billion)

Product Category	2018 Value (US\$ billion)*	2022 Value (US\$ billion)*	2018-2022 CAGR*
Home Monitoring/Security	\$7.5	\$16.5	21.7%
Lighting	\$1.8	\$4.6	27.0%
Others	\$25.4	\$48.2	17.4%
Smart Speaker	\$11.8	\$27.8	23.7%
Thermostat	\$2.9	\$8.3	30.1%
Video Entertainment	\$157.4	\$192.1	5.1%
TOTAL	\$206.8	\$297.5	9.5%

Source: IDC Worldwide Quarterly Smart Home Device Tracker, June 2018

* **Note:** Forecast Values

Speakers as gateway drugs...the future is mobile



Voice Platforms



orbita

SoundHound

Secure text messaging table, features, use cases

**Table and Features Graphic



Finding Rhythm

10 Mins

Care Delivery, Privacy, Data Management

THE DOCTOR

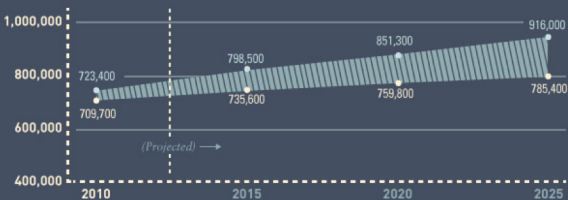


Why Is There a Shortage of Primary-Care Physicians in the U.S.?

Primary-care physicians—those who cover comprehensive health needs and provide continuing care for their patients—were once the foundation of a high-value American health care system. But now there is a looming deficit of the very professionals who health care reform depends on. Why may primary-care doctors soon become an endangered breed?

SUPPLY, DEMAND, AND THE FUTURE DECLINE OF PRIMARY CARE DOCTORS

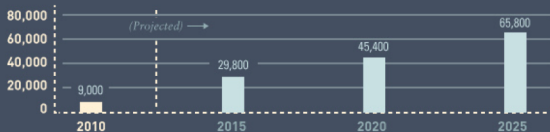
The Association of American Medical Colleges projects that by 2015, the country will be close to 63,000 doctors short of the demand necessary to provide valuable medical care for its population. By 2025, that number could more than double.



*OF ALL SPECIALTIES

Although physicians of all specialties will be needed, primary-care physicians—including family doctors, general practitioners, and pediatricians—will be seeing a considerable shortage in the coming years.

GROWING DEFICIT OF PRIMARY CARE PHYSICIANS



WHAT'S UP, DOC?

Waning Interest in the Career

Only 32 percent of physicians in the U.S. are primary-care providers. The rest are specialists in careers like radiology, cardiology, and dermatology.

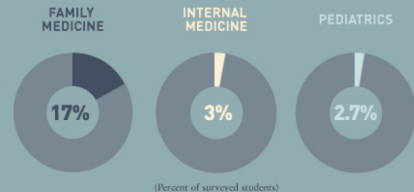
68%
SPECIALISTS

32%
PRIMARY CARE



Recent surveys of **GRADUATING MEDICAL SCHOOL SENIORS** SHOW THAT **ONLY A SMALL FRACTION WANT TO GO TO GO INTO PRIMARY-CARE MEDICINE.**

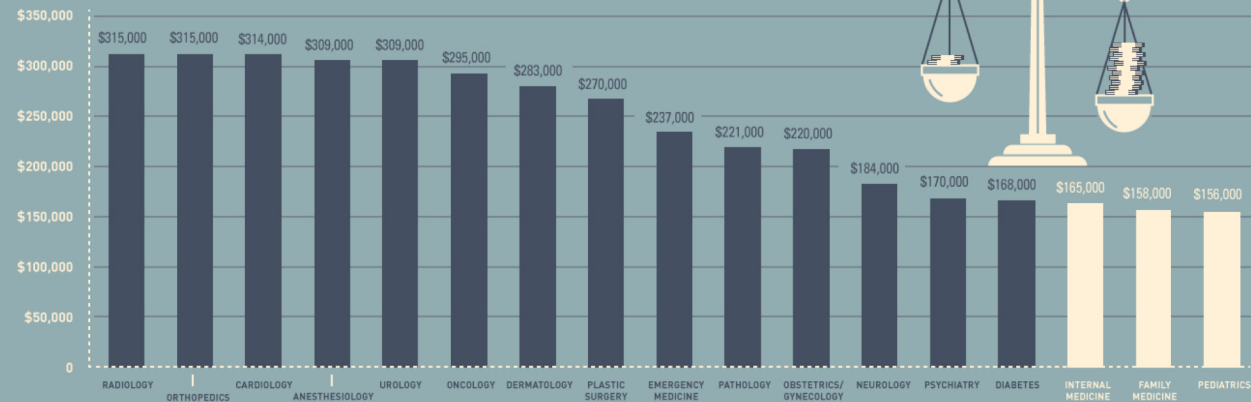
TYPE OF PRIMARY-CARE DISCIPLINE THEY WANT TO PURSUE A CAREER IN



Income Disparity

A Medscape report found that 54 percent of primary-care physicians don't feel fairly compensated and are, on average, paid less than those that specialize. As a result, less choose primary care as a career.

