

# AI and Personnel Economics

## Economics of Artificial Intelligence

Toronto/ NBER, September 13- 14

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Change Lives. Change Organizations. Change the World.

STANFORD  
BUSINESS  
GRADUATE  
SCHOOL OF

Graduate School of Business, Stanford

# Outline

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I. What Makes Workers Productive?

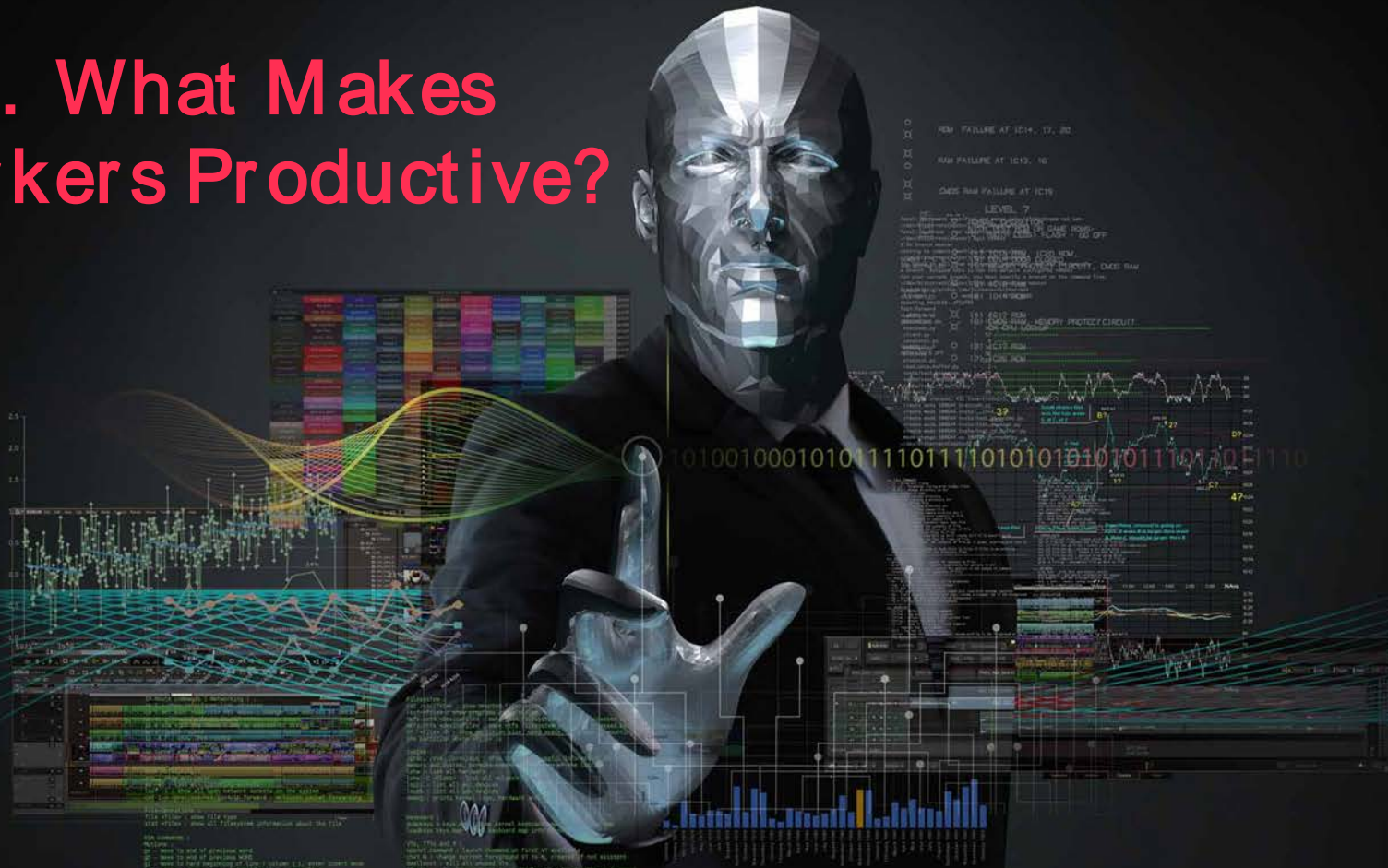
II. AI and Personnel Economists:

