




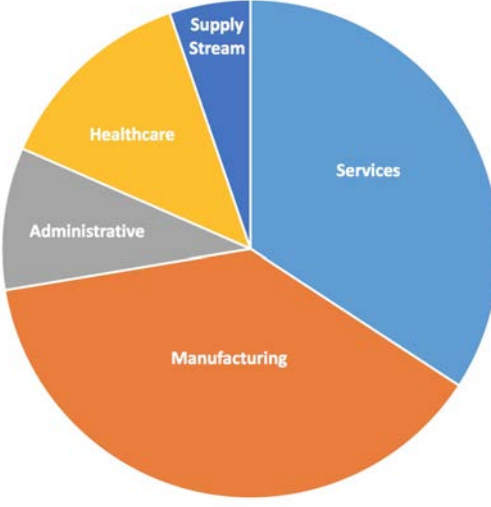
# New Work, New Employees

Eric Buehrens, CEO, LEI

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## Who's here at the LEI Summit?



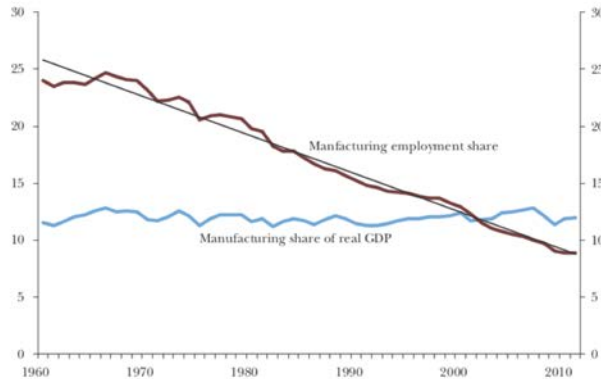
Industry	Color
Manufacturing	Orange
Services	Blue
Healthcare	Yellow
Administrative	Grey
Supply Stream	Dark Blue

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# US Manufacturing Employment Trends

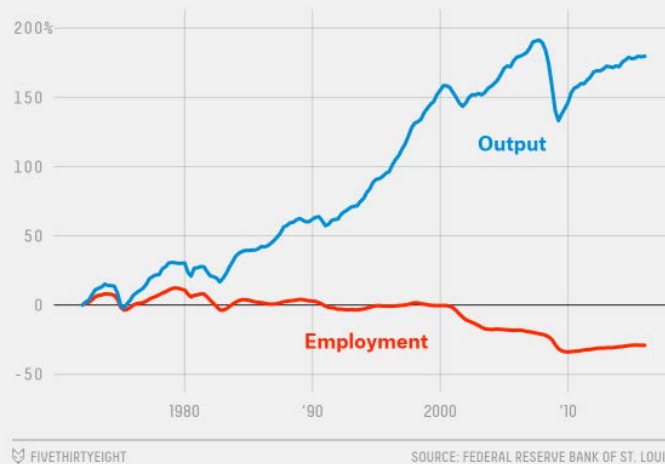
*Figure 1*  
**Manufacturing Value Added and Employment as a Share of the Total US Economy, 1960–2011**  
*(in 2005 prices)*



Source: Industry Accounts of the Bureau of Economic Analysis.  
 Note: Output is measured as value added in 2005 prices, and employment is reported as persons engaged in production (full-time equivalent employees plus the self-employed).

# Productivity gains...

**U.S. factories are making more, employing fewer**  
 Change since 1972 in manufacturing employment and output



## The dark side...



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## Why worry about “the future of work”?

- Robotics
- Machine learning & Artificial Intelligence (AI)
- The social contract & the “gig economy”
- Will we be made redundant by machines?

