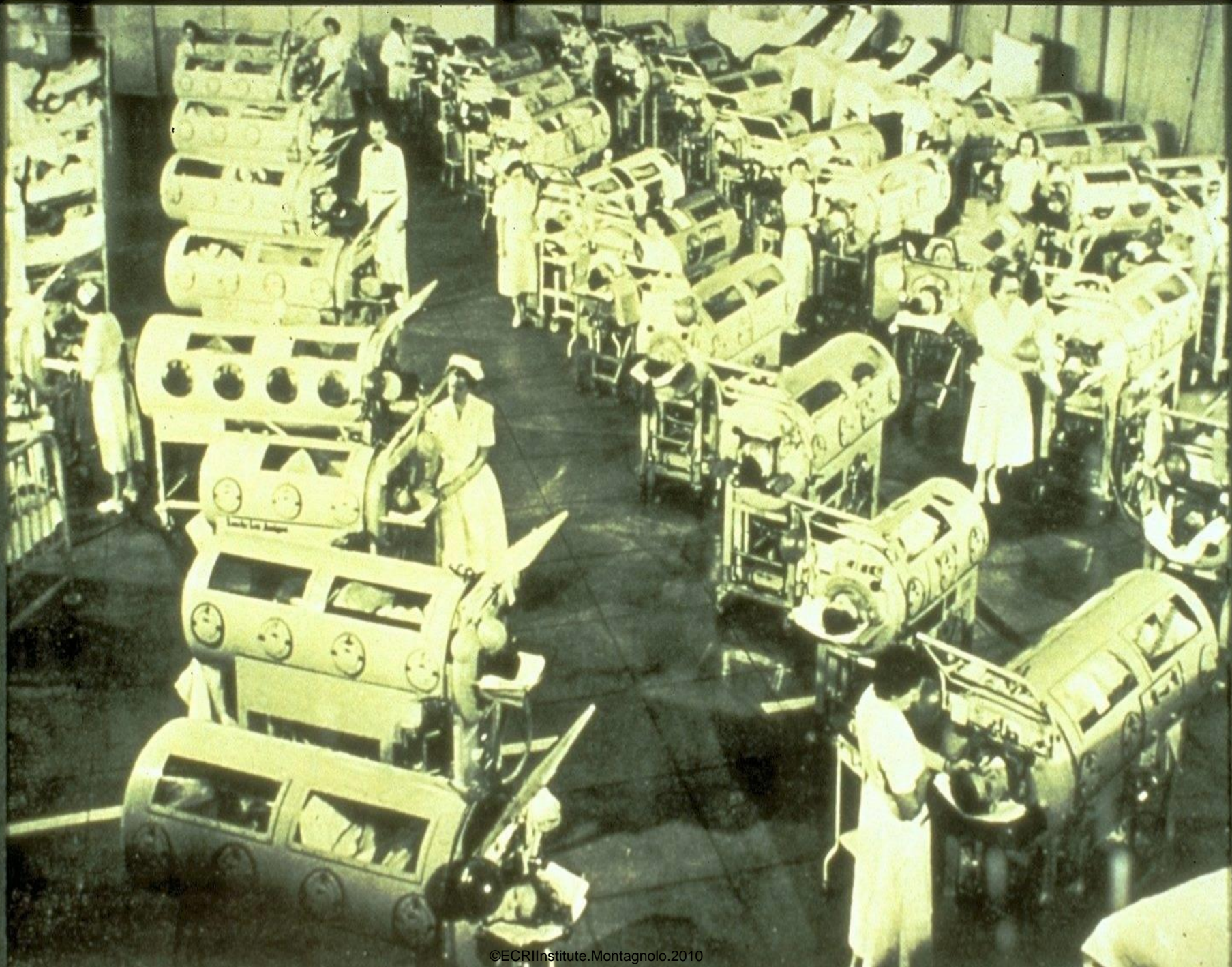


October 24, 2018

# **Emerging Technologies CAHPMM 45<sup>th</sup> Annual Conference October 2018**

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# Change Happens



# Outline

## ▶ Building a Bridge To The Future

- The Forecasting Chasm—Seeing around corners
- The Technology Chasm—Where is technology headed?

