

Human + Machine

Reimagining Work in the Age of AI

Paul Daugherty and James Wilson

We are at the cusp of a major transformation in an era in which the fundamental rules by which we run our organizations are being rewritten daily.

For decades, robots have been chunky big machines, not true anymore, they are much smaller and more flexible now.

Companies are now reaching a cross toad in their use of AI, which we define as systems that extend human capability by sensing, comprehending, acting and learning.

AI can be deployed to automate certain functions, the technology's greater power is in complementing and augmenting human capabilities.

Machines are doing what they do best – performing repetitive tasks, analyzing huge data sets, and handling routine cases.

Humans are doing what they do best – resolving ambiguous information, exercising judgement in difficult cases and dissatisfied customers.

**This interaction between man and machine
is leading to the third wave of business
transformation**

The first wave of standardization involved standardized processes.

The second wave involved automated processes.

The third wave is about adaptive processes.

Popular culture via movies has always promoted a man versus machine view. This view is held by many executives thinking that machines will replace human beings.

Human only activity	Lead Empathize Create judge
Human and machine hybrid activities	Train Explain Sustain Amplify Interact Embody
Machine only activity	Transact Iterate Predict Adapt

We need five principles to deal with this third wave:

1.mindset

2.experimentation

3.leadership

4.data and

5.skills

The AI revolution is not coming, it is already here, and it is about reimagining your processes.

Since 2000, USA has lost 5 million marketing jobs, roughly half of them to efficiency gains in automation

AI is freeing up time, creativity and human capital, letting humans work more like people and less like robots.

AI is taking on the job of warehouse navigation, inventory and changing the way warehouse design is done.

Precision agriculture which leverages AI to get fine grain data on crops, getting improved yield, reduced use of water and fertilizer and increase overall efficiency.

The field of AI was born in 1956, when a bunch of people at Dartmouth college debated how machines could imitate human intelligence

Categorizing customer complaints was a painstaking task done manually, and now done very well by AI

Repetition, replication, redundancy are three key things where AI will step in.

AI technology promises to offload dull tedious tasks to software robots, thus making the office environment more satisfying.

**Thanks to the glut of information,
traditional processes to build products and
services are changing.**

Human researches are very good at creative insight, while machines are better at data organization

Nike used AI and 3D to design sprinting shoes that were light with good spikes. This has potential shave off a tenth of a second, the difference between first and fourth place in the 100 meters race.

Everything from financial services to beer drinking to insurance products can be described digitally today

Increasing availability of customer data is leading to better customization models and delivery models

Philips use AI to predict when bulbs will lose their efficiency which helps them design recycling and replacement and to sell 'light as a service'

Digital mirrors in shopping malls can help understand how much time people take for fitting, the conversion ratio etc.

A retailer used a AI system called Percolata. This tracks customers in the shop, which periods are successful sales periods and allocated salespeople based on that. This improved sales by 10 to 30 %

As we collect more data, we will have challenges with privacy and ethical concerns

Campbell soups works with a data company to make sense of the chatter on social media about their brands.

The truth is that companies can achieve large boosts in performance when humans and machines work together.

Rio Tinto uses AI to control its large fleet of machinery from a central operation. This includes autonomous drills, excavators, earth movers etc.

Rio Tinto's central cell resembles more of a NASA operation and is one of the best digital users. They also failed with driverless trains to ship ore in Australia

**New jobs are created when we start using
AI**

In the past people had to adapt to how computers worked, the reverse is happening now-AI systems are learning to adapt to human beings.

In the future AI will have to play an important role in operating within human, ethical and moral grounds

As a robot becomes lifelike, our affinity to it increases to a certain point. As the robot becomes more like us, then we become intolerant of even a slight mistake.

AI uses data to facilitate better design with better materials. The Elbo chair design is a great example.

Drones are being used to deliver health care on demand in Rwanda.

When people simply accept an existing process and the use AI to automate it, they achieve incremental improvements.

**Change is no longer episodic and human led,
its self adaptive, based on real time input
from humans as well as machines.**

AI can help augment one's own power of observation on trends

In Seattle, there is a convenience store called AmazonGo where consumers come , shop and the bill is directly delivered to their cell phones for payment digitally. This is an experiment Amazon is trying with its own employees as volunteers.

A big leadership challenge is to establish an organizational culture that promotes responsible AI

People are inclined to forgive mistakes from people vs mistakes from robots or automated machines or driverless cars.

Good data is fundamental to AI. Data supply chains must be dynamic and constantly evolving fueled by real time data.

There is fast data and slow data. Data of a natural disaster is fast data and the system must work immediately to save as much as possible from the damage.

A data supply chain requires more than advanced technology and flow of information, it needs organization to design specific roles in middle management