Re-shaping the Internal Strategy of the Firm

1. Hiring and Other Processes
2. Teams and Empowerment
3. Job Design: Stars and Guardians
4. Managers Matter
5. Pay

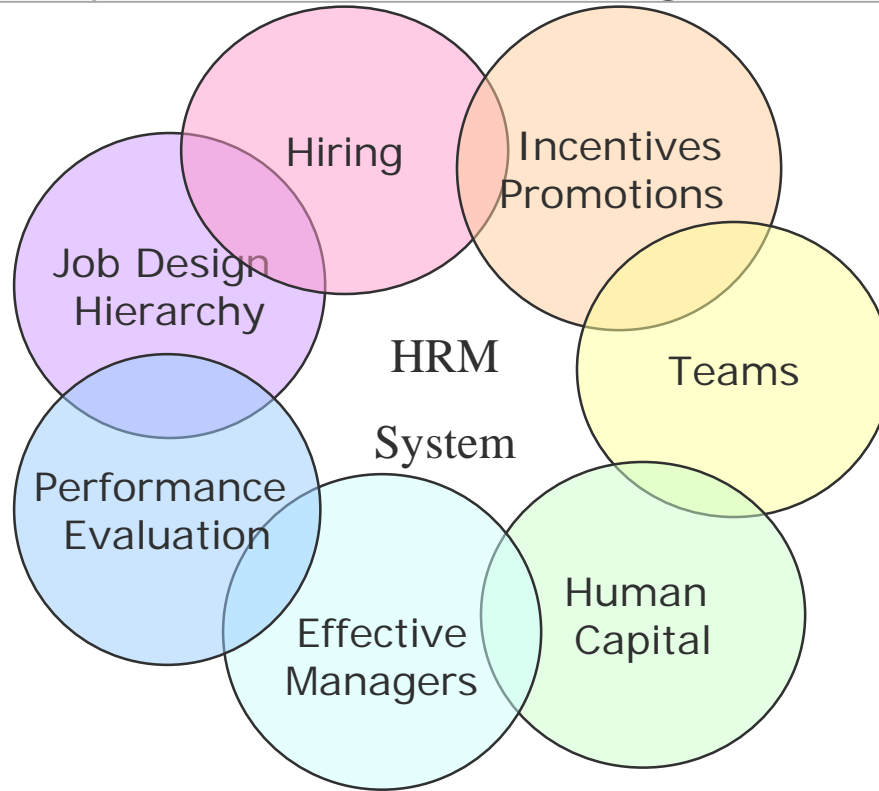
III. Conclusion: The Big Picture

# I. What Makes Workers Productive?



## Culture: The HR System of Interlocking HR “Levers”

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## II. AI and Personnel Economists: Re-shaping the Internal Strategy of the Firm


1. Hiring and Other Processes
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HR

# 1. Hiring and Promoting

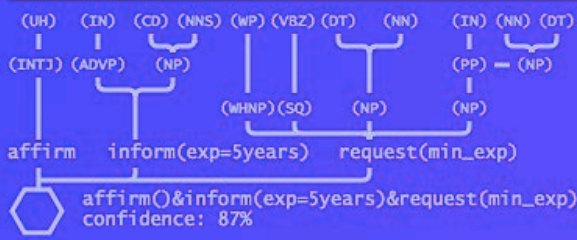
# Hiring AI Tools: Screening


 Mya  
4:08 PM

Hey Daniel, do you have managerial experience?

 Daniel Callaway  
4:08 PM

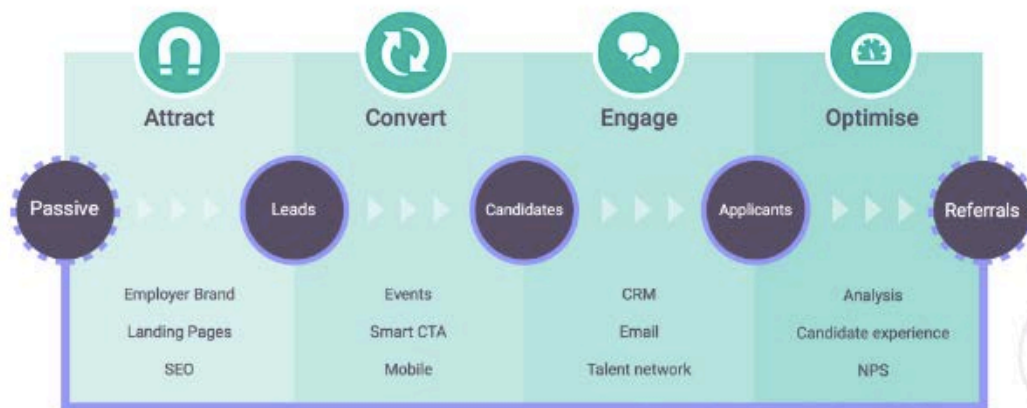
Yes, about five years. What's the minimum for this role?



 Mya  
4:08 PM

That's great! The role requires about two years so you definitely meet the qualification.

# Hiring AI Tools: Hiring Process for Job Match



# Hiring AI Tools: Reducing Discriminatory Unconscious Bias

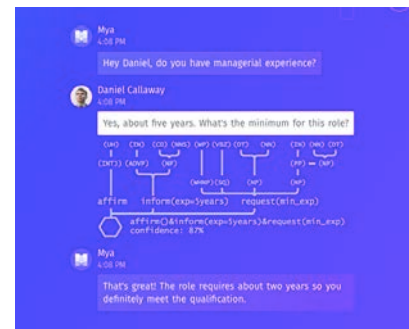


# Hiring: Models and AI Hiring Tools

## AI Hiring Tools Increase the Productivity of the HR group

## AI Hiring Tools Elevate Worker Productivity through:

- Improved Screening – less Signaling through Educational Institution
- Better Person-Firm Job-specific Match
- Reduced Discrimination
- Greater Team Heterogeneity



