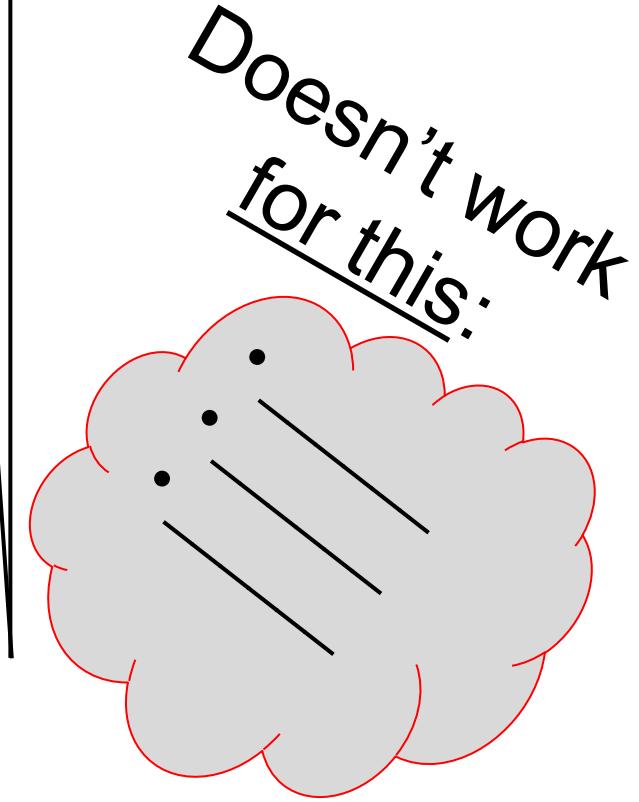
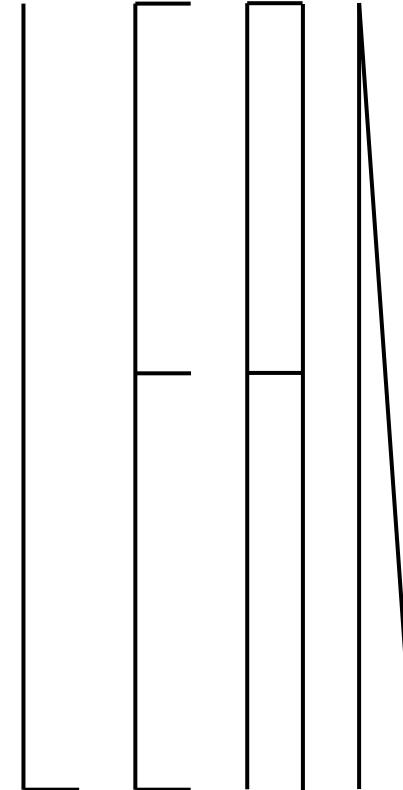
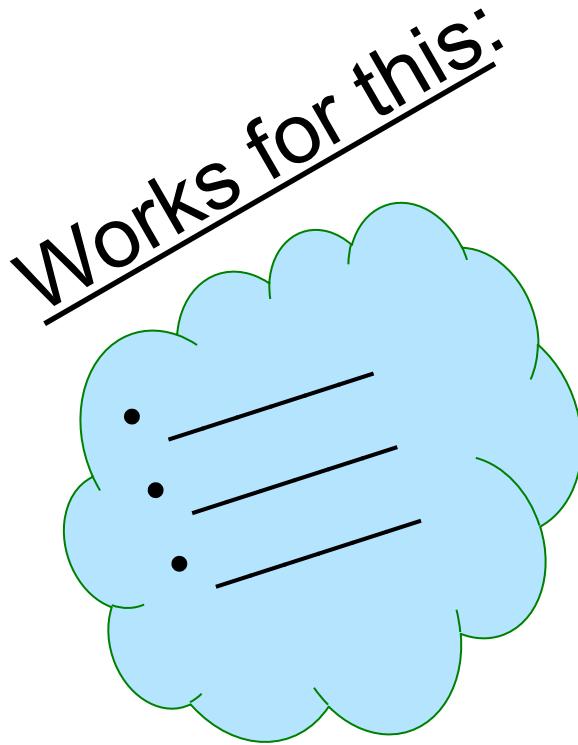


# Competing at Speed in a Fast Moving World

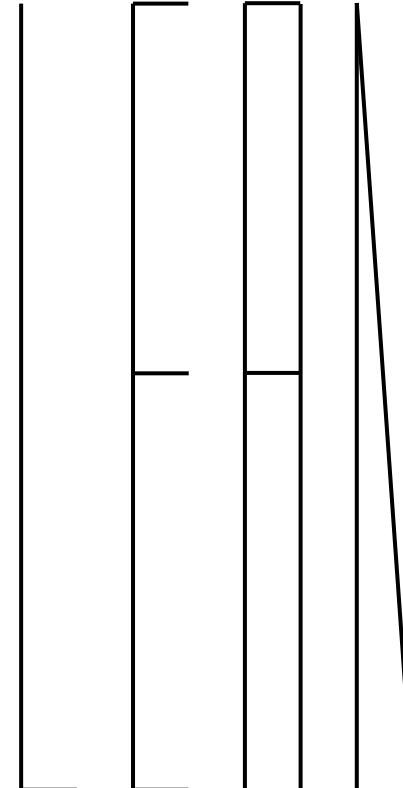


Steve Spear

- Senior Lecturer, MIT Sloan and Engineering Schools
- Senior Fellow, Institute for Healthcare Improvement
- Principal, HVE LLC
- Founder, See to Solve