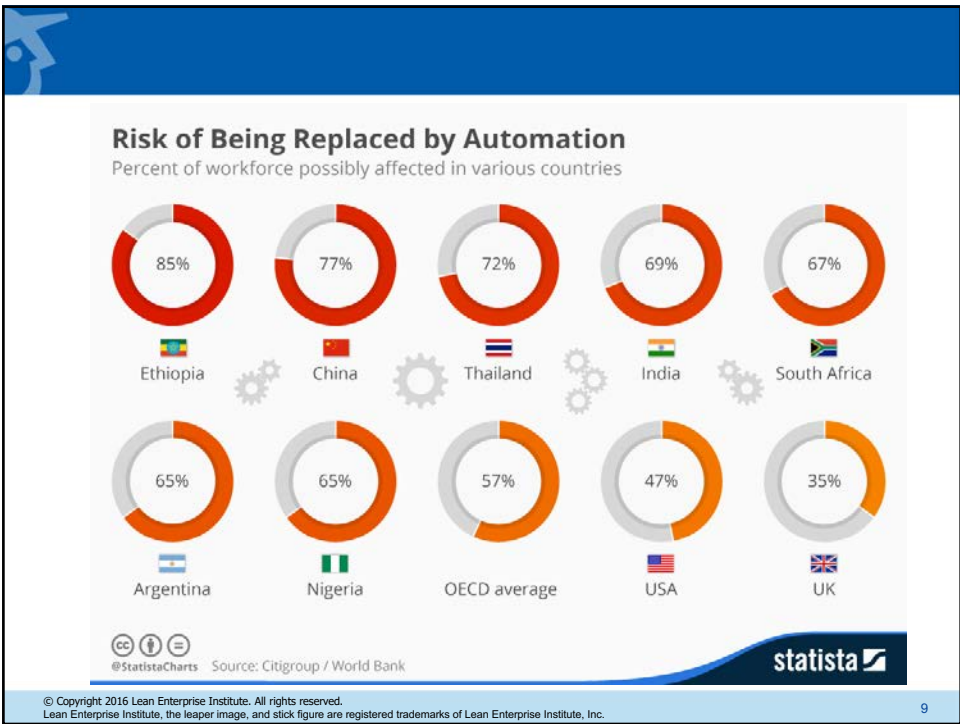
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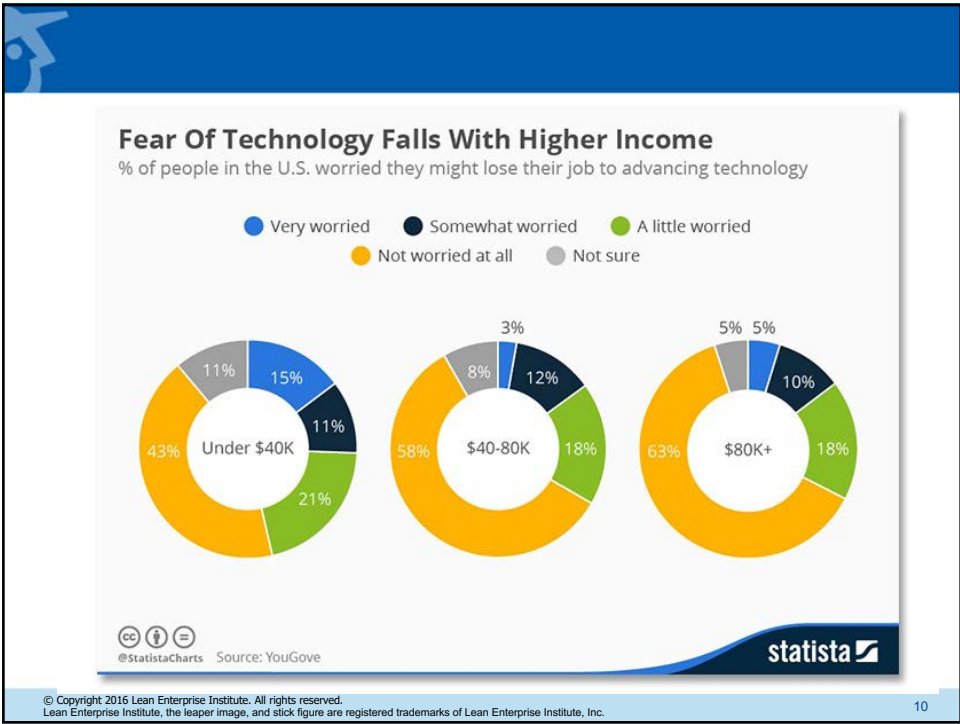
“Two-thirds of Americans believe robots will soon perform most of the work done by humans but 80% also believe their jobs will be unaffected. Time to think again...”