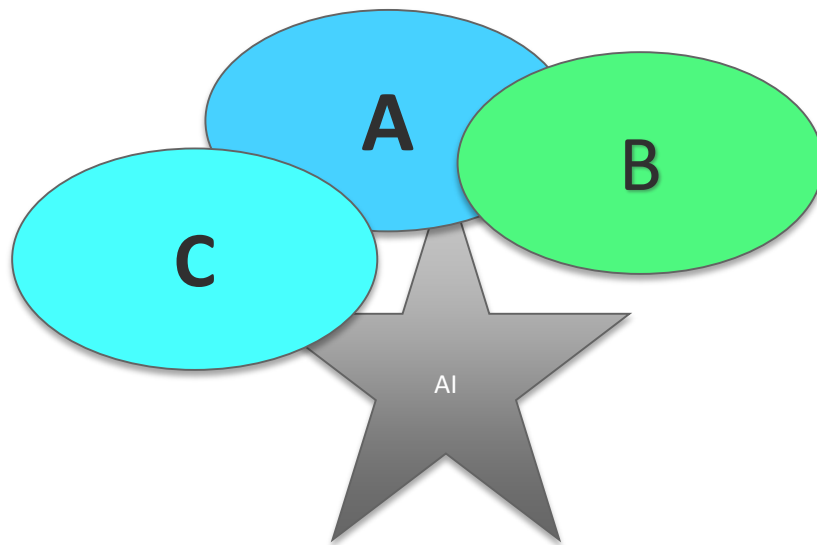


## 2. Teams and Empowerment

# Teamwork and Empowerment

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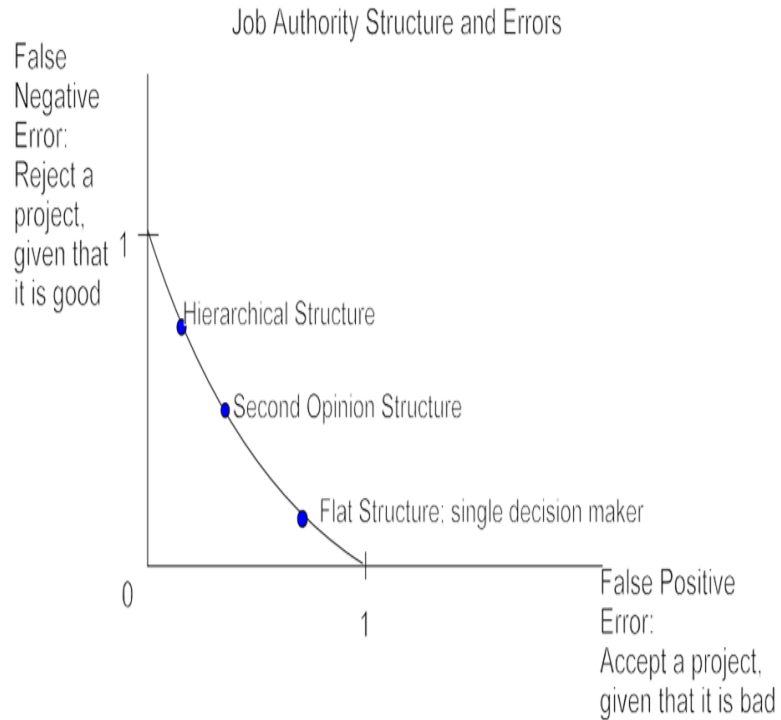
*Team members A, B, C work together in a **complementary** fashion.*



*Now, AI Algorithms will be a team member.*

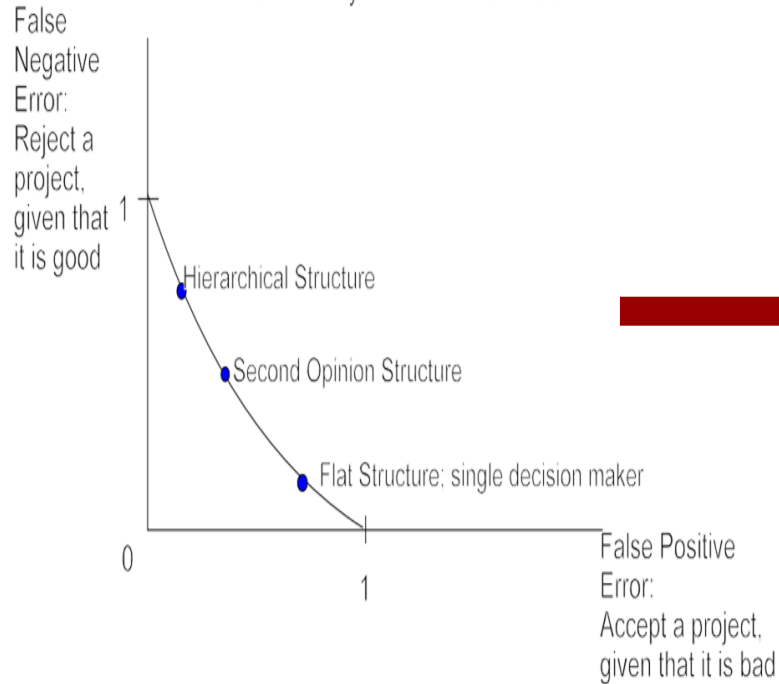
*This is very different from computers of the past—computerization was enabling but not contributing.*