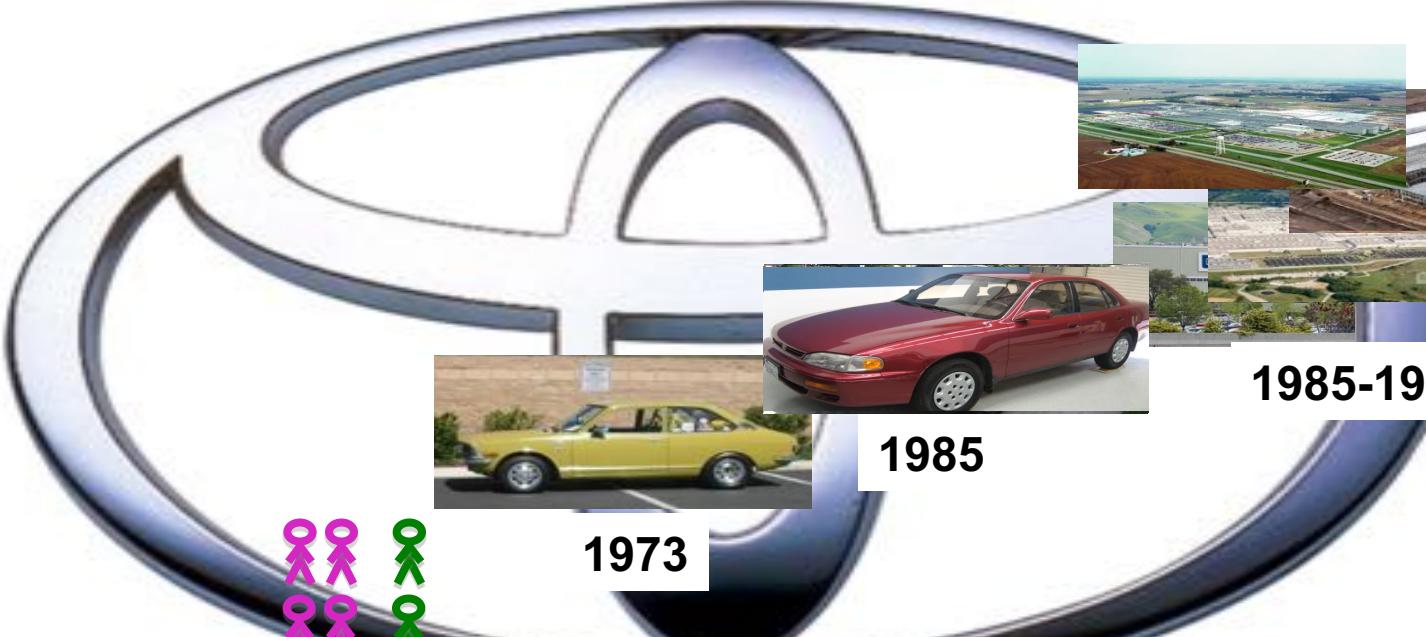


WHY



?





# TOYOTA

# New Technology



# New Technology



## Rewards for Speed



### Profit gap

Based on earnings before interest and taxes, Toyota is forecast on average to earn more than \$2,700 per vehicle sold for its current fiscal year (ending March 31).

### Average earnings per vehicle sold



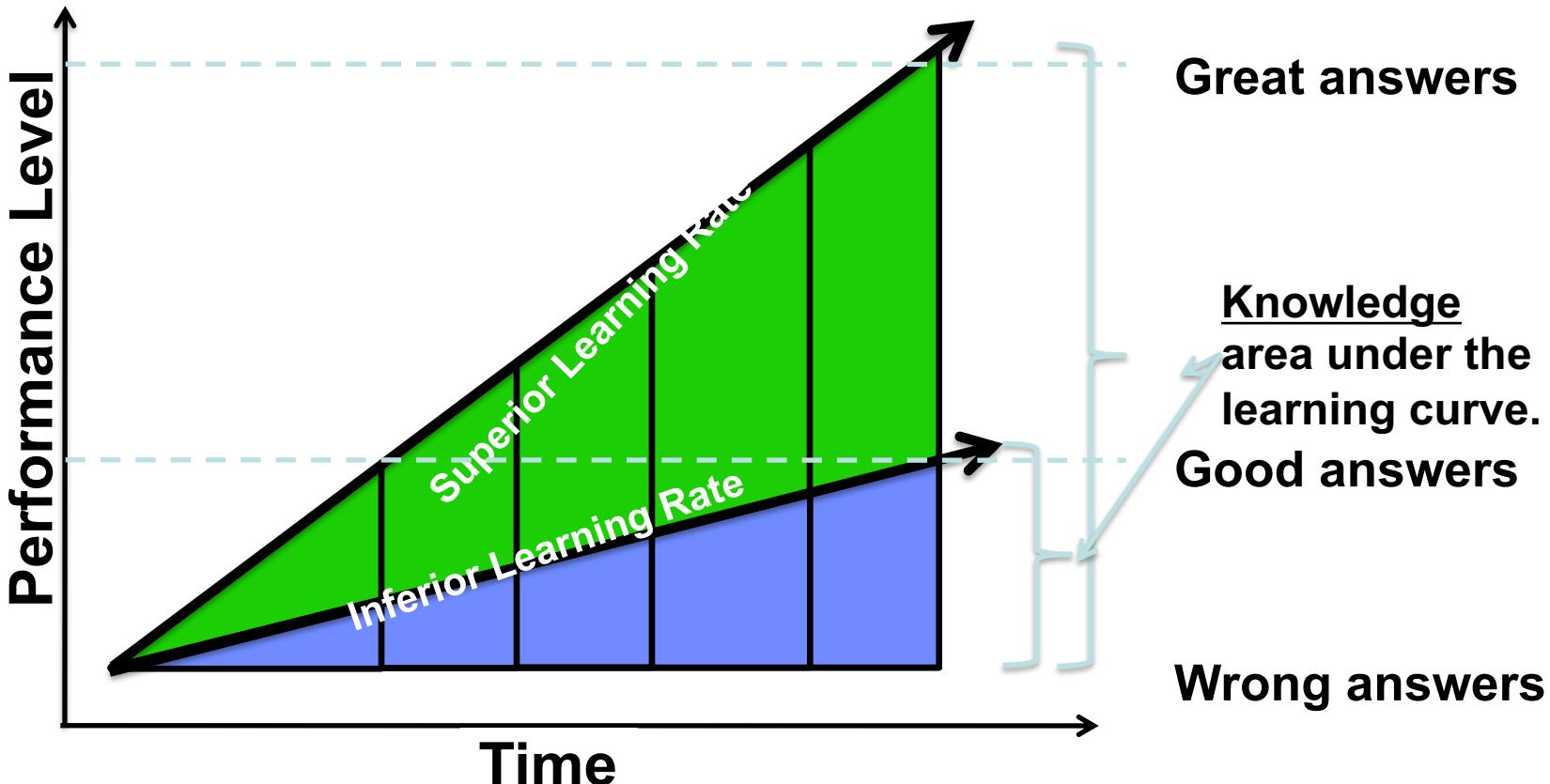
\*Based on Toyota forecast of 9 million vehicles sold, and income of 2.92 trillion yen before taxes. (Uses current exchange rate.)