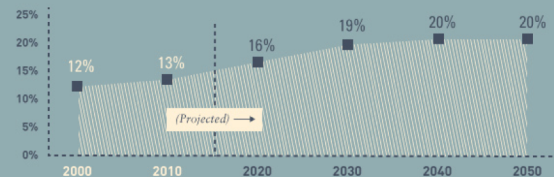
AVERAGE SALARY (2011)



Looming Baby Boomer Wave

The percent of people in the U.S. over age 65 is expected to nearly double between 2000 and 2050. As they age, this senior population is more likely to develop multiple chronic conditions and will have to be cared for by primary-care physicians who specialize in long-term health management.

PERCENT OF THE U.S. POPULATION WHO ARE 65+



Retirees



E
CNP
KIRWD

ALMOST 25% OF PRIMARY-CARE DOCTORS ARE 56 OR OLDER.

AND IT'S LIKELY THAT MANY OF THESE PHYSICIANS WILL RETIRE WITHIN THE NEXT DECADE.

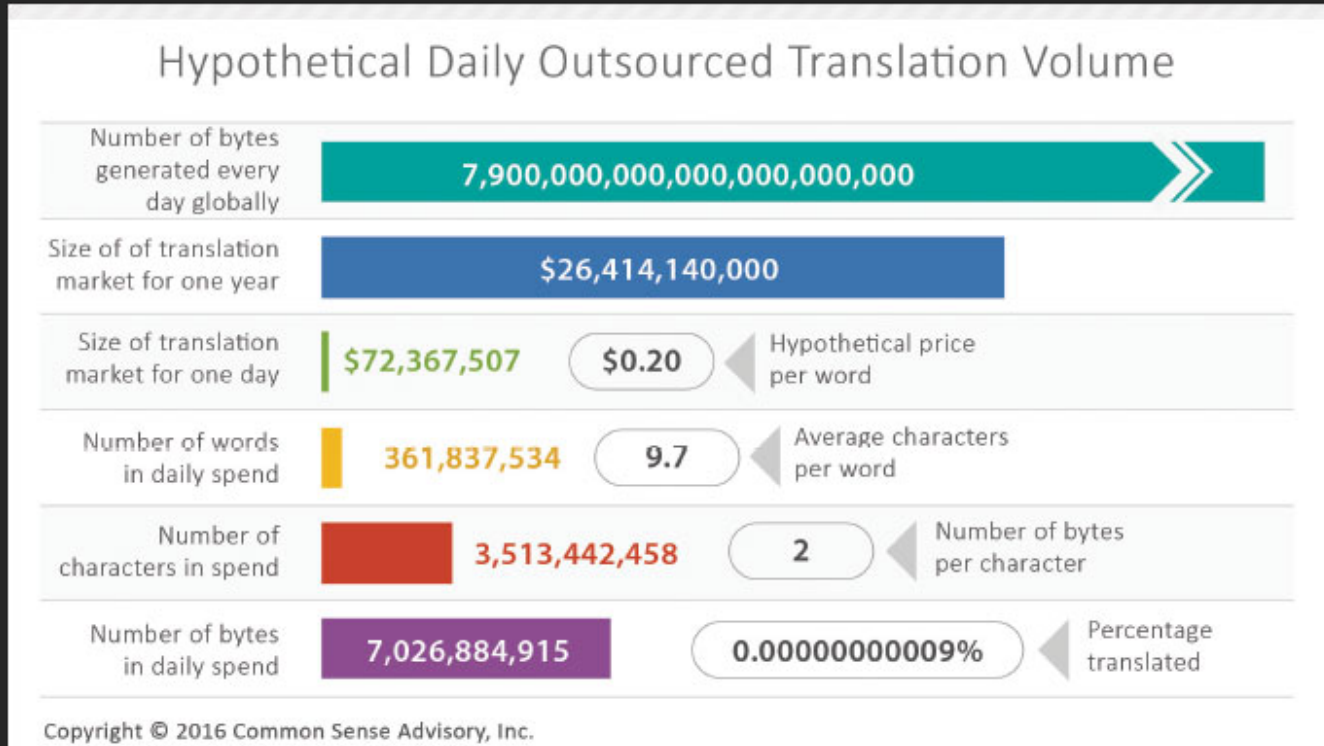
Continuity and Engagement: *Blockbuster Drugs*