<https://www.theguardian.com/technology/2017/jan/11/robots-jobs-employees-artificial-intelligence>



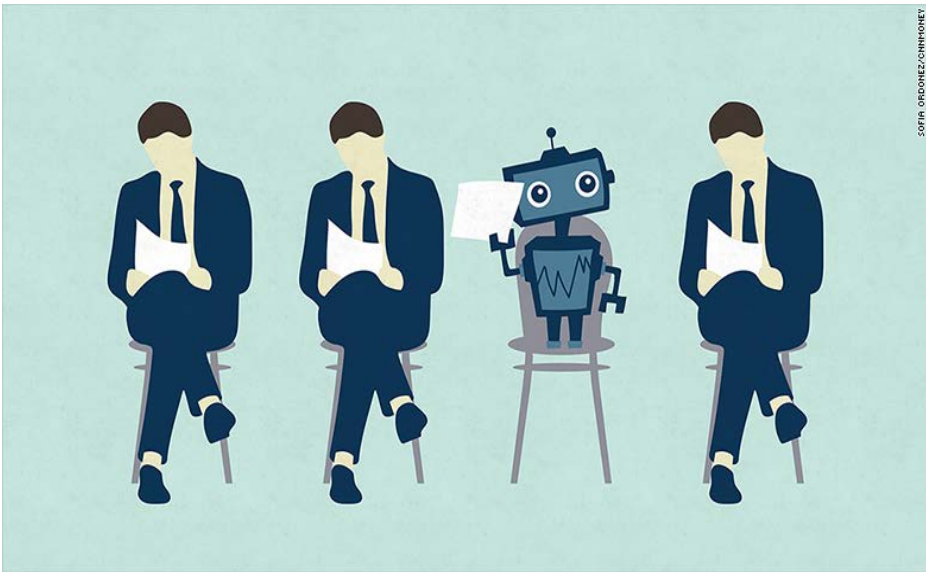


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# Knowledge workers, too...



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SOFIA ORDONEZ/SHUTTERSTOCK



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## Uber drivers making minimum wage...

- Survey #1: Just over half – 54% - of Uber drivers make less than the minimum wage, and 8% of drivers are losing money as Uber drivers
- Survey #2: 41% of Uber drivers make under the minimum wage and 4% are losing money.

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## ...while adding to congestion

N.Y. / REGION

### *Your Uber Car Creates Congestion. Should You Pay a Fee to Ride?*

By WINNIE HU DEC. 26, 2017





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# ...or not?

## Uber Not to Blame for Rise in Manhattan Traffic Congestion, Report Says

By EMMA G. FITZSIMMONS JAN. 15, 2016



### RELATED COVERAGE



City's Delayed Traffic Regulation of Uber V



De Blasio Administra Uber Cap, for Now

While app-based car services like Uber had contributed to overall traffic in Manhattan, a report said, they

# AI is something new:

## AlphaZero AI beats champion chess program after teaching itself in four hours

Google's artificial intelligence sibling DeepMind repurposes Go-playing AI to conquer chess and shogi without aid of human knowledge



▲ AlphaZero's victory is just the latest in a series of computer triumphs over human players since Computer programs have been able to beat the best IBM's Deep Blue defeated Garry Kasparov in 1997. Photograph: 18percentgrey / Alamy/Alamy

AlphaZero, the game-playing AI created by Google sibling DeepMind, has beaten the world's best chess-playing computer program, having taught itself how to play in under four hours.