Source: Company data

The Detroit News



## Competing at Learning Speed



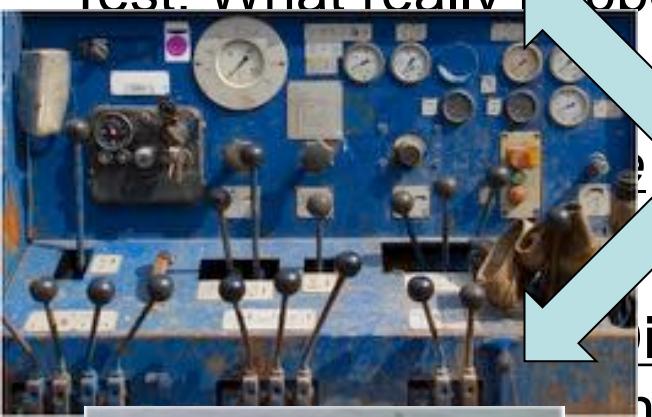
# Leading the Learning Engine

Ca



over problems

- Fixing what's going to happen?
- Test: What really happened?

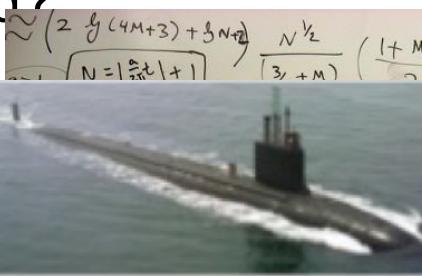


Ca

• E



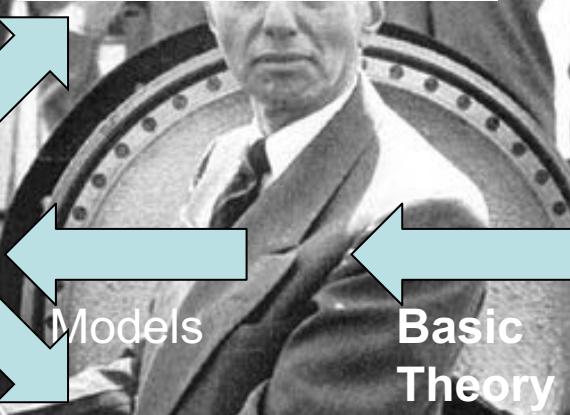
Discovery, and learning



$$\approx \left(2 \sqrt{4M+3} + \sqrt{N+2}\right) \frac{N^{1/2}}{(3/4 + M)} \left(\frac{1+M+t}{t-N}\right)^{2M+2}$$

