Should You Hire An Employee, A Robot Or An Algorithm?

Welcome to Human & Robot Resources (HRR) where robots are part of the workforce plan

© Dr John Sullivan
Just like Superman…
HR can’t ignore… “The March Of The Robots”
Five key points for today

1. My goal is to get you to think about the impact of robotics
2. The March of the Robots is a tidal wave that has already begun
3. HR is mostly out of the loop when it comes to robot adoption decisions
4. If HR’s goal is to increase productivity, it must begin to consider all options for getting work done
5. Whether HR gets involved with robots or not, be ready for a firestorm when your employees realize that their jobs are permanently gone
IN CASE YOU MISSED IT...

THE ROBOT REVOLUTION IS ALREADY HERE
Who produces more... humans or robots?

Workers now produce a smaller share of US output

This graph shows workers' share of US output since 1929. Notice that employee income comprises the lowest share since the 1940s.

88% of lost US jobs were taken by robots and other homegrown factors that reduce factories' need for human labor (Source: Christian Science Monitor)
What percent of jobs will robots do?

“Robots will take over approximately 50% of the jobs in the U.S. economy over the course of just a decade or two” - Marshall Brain

"We are approaching a time when machines will be able to outperform humans at almost any task"

Moshe Vardi, Rice University
The demand for robots is increasing
Is your HR currently capable of...

Deciding when robots are better for these jobs?
Drivers are becoming obsolete

Already operating in Pittsburg
Delivery drivers are becoming obsolete

Slurpee delivery in Reno

Domino’s Robot Unit in NZ
Cashiers are becoming obsolete

McDonald's self-service in Australia
Servers are becoming obsolete

Robots server in China
Some **cooks** are becoming obsolete

Zume pizza delivery in SF

56 ovens
Warehouse / inventory jobs are being replaced

Amazon warehouse
Production jobs are being supplemented with CoBots

Baxter factory - CoBots work alongside and do not replace people
Jobs that **answer questions** are going to chatbots and IVR

At Georgia Tech... the TA “Jil Watson” **was a chatbot**
Farmers are being replaced by robots

Robot fruit picker in California
Security, police, fire and military
And don't be fooled...

Professional jobs will also be done by robots
The medical field is a leader in robots

How many med. papers are published a day? 8,000
Watson “sifted through 20 million cancer research papers”
And came up with the proper diagnosis within 10 min.
Watson found something that humans missed 30% of the time
Surgical jobs now go to robots
Some entire store operations will be robotic.
Robots might do every employee job

Café X in SF
NO,
HR CAN’T AFFORD TO WAIT
The Robot Tsunami is coming faster than you think

Be aware… once all Uber cars become driverless…

The Robot Tsunami will accelerate beyond belief
Unique technologies which are likely to replace your employees

- **Phone apps** (the internet is shrinking)
- **Voice recognition apps**
- **Facial recognition** and neuroscience tech
- **Employee tracking** and GPS location devices
- **Chatbots**
- **CoBots** (work alongside employees)
- **Decision algorithms** using AI & machine learning
- **Predictive analytics**
- **Virtual reality**
VISUALIZE ALL THE JOBS AT YOUR FIRM... THAT ARE ALREADY DONE BY ROBOTS
These corporate jobs have mostly been replaced

- Fax / Xerox machine operators
- Travel agents
- Switchboard operators
- Legal / business researchers
- Telemarketers
- Stock traders
- Hotel / airline check-in
- Movie projectionists
- All bank employees (Fintech)
These **HR** jobs have already been replaced by tech

- Org chart drawing specialist
- Payroll pay distributer
- HR call center staff
- Pension manager
- Resume reader / sorter (ATS)
- Personnel record clerk
- HR secretary
- Employment tester
- Benefits information assistant
- In-house reference checker
Is this a future help want ad?

Humans Need Not Apply
HR STRATEGIC ACTION STEPS

Step #1 - Be part of the robot vs. human decisions
Step #2 - Criteria for selecting between them
Step #3 - Handling hostile employee pushback
HR is often already at a disadvantage
(When compared to tech or IT)
Step #1 – Understand why HR has little impact on “tech vs. employee work decisions”

1. HR is often not invited… to discussions on purchasing worker replacing technologies
2. HR has little influence… even when HR is involved and it fights tech… technology usually wins
3. Know both… tech managers argue they know both people and tech… but HR isn’t tech savvy
4. Metrics… robot installations always have metrics quantifying performance… employees don’t
5. ROI… tech departments already calculate the ROI of their installations… HR does not
6. Data on advantages… tech has data showing the advantages of tech… HR has no data on when employees perform better
What’s wrong with people / employees?

1. They want **pay, overtime and benefits**
2. They expect **retirement pay** till they die
3. Higher **minimum wages** make hourly’s expensive
4. They can’t work **24 / 7 / 365** and **in bad weather**
5. A **high error rate** when compared to machines
6. Their **skills go obsolete** & upgrading them is difficult
7. They require a **manager / supervisor**
8. They get **sick**, they are **late and absent**
9. They arrive at work **sleepy, drunk or high**
10. They get **tired, hurt** and they **need breaks**
11. They **steal and** can reveal **company secrets**
12. They **join unions**
13. They **create interpersonal and robot conflicts** >
Advantages of tech over employees

1. Machines have higher level capabilities (Watson)
2. It can do dangerous work in any weather
3. It can do precision work with few errors
4. It can do high level mental calculations better
5. It can do physical work with more strength
6. It can do high volume of work... at low cost
7. It can do work faster and in less time
8. It does continuous repetitive work without tiring
9. Phone app access is 24/7, so it will dominate
10. It can find relationships in seemingly unrelated areas
11. Machines seldom have a steep learning curve
12. Work replacement vendors are everywhere
People may only be superior to technology in a few areas...