## ▶ Action Steps

- Strategies for success
- Tony's top three technology truths

# Ignore trends at your peril...

**Kodak once had 85% of photographic film business!**

**In the U.S. patients want robotic prostatectomies...**

## The First Digital Camera (1975)

BY SCOTT BEALE ON AUGUST 20, 2010



Kodak engineer Steve Sasson talks about how he created the first digital camera in December 1975.

# Foolish Tech Prediction 1

## Thomas Watson, President of IBM, 1943

- ▶ "I think there is a world market for maybe five computers."

Source PCWorld.com: Strohmeier, R. (December 31, 2008). The 7 Worst Predictions of All Time.  
Retrieved from [https://www.pcworld.com/article/155984/worst\\_tech\\_predictions.html?page=2](https://www.pcworld.com/article/155984/worst_tech_predictions.html?page=2)

## Foolish Tech Prediction 2

***Darryl Zanuck, Executive at 20th Century Fox,  
1946***

- ▶ "Television won't be able to hold on to any market it captures after the first six months. People will soon get tired of staring at a plywood box every night."

Source PCWorld.com: Strohmeyer, R. (December 31, 2008). The 7 Worst Predictions of All Time.  
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## **Foolish Tech Prediction 3**

***Alex Lewyt, President of Lewyt vacuum company, 1955***

- ▶ "Nuclear-powered vacuum cleaners will probably be a reality within ten years."

Source PCWorld.com: Strohmeier, R. (December 31, 2008). The 7 Worst Predictions of All Time.  
Retrieved from [https://www.pcworld.com/article/155984/worst\\_tech\\_predictions.html?page=2](https://www.pcworld.com/article/155984/worst_tech_predictions.html?page=2)



# **Foolish Tech Prediction 4**

***Ken Olsen, Founder of Digital Equipment Corporation, 1977***

- ▶ "There is no reason anyone would want a computer in their home."

Source PCWorld.com: Strohmeier, R. (December 31, 2008). The 7 Worst Predictions of All Time.  
Retrieved from [https://www.pcworld.com/article/155984/worst\\_tech\\_predictions.html?page=2](https://www.pcworld.com/article/155984/worst_tech_predictions.html?page=2)

# Foolish Tech Prediction 5

***Robert Metcalfe, Founder of 3Com, 1995***

- ▶ "Almost all of the many predictions now being made about 1996 hinge on the Internet's continuing exponential growth. But I predict the Internet will soon go spectacularly supernova and in 1996 catastrophically collapse."

Source PCWorld.com: Strohmeier, R. (December 31, 2008). The 7 Worst Predictions of All Time.  
Retrieved from [https://www.pcworld.com/article/155984/worst\\_tech\\_predictions.html?page=2](https://www.pcworld.com/article/155984/worst_tech_predictions.html?page=2)



**Which new  
technology will  
stick?**

**And actually  
make a  
difference?**

# And what are outcomes we expect from technology in healthcare?

- ▶ Longer life?
- ▶ Better life?
- ▶ Higher productivity?
- ▶ Healthier populations?
- ▶ Happier people?



# Where is technology headed?





# ECRI Institute Top 10 C-suite Watch List

## ► ECRI experts polled for topics regarding....

- Something newsworthy
- The potential to positively impact patient outcomes in major illnesses, diseases, or injuries
- Ready or near ready for implementation
- Turf wars or, conversely, improved collaboration
- Improving patient and staff safety
- A marketplace differentiator