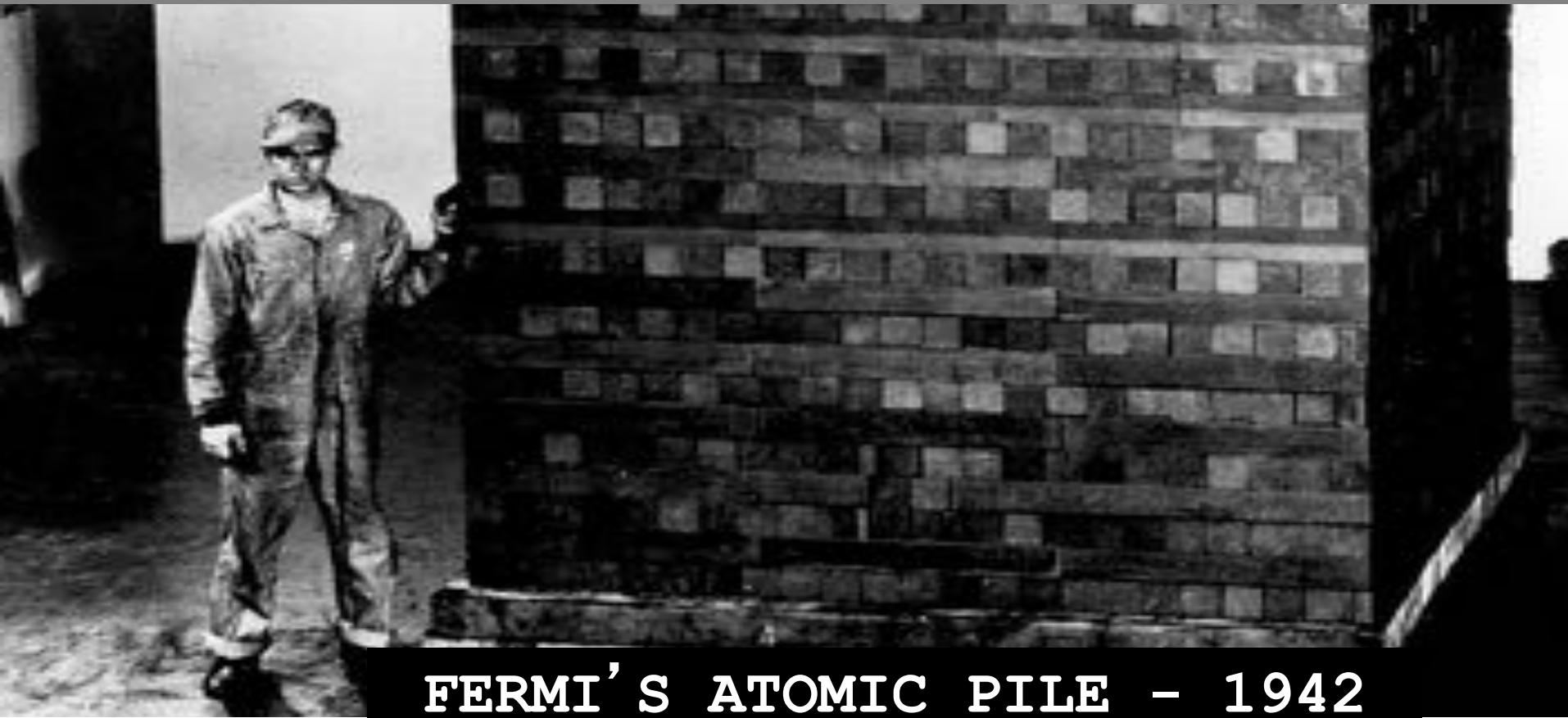


$$\begin{aligned} & \text{Handwritten notes: } \\ & \sqrt{N+2} \approx \sqrt{N} = N^{1/2} \\ & \sqrt{4M+3} \approx \sqrt{4M} = 2\sqrt{M} \\ & \frac{N^{1/2}}{(3/4 + M)} \approx \frac{N^{1/2}}{(3/4 + 2\sqrt{M})} \\ & \left(\frac{1+M+t}{t-N}\right)^{2M+2} \approx \left(\frac{1+M+t}{t-N}\right)^{2M+2} \end{aligned}$$