# Teamwork and Empowerment

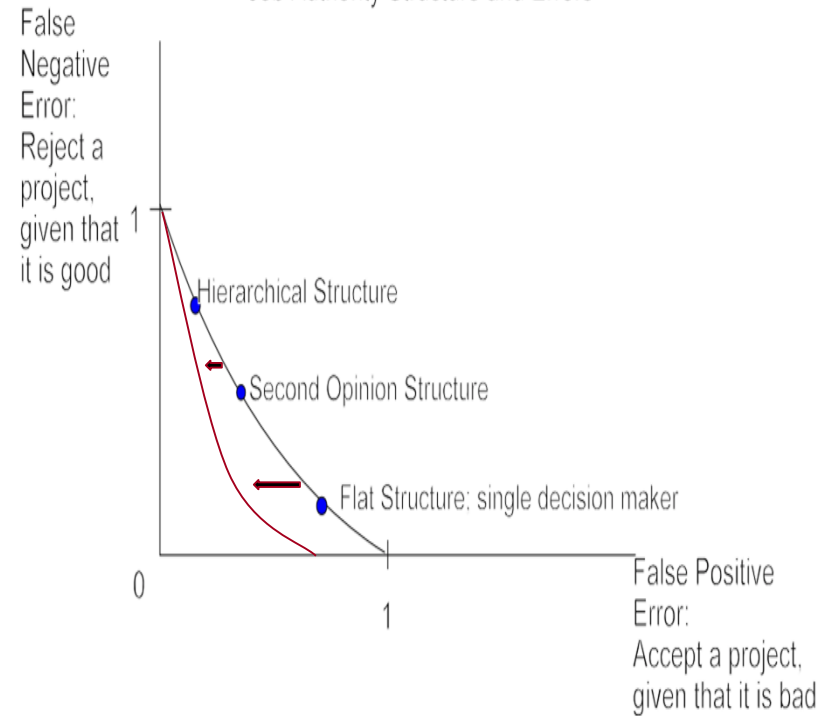


# Teamwork and Empowerment

Job Authority Structure and Errors



Job Authority Structure and Errors



### 3. Job Design: Stars, Guardians, or Foot Soldiers?



#### STARS

- Big upside gains from success, low downside for failure
- “Many are called, few are chosen”



#### GUARDIANS

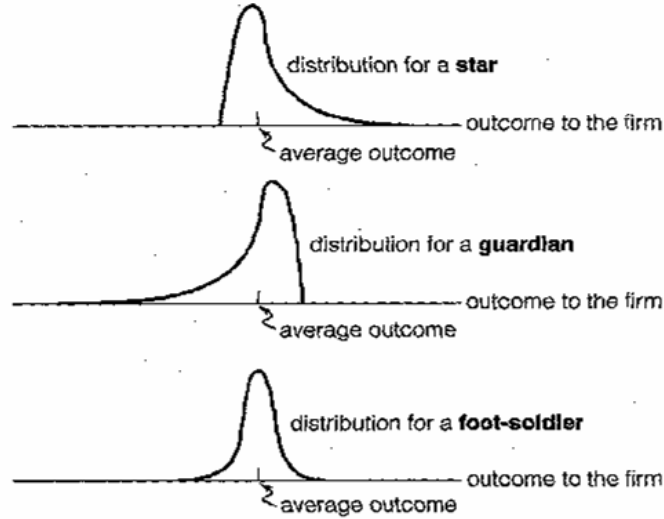
- Potential big downside losses
- Big penalties for failure (job loss)



#### FOOT SOLDIERS

- The average guy doing his job

# Job Design



**Figure 2-2** Distributions of outcomes for different types of jobs.

A star job has big potential upside gains for effort.

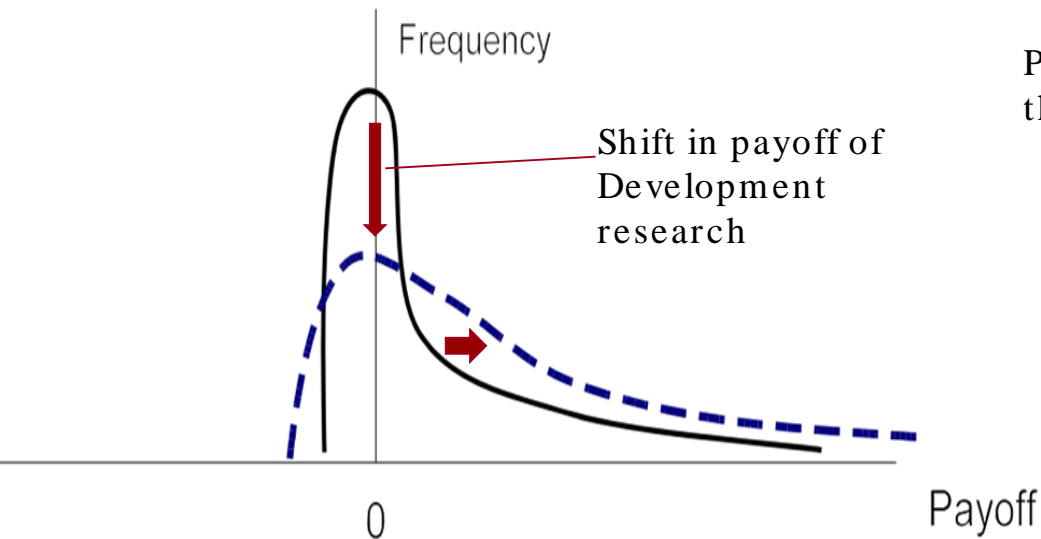
A guardian job has big potential downside losses from mistakes.

Source: *Strategic Human Resources: Frameworks for General Managers*, by James N. Baron and David M. Kreps, (New York: John Wiley and Sons, 2000).