**A digital reality has arrived... details

Privacy is THE modern differentiator



Data Possibilities are Incomprehensible



This incomprehensible increase necessitates real investment in #voicefirst, AI, and ML platforms

AI and ML become necessary to hear clearly...

The capability to utilize data at incomprehensible rates

****AI and ML Tools, Features, and Companies**

It's starting to get louder...

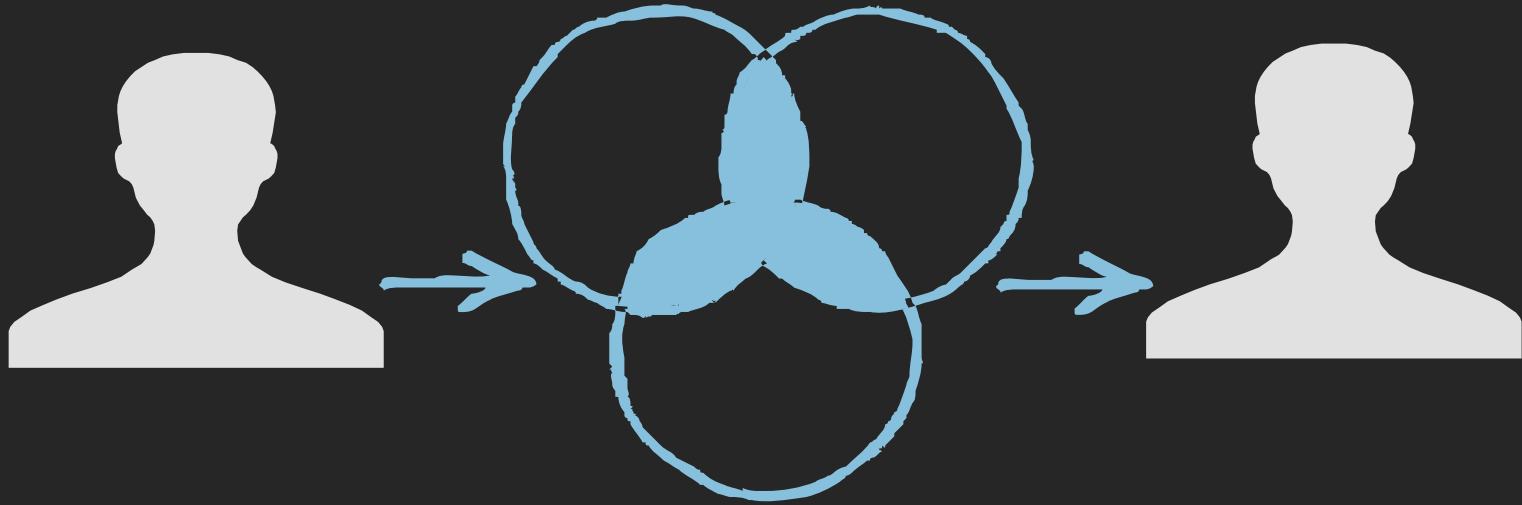


15 Mins

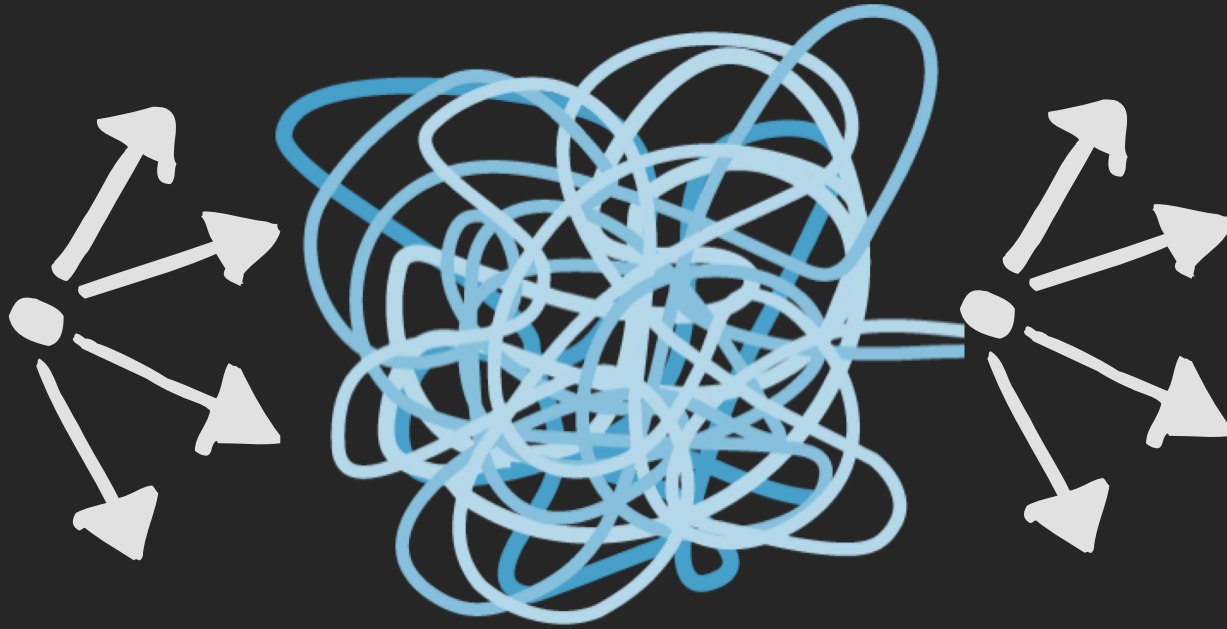
Finding Harmony

Applications, Promises, and Challenges

EMR as Workflow Engine