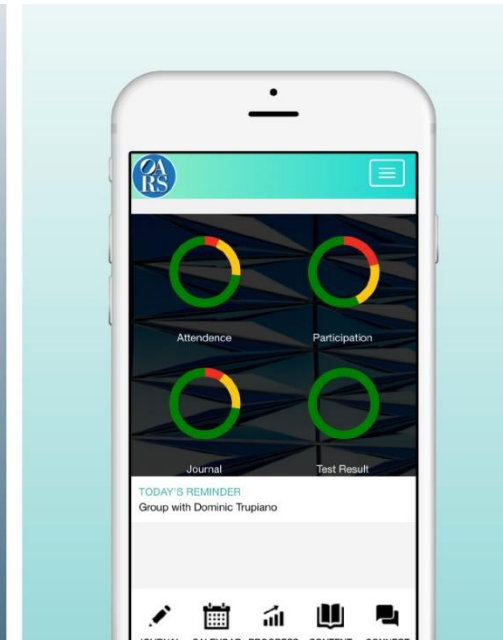
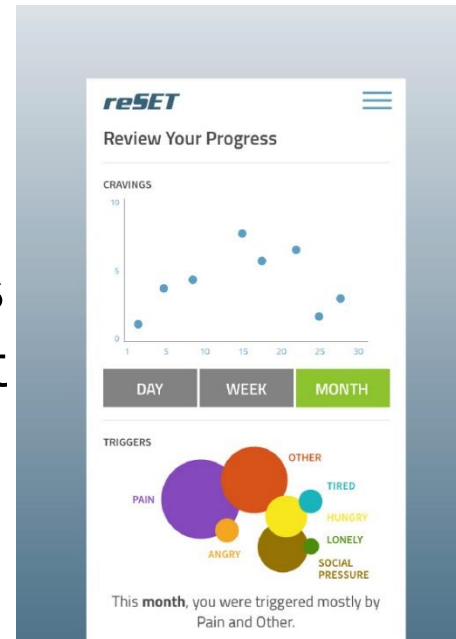


# 2018 Top 10 Hospital C-suite Watch List

1. Apps for Addiction
2. Direct to Consumer Genetic Testing
3. Acuity-adaptable Rooms
4. Insertable Cardiac Monitor
5. Virtual Reality for Pediatrics
6. Non-medication Treatments for Alzheimer's Disease
7. (Nearly) Pain-free Blood Draw
8. Neonatal MRI System
9. GammaTile™ Cesium 131 vs. Brain Tumors
10. Microhospitals

# 1. Apps for Addiction

- ▶ reset-O™ was granted marketing clearance for mobile medical app as a prescription-only adjunct treatment
  - Coming to market this year
- ▶ Pear Health is included in FDA's Digital Health Software Pre-Cert Program
- ▶ The technology nearly doubled the rate of abstinence and increased retention in treatment



## 2. Direct-to-Consumer (DTC) Genetic Testing

### ► POTENTIAL USES

- Beyond your ancestry!
- Epigenetic analysis of blood or urine samples to determine biological age (as compared to chronological age)
- Diet & exercise strategies based on individual genotype
- Customized advice on skin care (topical creams, professional treatments) based on DNA analysis



### 3. Acuity-adaptable Rooms

- ▶ Patient transfers/handoffs are a known safety issue
- ▶ An acuity-adaptable care model keeps a patient in the same room from admission to discharge, regardless of acuity level
- ▶ Positive effects: improve workflows and patient safety, decrease LOS, reduce costs





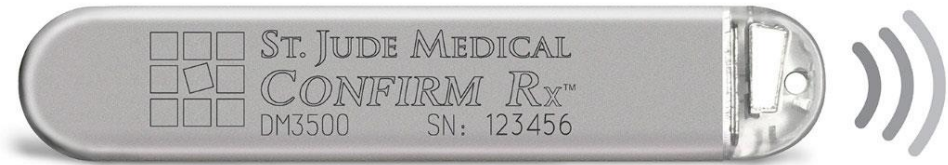
## 4. Insertable Cardiac Monitor

- ▶ 6 million people in the U.S. have atrial fibrillation (AF)

- Usually monitored with Holter systems; analysis is retroactive

- ▶ Abbott Confirm Rx™ ICM

- An implantable loop recorder cardiac monitor
- Interfaces with patient's smartphone which proactively transmits data to the treating physician



## 5. Virtual Reality for Pediatrics

- ▶ Kids with chronic conditions that require frequent procedures like infusion therapy or needlesticks may benefit from VR distraction
- ▶ Studies have shown a decline in pain for the children and a decline in anxiety scores or their parents



## 6. Non-medication Treatments for Alzheimer's Disease

### ► NeuroAD Therapy System

- Neuronix Ltd.
- The first device-based treatment for AD to receive the CE mark in Europe.
- Neuronix has applied for FDA marketing clearance

### ► NeuroAD uses transcranial magnetic stimulation(TMS) with computer-based cognitive training AND the patient's pharmacologic therapy

- Full 6-week course costs up to \$10,000



## 7. Nearly Pain-free Blood Draw

- ▶ Many lab tests require only small amounts of blood, yet large amounts are drawn
- ▶ Complex process for outpatient blood draws
- ▶ Seventh Sense Biosystems TAP® (touch activated phlebotomy) uses 30 microneedles to collect 100 microliters of blood over 2-3 minutes