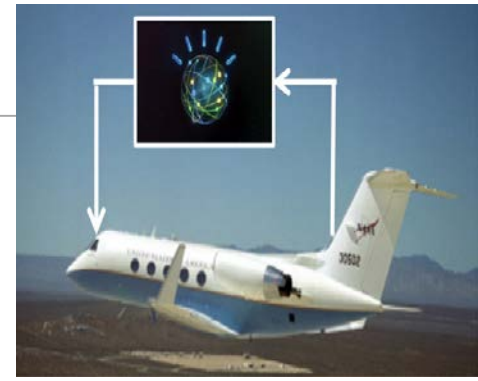
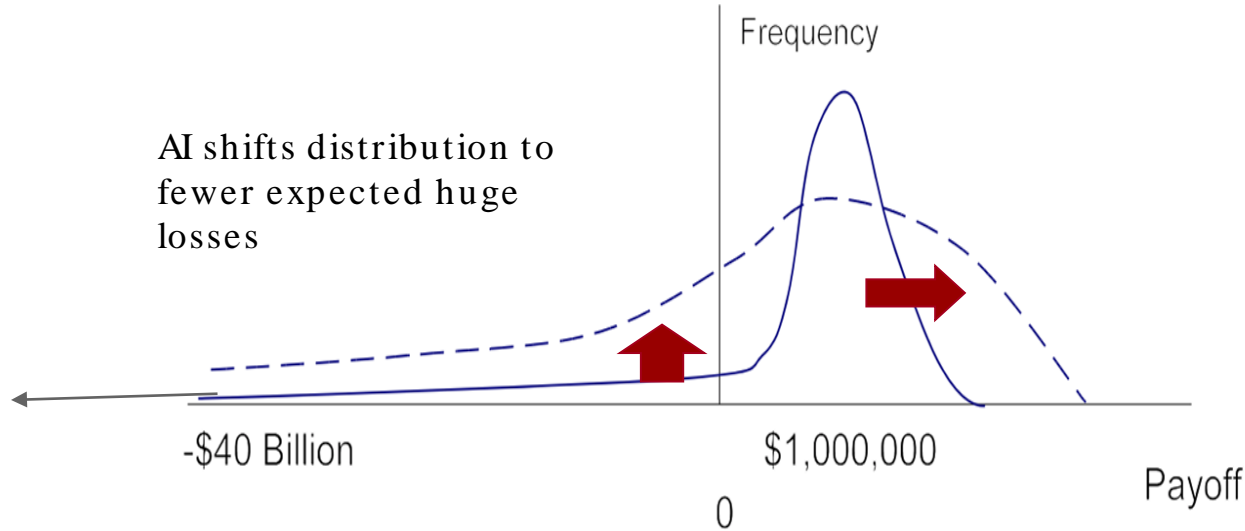
# AI and the payoffs to people in *Star* jobs

## AI as a complement to R&D

Payoff of “Development” research shifts from the solid to the dotted line.



# AI and the payoffs to people in *Guardian* jobs



AI based pilots

# Empowerment: Models and AI Tools



“Stars” have greater predictive capabilities  
to avoid false positives  
and have more upside gains.

“Guardians” have control through AI  
to prevent downside losses.



## 4. Manager Effectiveness



Michael from  
The Office



Mark Lipscomb



Elon Musk

Are these people  
productive?