EMR as Data Exchange Engine



Third Party Tools Sound Better and Dominate

**Discuss 3rd party tools interacting with the EMR as data exchange engine, including #voicefirst and secure messaging



The Ideal Volume (2 graphics of synthesis)

Pre admit > Admit > Care Delivery > Discharge > Follow Up > Self Care Maintenance

***Collection of real-time, precise, patient data*

Secure Messaging > VoiceFirst Tools > AI/ML Tools + Data > Feedback and Actions

***Promises and Challenges*

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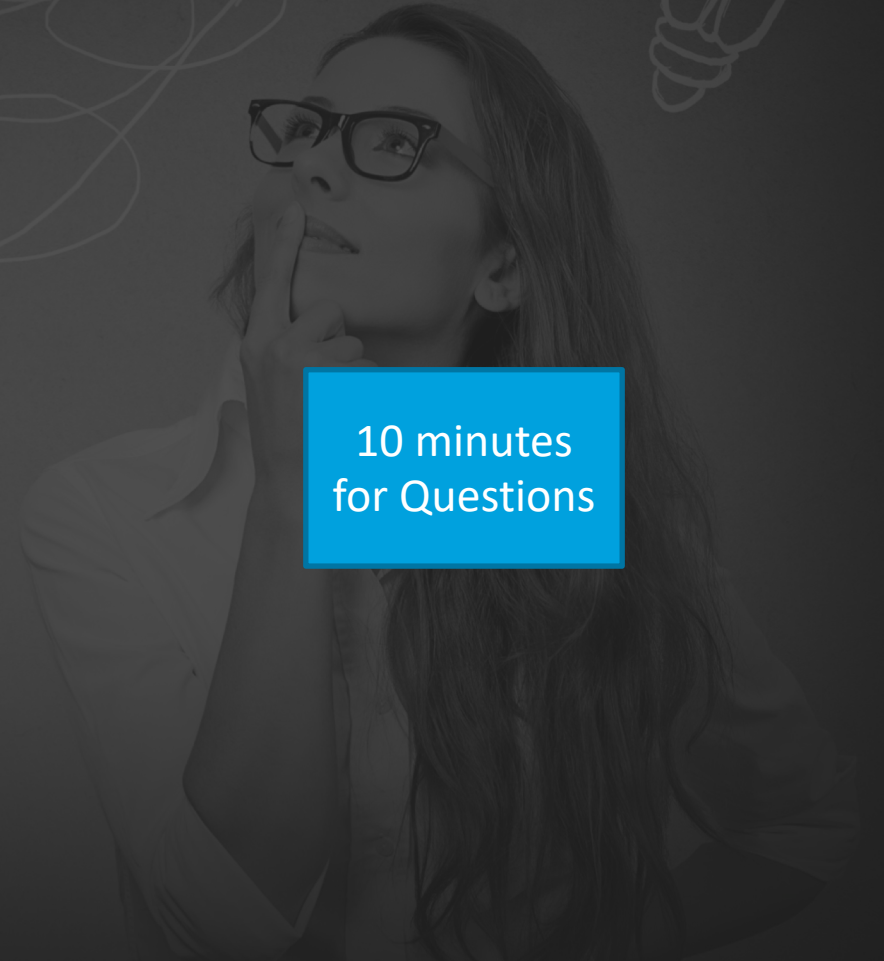
Matt Cybulsky PhD