## 8. Neonatal MRI System

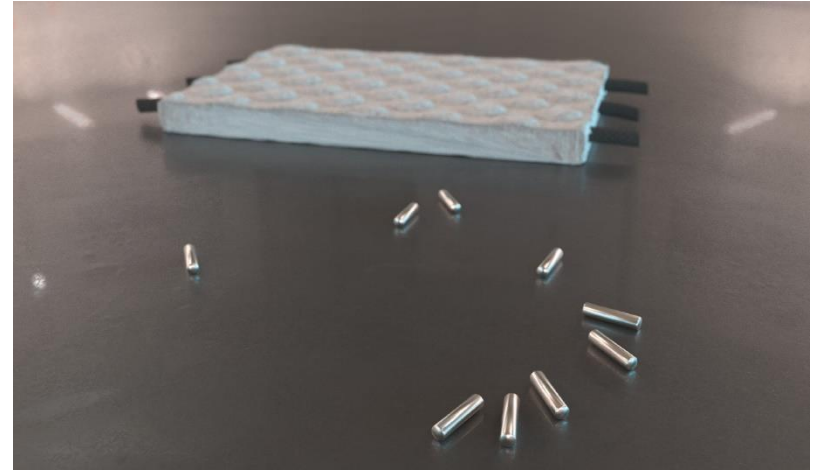
- ▶ Currently, when edema or hemorrhage is suspected, neonate is transported to MR system
- ▶ Aspect Imaging's Embrace® Neonatal MR System is a point-of-care NICU-based MR





## 9. GammaTile™ Cesium-131 vs. Brain Tumors

- ▶ Patients typically undergo external beam radiation therapy after brain tumor excision
  - Time lapsed between surgery and radiation may allow residual tumor to “reseed”
- ▶ GT Medical Technologies Gamma Tile Radiation Therapy System
  - Intraoperatively delivered brachytherapy that standardizes seed placement and improves dose targeting



## 10. Microhospitals

- ▶ New care paradigm
- ▶ Health systems - and investors - are very interested
- ▶ Not urgent care center nor full service hospital
  - ED and inpatient beds
  - Surgery, pharmacy, radiology
  - Dietary, EVS, Materials



# Cleveland Clinic Names Top 10 Medical Innovations for 2018

1. Hybrid Closed-Loop Insulin Delivery System
2. Neuromodulation to Treat Obstructive Sleep Apnea
3. Gene Therapy for Inherited Retinal Diseases
4. The Unprecedented Reduction of LDL Cholesterol
5. The Emergence of Distance Health

# Cleveland Clinic Names Top 10 (Cont'd)

6. Next Generation Vaccine Platforms
7. Arsenal of Targeted Breast Cancer Therapies
8. Enhanced Recovery After Surgery
9. Centralized Monitoring of Hospital Patients
10. Scalp Cooling for Reducing Chemotherapy Hair Loss

# Outline

## ▶ Building a Bridge To The Future

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# Strategies for Success

- ▶ Implement evidence-based technology decision-making process for medical capital
- ▶ Add organized technology horizon-scanning into your five-year strategic capital plan
- ▶ Ensure your healthcare strategy includes a clinical technology strategy

# Strategies for Reducing Costs

- ▶ Look for collaboration partners
- ▶ Look for “standardization” opportunities and “risk mitigation” strategies
- ▶ Approach multi-year vendor partnerships carefully

# Tony's Top Three Technology Truths

1. Fortune favors the bold (Latin proverb)
2. Facts are stubborn things (John Adams)
3. Data is not the plural of anecdote (various authors)