<https://vimeo.com/199290572>

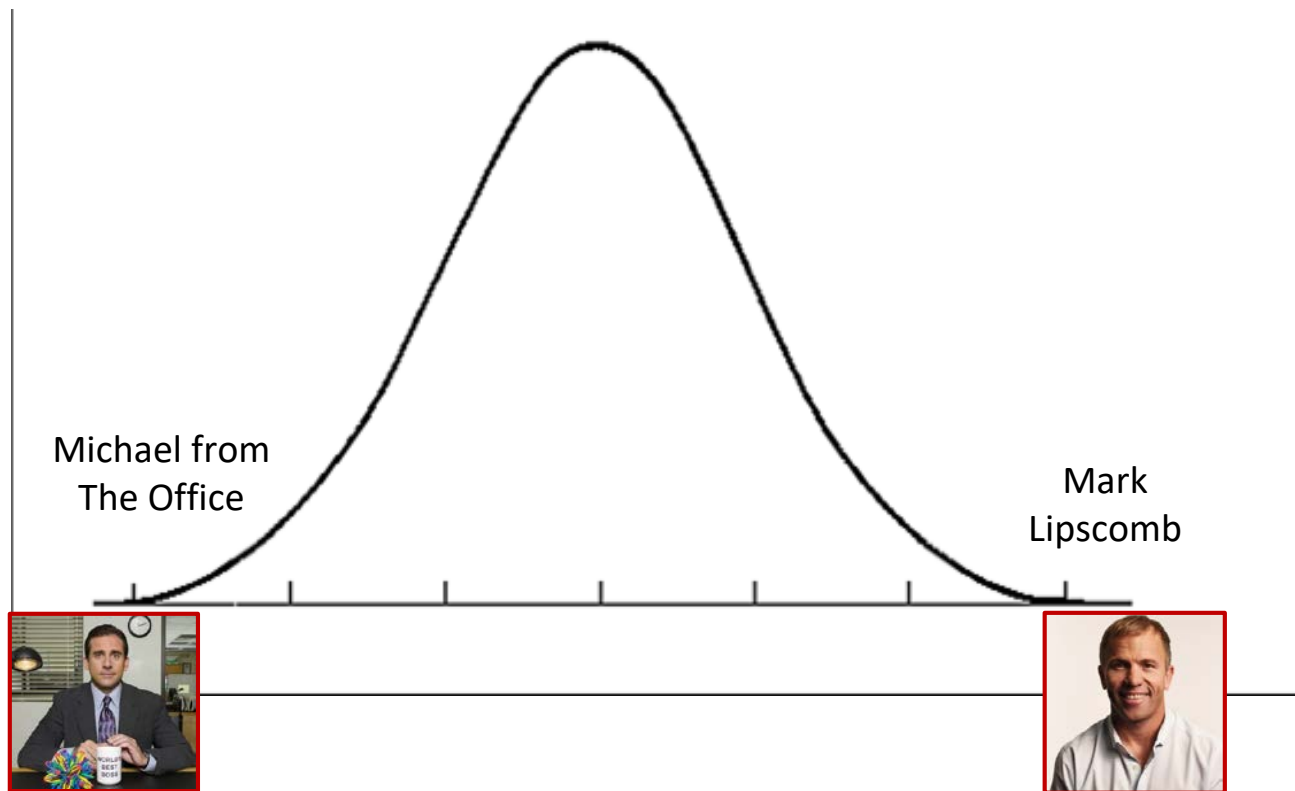




## AI and People Analytics – Managers' Use

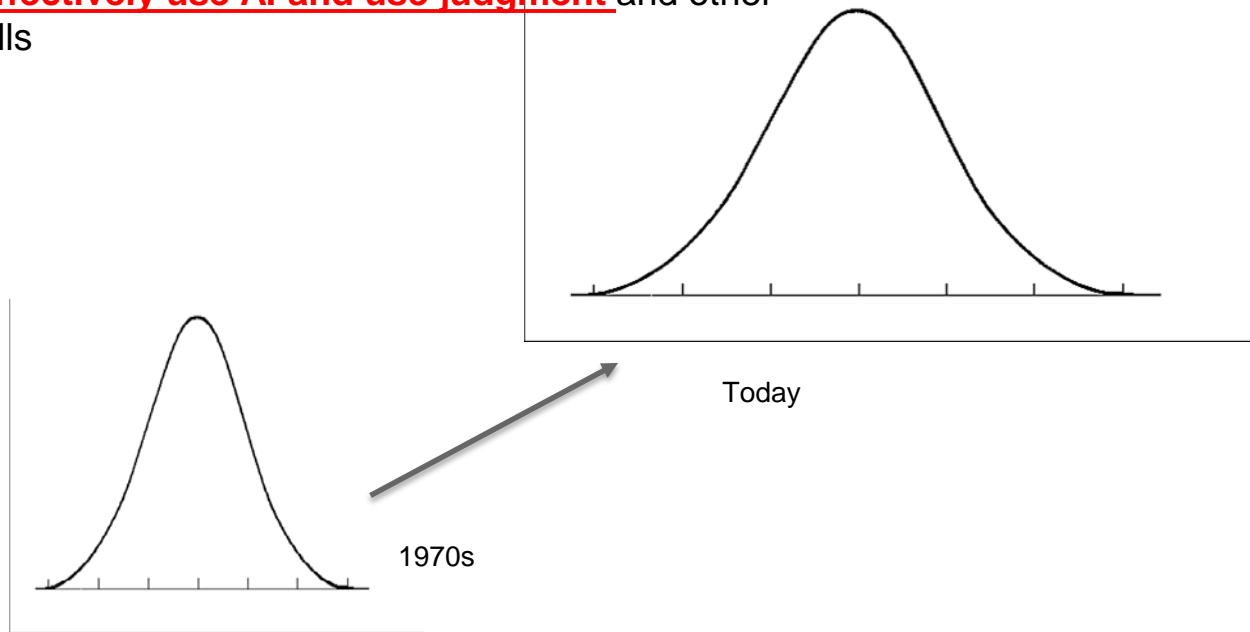
**Xander** analyzes emails:  
Are you confused, optimistic, angry?  
Are you the real “boss?”

# Estimating The Value of Bosses



# The rising variance of wages across managers...

- The variance of pay will increase more as successful managers **effectively use AI and use judgment** and other personal skills