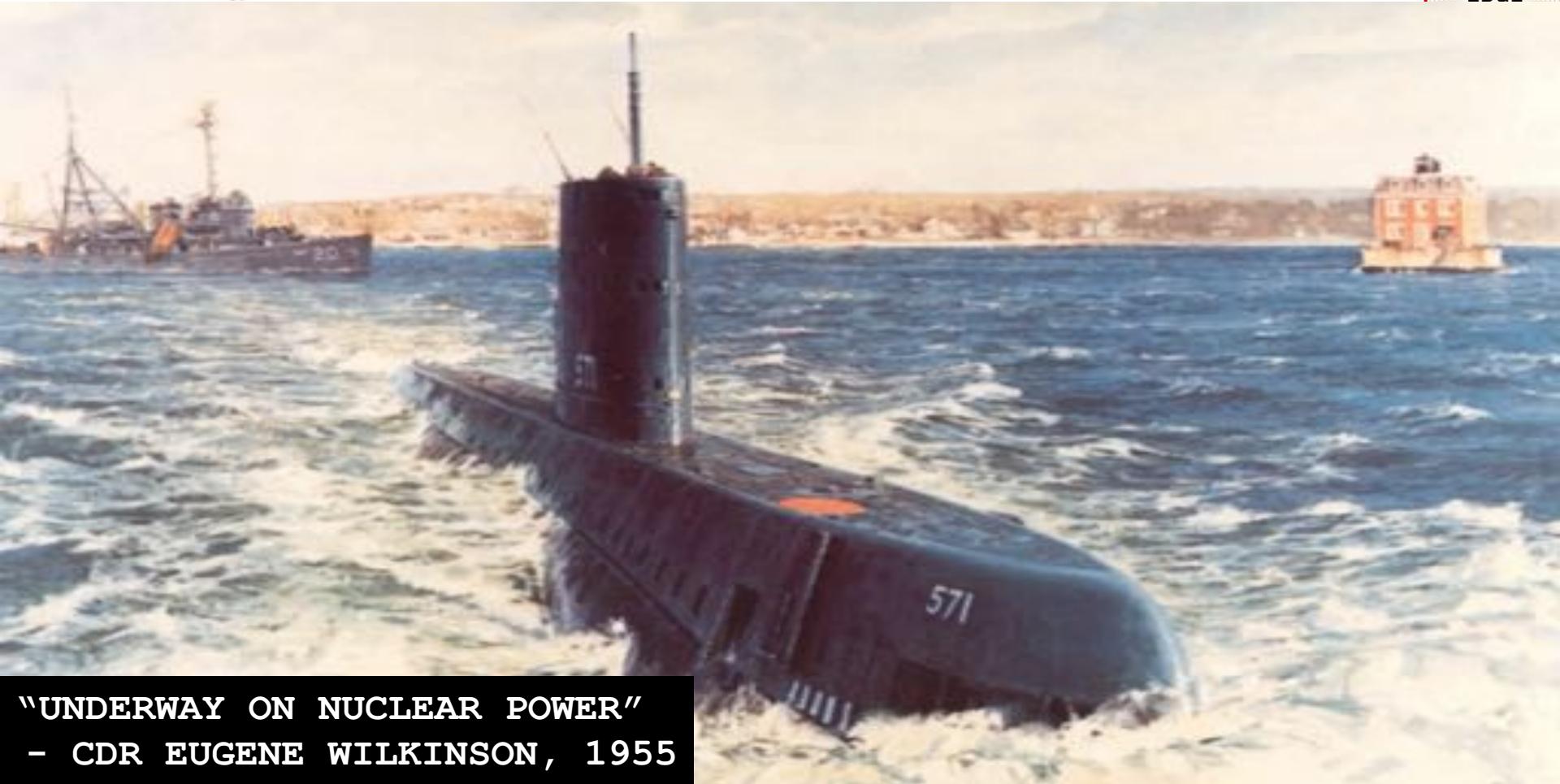


Basic Theory

# The Complex Made Simple and Fast

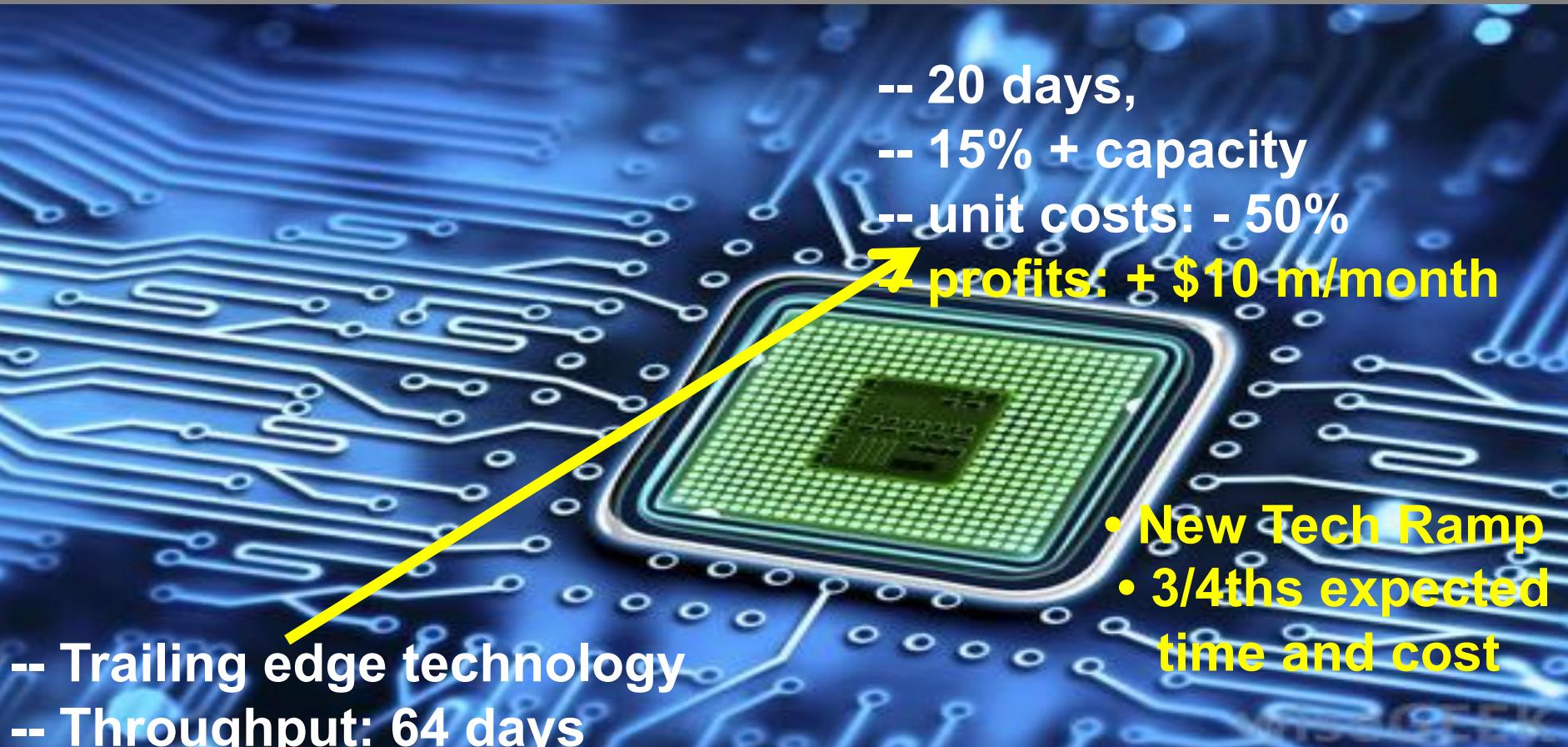


FERMI'S ATOMIC PILE - 1942



**"UNDERWAY ON NUCLEAR POWER"**  
- CDR EUGENE WILKINSON, 1955

## High Tech Manufacturing

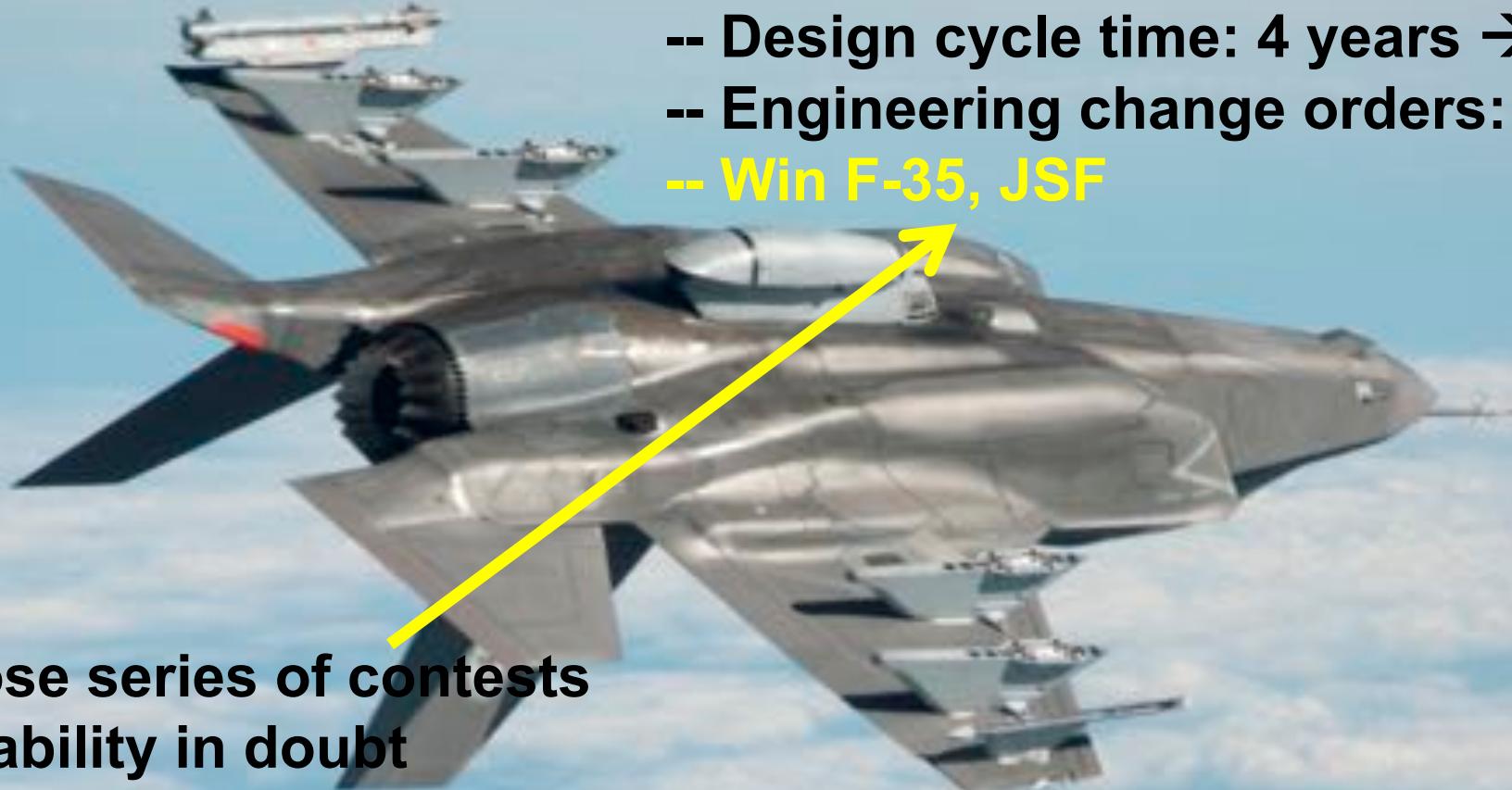


## Pratt and Whitney

- Design cycle time: 4 years → 3
- Engineering change orders: -  $\frac{1}{2}$
- Win F-35, JSF

→

- Lose series of contests
- Viability in doubt



## Alcoa



# US Department of Treasury

January 2001	February 2001
March 2001	April 2001
May 2001	June 2001

**Book closing  
-- 6 months**



**-- 3 days**



## Healthcare

- Eliminate complications;  
70% in region
- Double capacity
- Time to doc: Hours to minutes