# Fortune favors the bold



# Facts are stubborn things

Let's Make a Deal



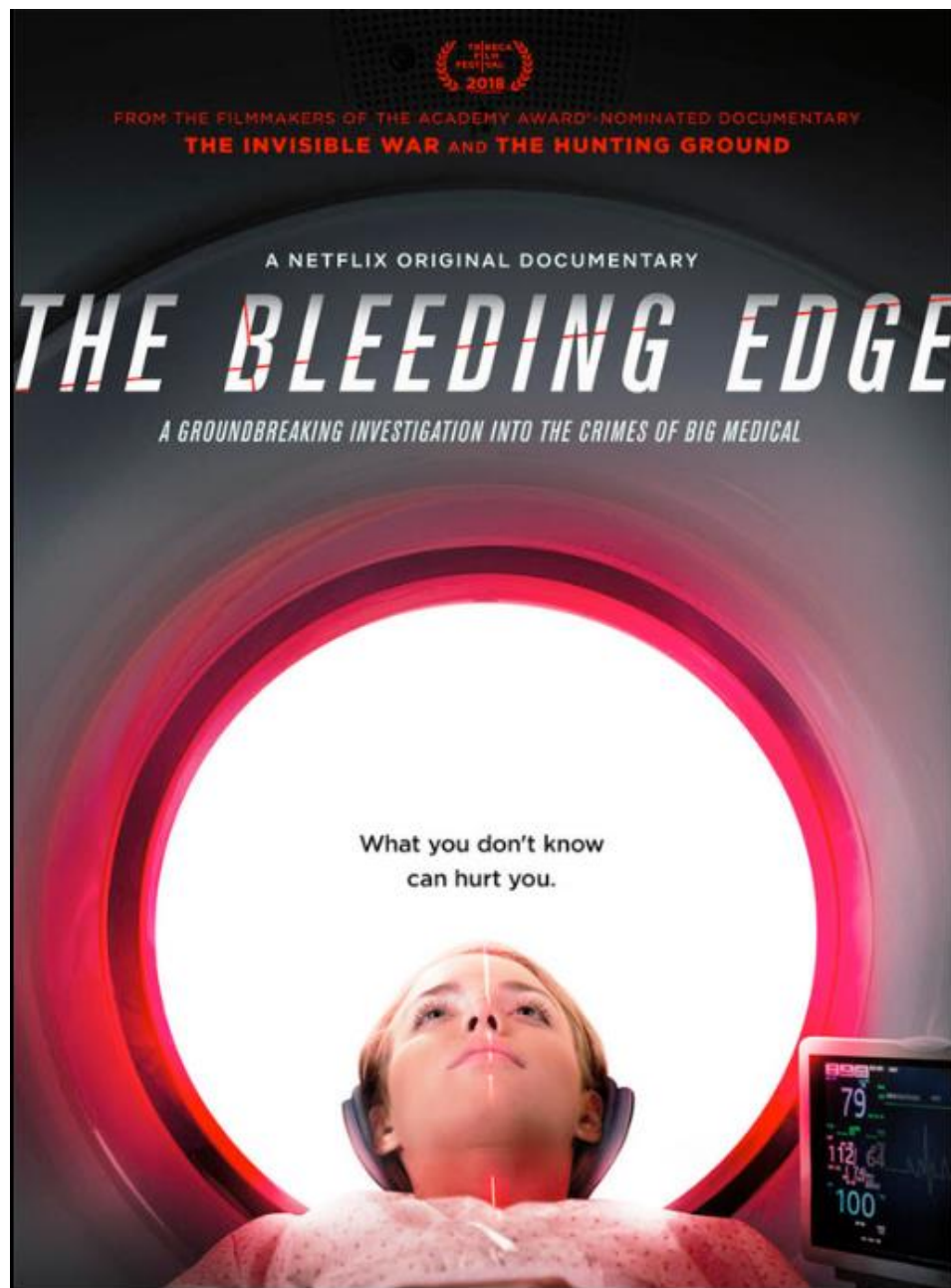
**Who remembers the Monty Hall problem?**





# Data is not the plural of anecdote







**Look past the headlines---get the full story.**

# Foolish Tech Prediction 6

***Nathan Myhrvold, former Microsoft CTO, 1997***

- ▶ "Apple is already dead."

Source PCWorld.com: Strohmeier, R. (December 31, 2008). The 7 Worst Predictions of All Time.  
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**The first principle is that you must not fool yourself and you are the easiest person to fool.**

**–Richard P. Feynman\***

\* Richard Feynman was a prominent American scientist, widely considered to be one of the greatest and most influential theoretical physicists in history. Feynman revolutionized the field of quantum mechanics and formulated the theory of quantum electrodynamics. He won the Nobel Prize for Physics in 1965.

**In short, do  
your  
homework.**