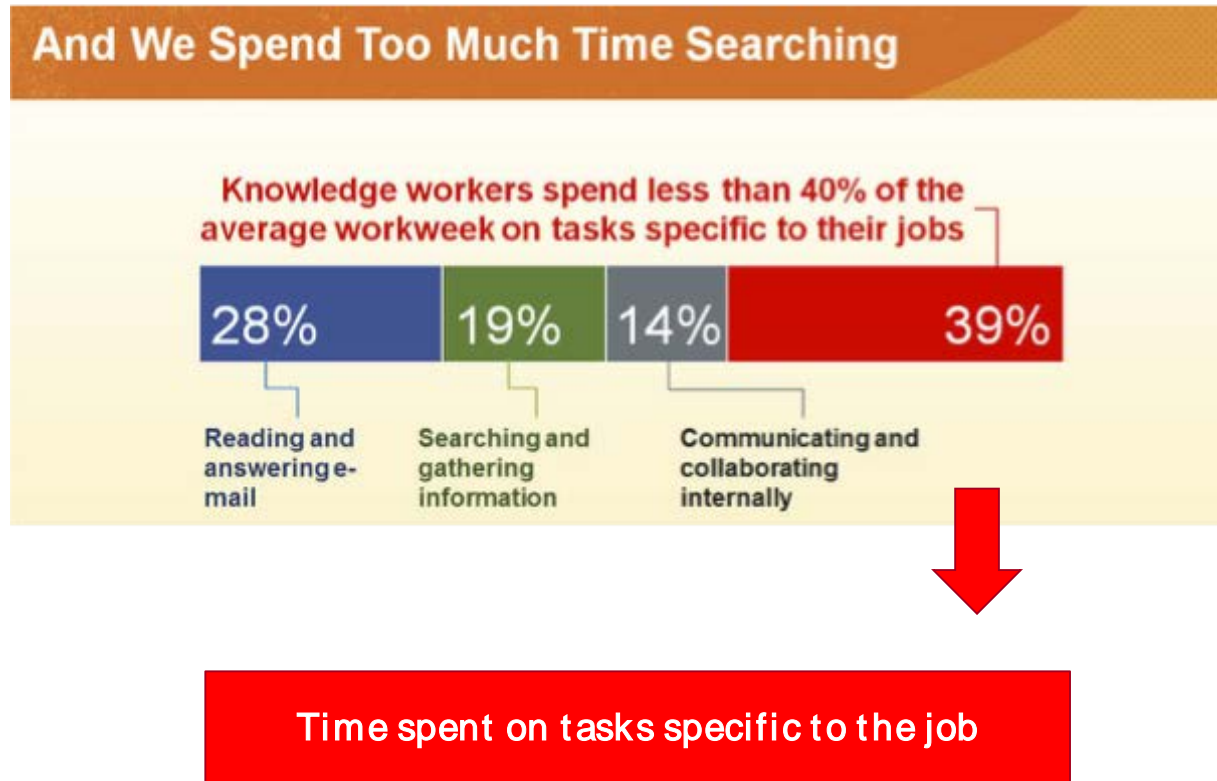




## 5. Pay:

**“What gets measured  
gets managed.”**

# AI reduces wasteful activity for managers and knowledge workers



# Weigh the performance

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## Relative scale



### Advantages:

1. Cheaper to measure
2. Takes out the “common noise” of different concentration of top performance scores across bosses

## Absolute scale



### Advantages:

1. Creates precise absolute value all agree on

# Weigh the performance

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## Relative scale



### Advantages:

1. Cheaper to measure
2. Takes out the “common noise” of different concentration of top performance scores across bosses

## Absolute scale



AI can assess / predict who  
is good at judgement, e.g.:  
Measure project  
outcomes  
Managerial quality

# What has AI done for measurement and pay?

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## The big changes:

1. Simple easily measured tasks are gone.
2. AI can assess / predict who is good at judgement, e.g.:
  - a. Measure project outcomes
  - b. Managerial quality

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# III. Conclusion: The Big Picture

# What makes workers productive?

Will AI make workers more productive?

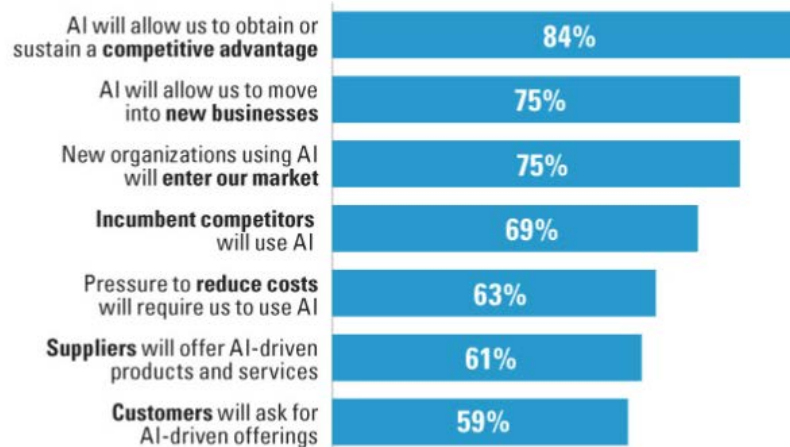
Will personnel practices change – so as to increase the speed of adoption or the returns to adoption of AI?

# What do managers say now? Survey evidence on future adoption

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## Reasons for adopting AI

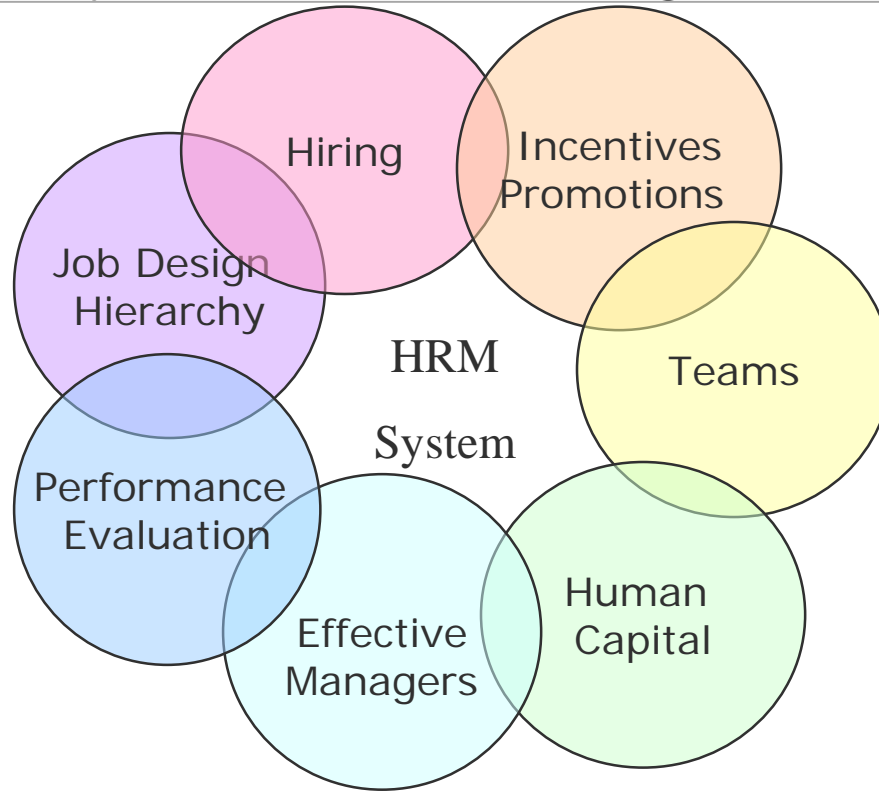
Why is your organization interested in AI?