## Should AI be regulated?



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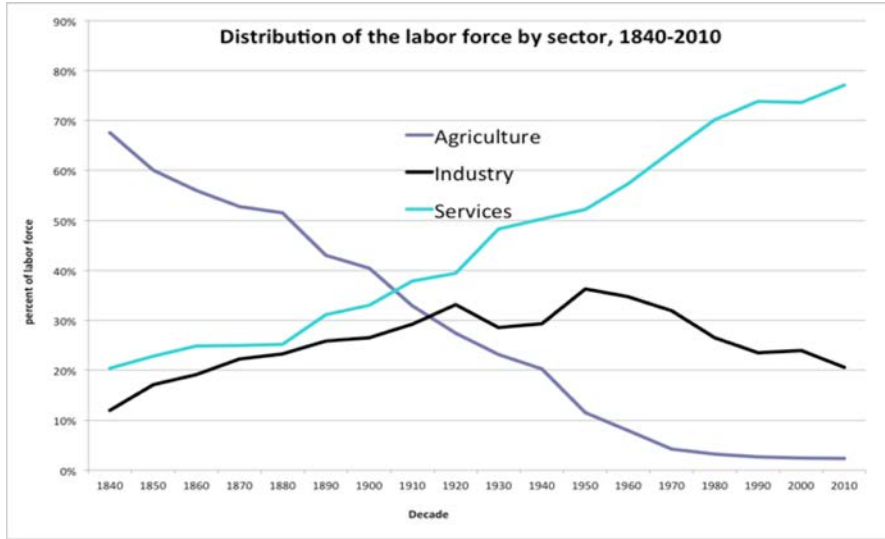
“Automation, Robots, and Job Losses Could  
Make Universal Income a Reality”

<http://fortune.com/2017/05/24/automation-job-loss-universal-income/>

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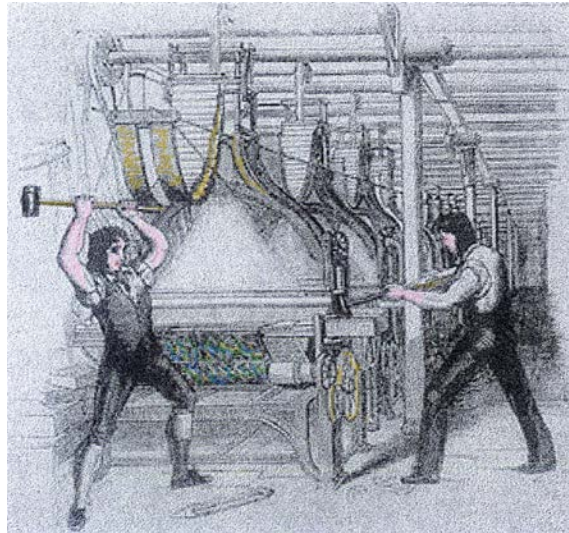
## We've been through this before...



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## An anxiety as old as the machine age:



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## Daniel Susskind:



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## We've been through this before...

“If men learn this, it will implant forgetfulness in their souls; they will cease to exercise memory because they will rely on that which is written.”

- Socrates, 370 BC

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 **We've been through this before...**

“Consider thou what the invention could do to my poor subjects...it would assuredly bring them to ruin by depriving them of employment.”

- Queen Elizabeth I, 1589

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 **Hell...or Utopia?**

Imagine the year 2000, when “working hours are short, the vacations regular, and [work] ceases at forty-five, with the attainment of middle life.”

- Edward Bellamy, Looking Backward, 1888

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## Hell...or Utopia?

By 2030: “Everyone will need to do some work if he is to be contented...but three hours a day is quite enough.”

- John Maynard Keynes, 1930

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## Generation

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Generation:

“All of the people born and living at about the same time”

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Generation:

“A single stage in the development of a type of product or technology”

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Generation:

“The average period, generally considered to be about thirty years, in which children grow up, become adults, and have children of their own”

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Generation:

“The process of coming or bringing into being, as in ‘the *generation* of income”

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Generative:

“Having the power or function of generating, originating, producing, or reproducing”

## This Morning's Speakers



**Kiame Mahaniah, MD**  
*Chief Executive Officer*



**Lori Abrams Berry**  
*Former Chief Executive Officer*



**Matt Cornwell**  
*Lean Customer Value Associate Vice President*



**Michele Wingate**  
*Director of Corporate Communications*