Risk of patient harm  
-- Like “BASE” jumping



## Women's Shelter



# Competing at Learning Speed

## Competing at Learning Speed



O T -



2ND & GOAL

1 0



NE 28

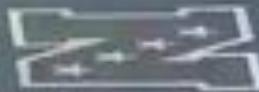


SEA 24

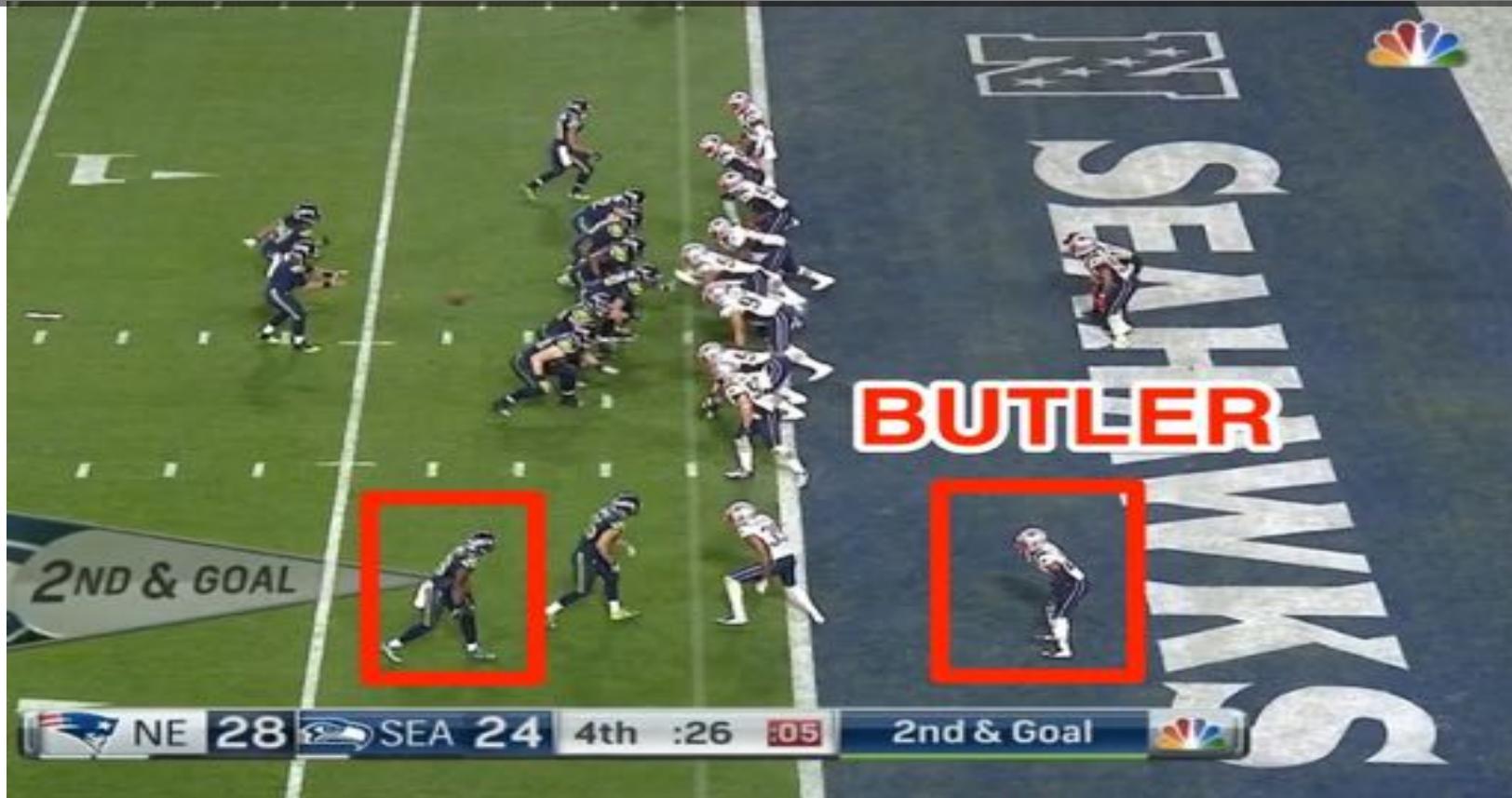
4th

:27 :06

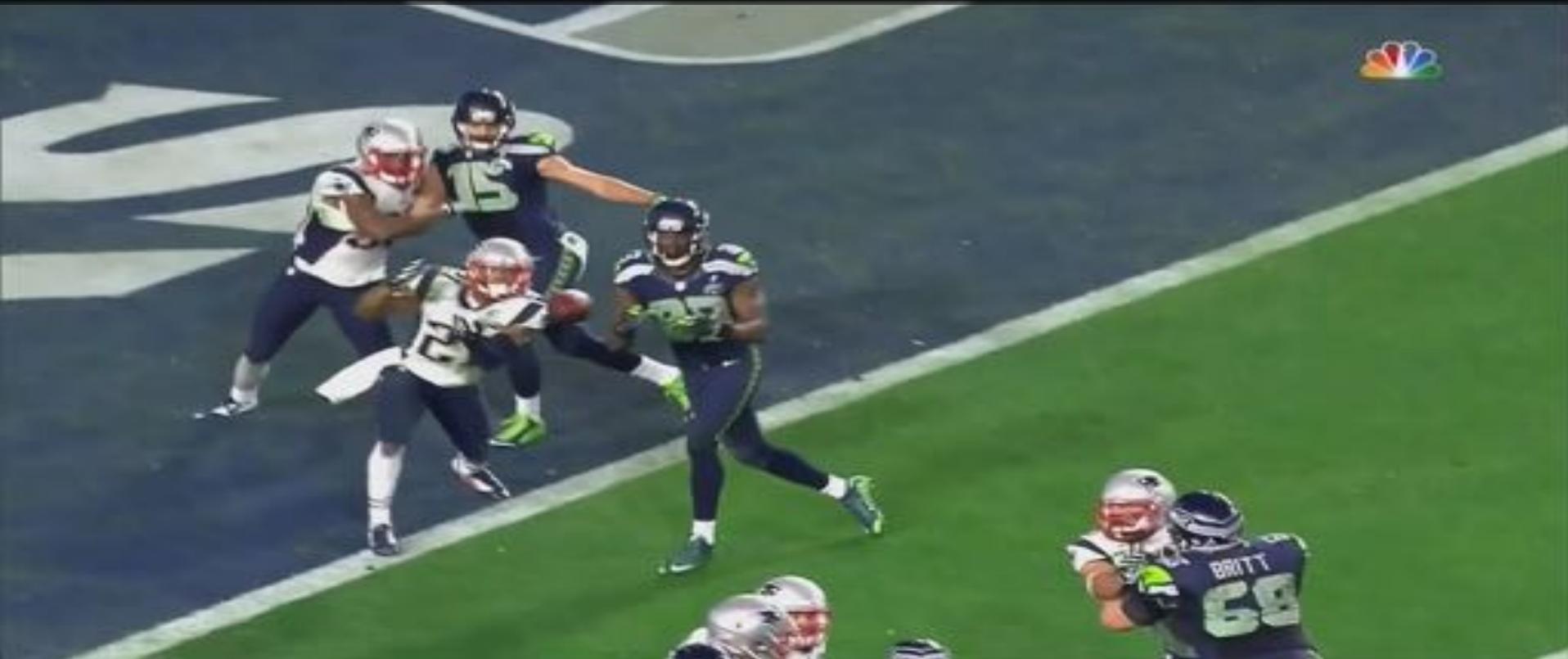
2nd & Goal



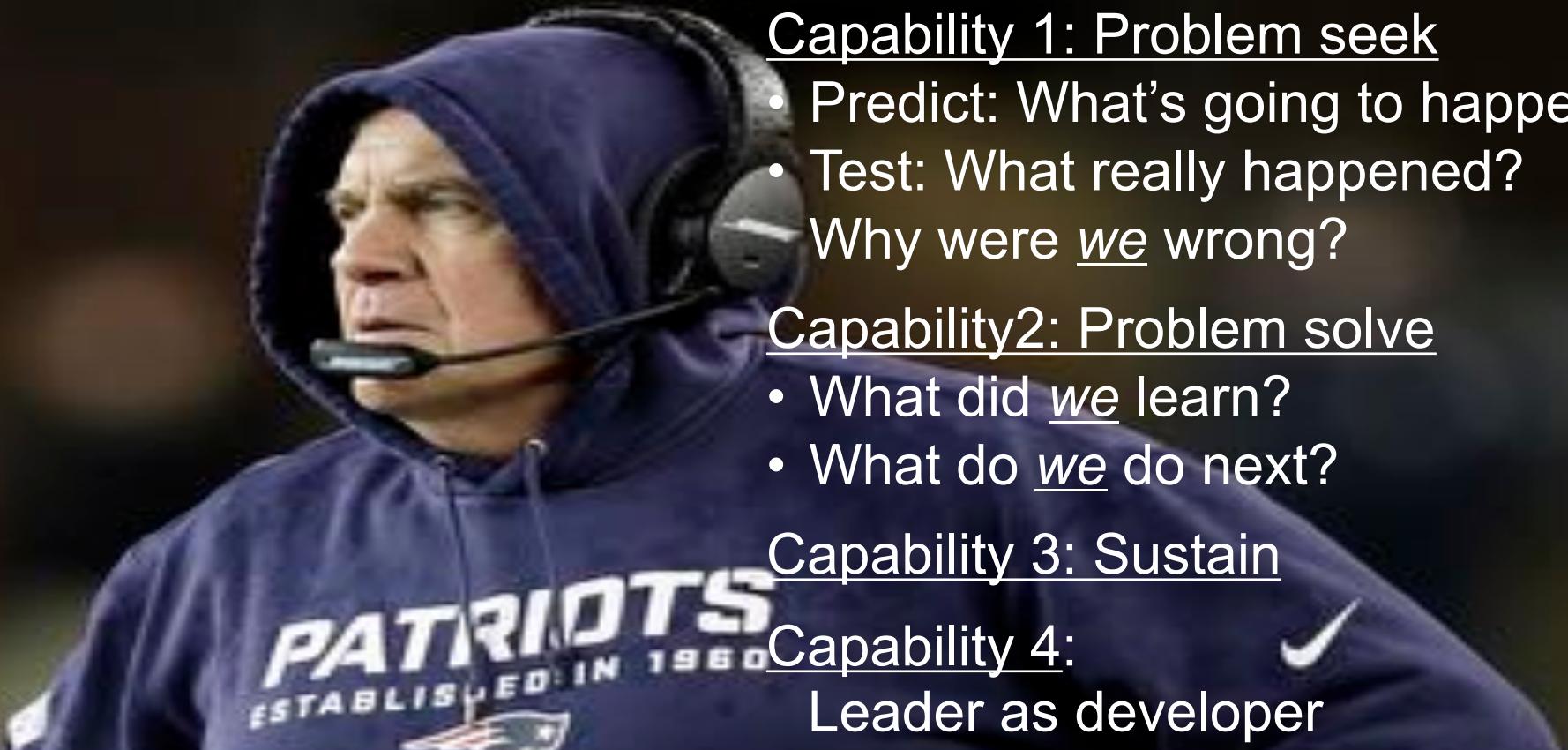
## Competing at Learning Speed



## Competing at Learning Speed



## Competing at *Learning Speed*



### Capability 1: Problem seek

- Predict: What's going to happen
- Test: What really happened?  
Why were we wrong?

### Capability 2: Problem solve

- What did we learn?
- What do we do next?

### Capability 3: Sustain

### Capability 4:

Leader as developer

## Homework . . . Be “The Admiral”

### Capability 1: Discover problems

- Predict: What's going to happen?
- Test: What really happened?

### Capability 2: Solve Problems

- Explain: Why were we wrong?
- Adjust: Can we be better?

### Capability 3: Spread Discovery

- Spread by teaching and learning

### Capability 4: Lead

- Build C1-C3 DO THIS WITH SOMEONE