Percentage of respondents who somewhat or strongly agree with each statement

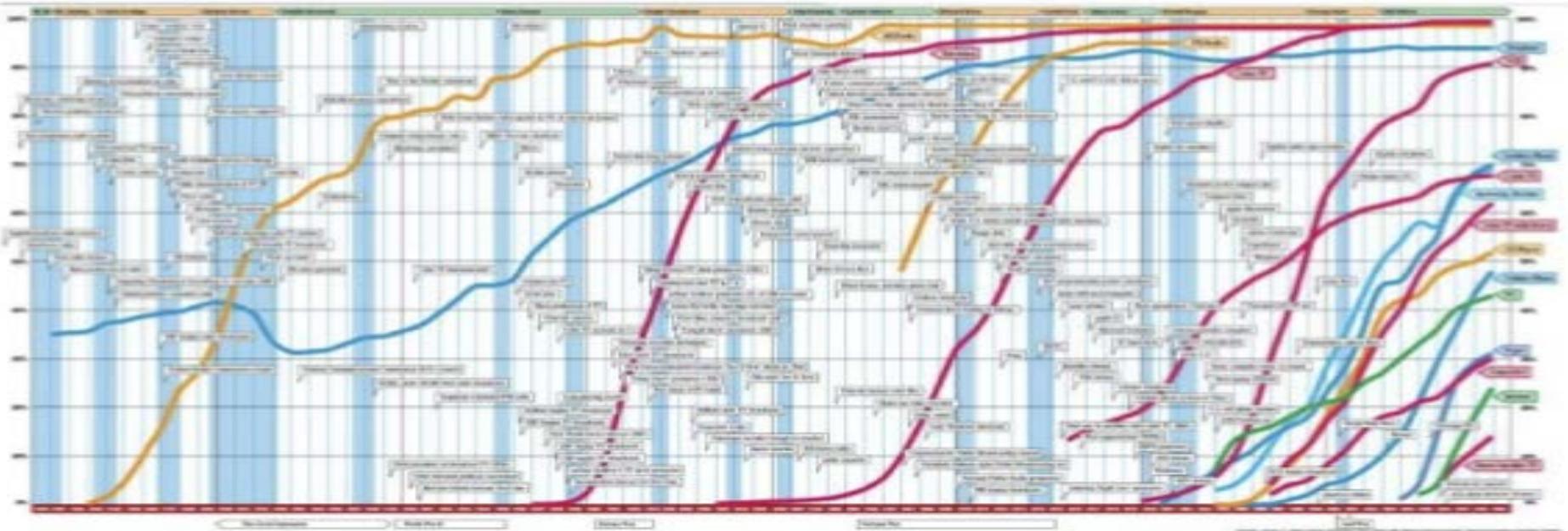
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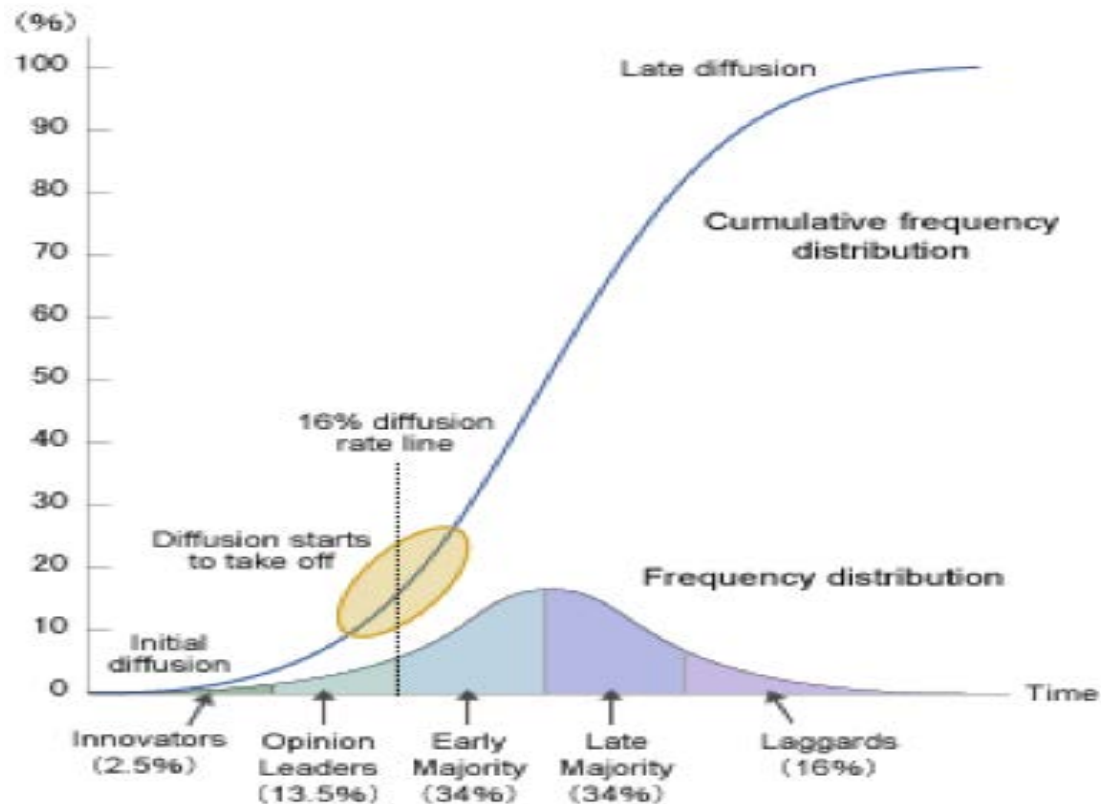


# How fast will AI get adopted?

## New Pressure - Increasing Speed of Adoption



# How fast will AI get adopted?



# The Destination: Machu Pichu



# Inducing workers (and managers) to embrace change

**What's In it For Me?**  
(WIFM)

# Thank You

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