1. Innovation – humans come up with most innovations
2. Building relationships
3. Empathy
4. Sales?
5. __________
6. __________
7. __________
8. __________
9. __________
10. __________
Step #2 - You must develop your own Robot vs. Human selection criteria

1. Proof of **performance** improvement or differential
2. Customer / user **resistance** and satisfaction
3. Is the **work strenuous or dangerous?**
4. Tech reliability, capabilities and error rate
5. **Global** capability
6. **Time** to implementation & **probability of failure**
7. Costs and **ROI**
8. **Vendor reliability** & service (vendor selection checklist)
9. The availability of **upgrades**
10. Is decision-making / **adaptability** under crisis needed?
11. Is company specific **innovation required**?
HR must know where the most productivity comes from

- Understanding which employees are more productive
- Calculating when robots are more productive than humans
With fewer employees… you must have the right ones

The top 10% of your employees produce what percentage of the value?

“90% or more of the value on your teams comes from the top 10%”

Source: Laszlo Bock of Google
Which level of employees have the highest ROI?

The Container Store makes hiring top performers its foundation principle.

- We pay great employees up to 100% more than other retailers
- Yes, top employees cost more… but we get… “three times the productivity at two times the payroll cost” (ROI)

Source: Container Store web site
Robots can do **better quality** and **cheaper work**

Changying Precision Technology (China) recently replaced 90% of its workforce with machines

- It used to need **650 workers** to make mobile phones
- Now the factory has 60 robot arms **and only 60 people**
- The change led to “a staggering **250% increase in productivity** and a **80% drop in defects**”
The remaining employees must be special

- Technology employees… will be critical but they will be hard to recruit and retain
- The remaining managers… will have to be able to manage both technology and people
- The remaining employees… must have higher-level tech skills and be top performers… and HR must be able to attract and retain them
- Innovators… will have the highest value, but innovation is difficult in a 6 Sigma world
STEP #3 - HR MUST BE AWARE OF THE HUGE PEOPLE PROBLEMS THAT ROBOTICS CREATE
Permanently unemployed workers will be unhappy

Computers, intelligent machines, and robots seem like the workforce of the future.

And as more and more jobs are replaced by technology, people will have less work to do and ultimately will be sustained by payments from the government

Elon Musk
Are you ready for these people management problems?

- Executives will expect a smooth transition – so HR must have a great plan with metrics
- Employee stress levels – stress will increase as employees and managers fear the uncertainty
- Resistance & sabotage - asking employees to implement tech that will take their jobs may cause stalling & sabotage
- Violence – is possible between impacted and non-impacted employee groups & with installers & managers
- Location tracking – will make workers suspicious
- Unions – existing ones will resist or some new ones will be formed to fight tech replacements
- Managing layoffs – layoffs will be continuous, expensive and difficult with new legal protections
Be prepared to handle a multitude of **people problems**

- **Who will be the future managers?** – because there will be fewer employees in the promotion pool

- **Retention** – the retention of soon to be replaced employees will be difficult, so employment contracts or “stay bonuses” may be needed

- **Surplus physical space** - there will be an excess of real estate after tech implementation (**ghost town**)

- **Bad PR from your conversion** – if there is bad PR, it will mean lost customers and applicants
Why not just **re-train your current workers**?

**Up-skilling employees will be problematic because...**

- The required new tech skills will be so different – many employees simply won’t be able to raise their skill levels
- **Time is critical** – technologies change so rapidly, there may simply be **no time to wait for retraining**
- **Employee interest** – the **burden of re-training** may cause many employees to lose interest
- **Will training work?** – the training will be expensive and there is no guarantee that it will work
- **Firms won’t have the training capabilities** – and by the time the training program is developed, the new technology may already be becoming obsolete
And if re-training isn’t viable... can’t HR just hire the best from the talent market?

What % of all new-hires fail within 18 months?
“46%” (Source: Leadership IQ)

What % of all hourly employees quit or are fired within their first 6 months
“50%” (Source: Humetrics)

What % of management new-hires fail within 18 mths.
“Between 40 and 60%” (Source: Harvard Business Review)

What % of executive new-hires fail within 18 mths”
“Nearly 50%” (Source: The Corporate Leadership Council)
HR IMPLEMENTATION STEPS
Implementation steps for HR

- Put together a human / robot team
- Make a business case for funding
- Benchmark what other companies are doing
- Begin shifting to a data-driven HR
- Meet with the heads of IT and technology
- Form a partnership between the departments that are likely to be considering new technology
- Jointly develop a set of “selection criteria”, integrated processes and performance metrics
- Ensure that new hires are tech savvy (also HR)
- Develop a checklist for assessing tech vendors
Implementation steps for HR

- Measure results and improve your criteria

- Develop an effective **gig hiring** process

- Assume obsolescence within HR - in a VUCA world, HR must adopt an “assumed obsolescence approach” which assumes that all HR programs will likely become obsolete within 18 months
Firms to learn from

- Amazon
- U.S. Army
- IBM (Watson)
- Uber
- Domino’s
- Tesla
- Google
- Mc Donald's
- Home Depot
- BMW uses CoBots (Cooperative robots)
Did I make you think?

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