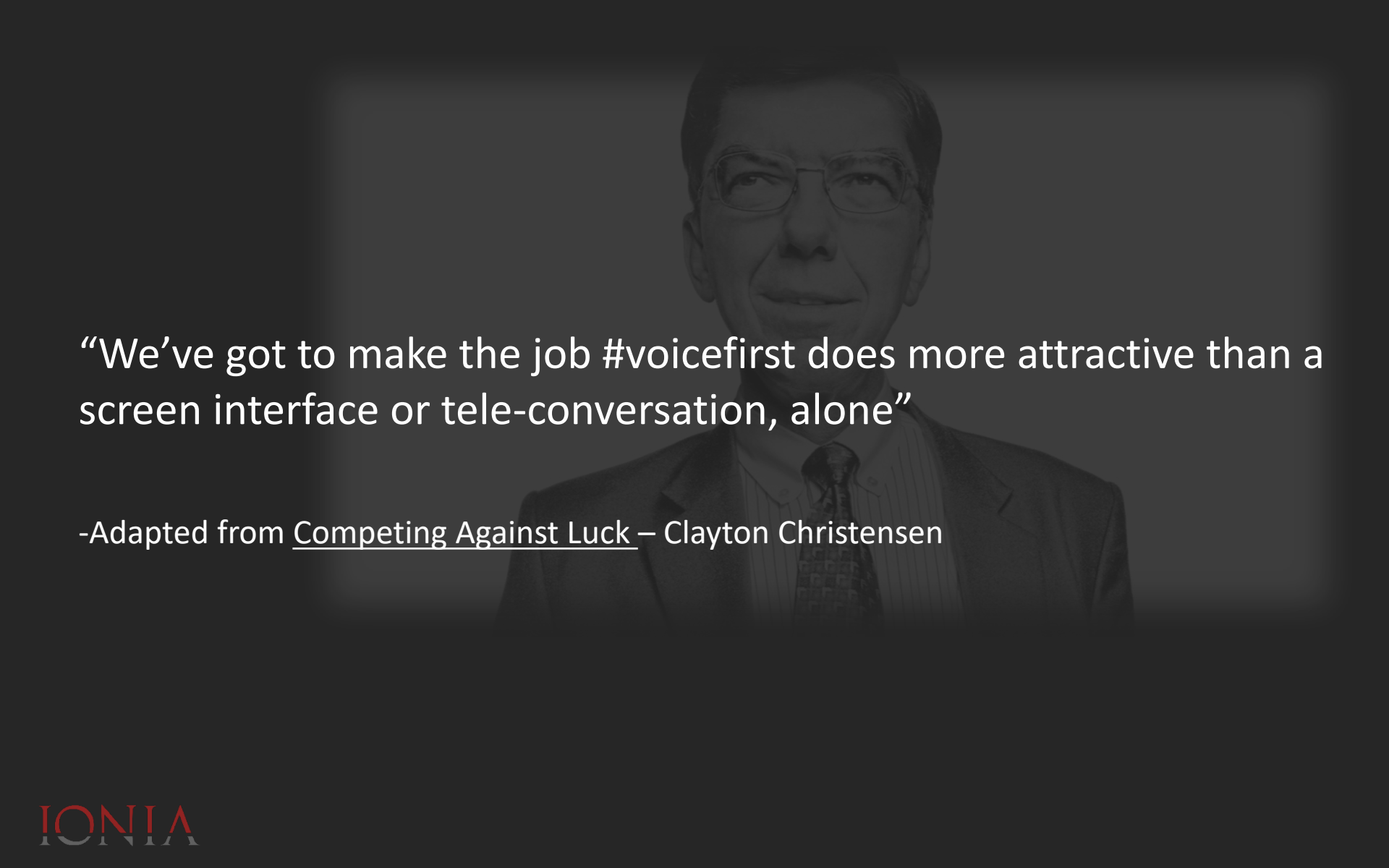
matt@ionia.co

@Cybulsky

IONIA.CO

10 minutes
for Questions





“We’ve got to make the job #voicefirst does more attractive than a screen interface or tele-conversation, alone”

-Adapted from Competing Against Luck – Clayton Christensen