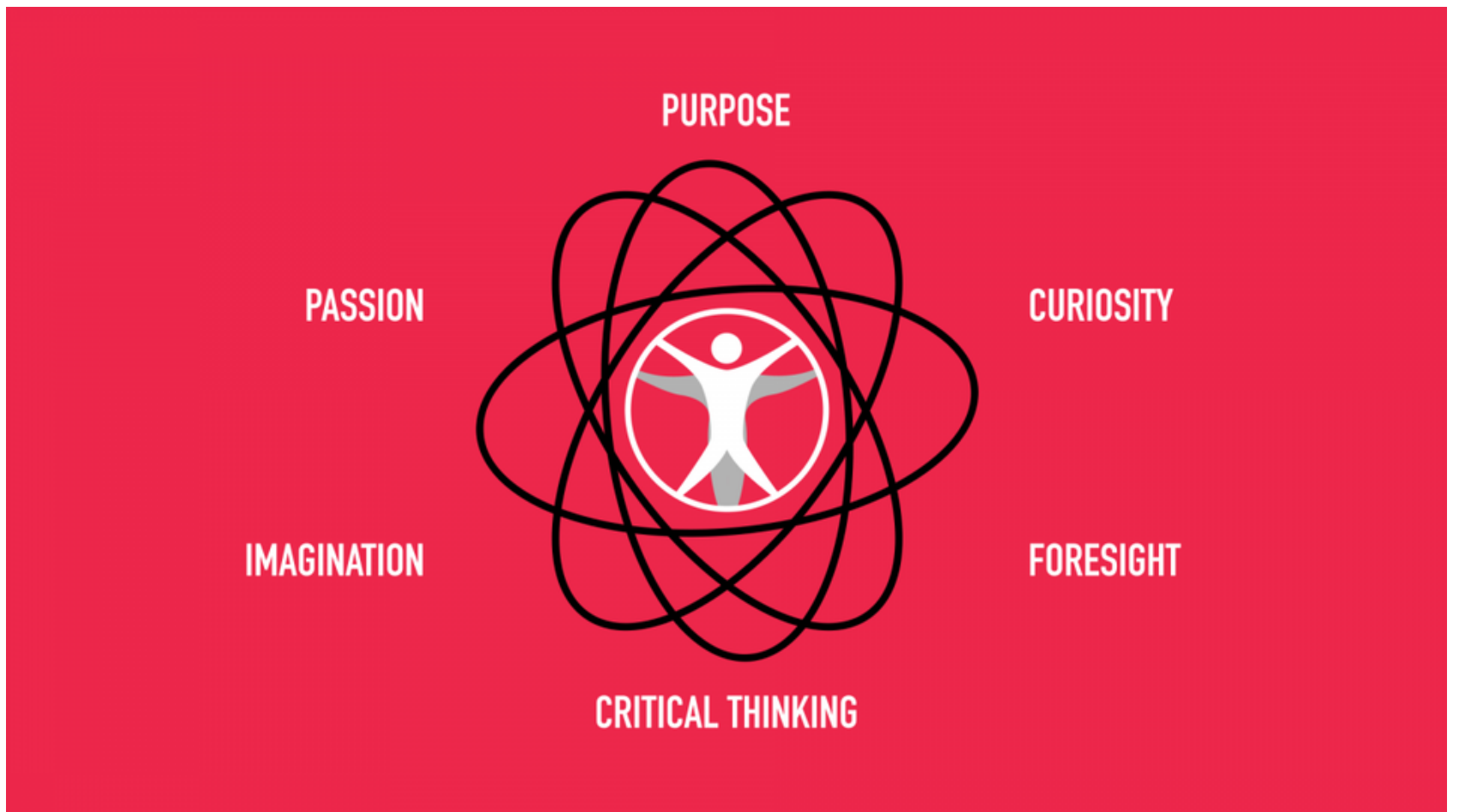


Preparing For Tomorrow's Workforce In A World Run By Machines

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uncaptioned image

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Our increasing fascination with the hyper-performance of machines, smart software and AI is casting a shadow over our elusive and ephemeral ‘human-only skills.’ As our working environments shift dramatically it’s time for a change in our performance metrics, too. My recommendation comes in the form of ‘Key Human Indicators,’ designed to protect and encourage human agency in our future workforces. Let me explain.

The current dialogue around the future of work is dominated by digitisation, cognification, automation and what I describe as the ‘10 Megashifts’ in my recent book *Technology vs Humanity*. (Check out the

free chapter download at www.megashifts.digital.) The conversation, however, rarely considers the humans in this equation. As our job roles inevitably evolve, what kind of work will humans still need to do? And, how will we measure human performance in a machine-led future?

It seems unimaginable that our current performance metrics would stay the same as the world around us evolves exponentially, but today, we are still measuring human performance in a mechanical way. Key Performance Indicators (KPI) such as efficiency, speed, accuracy, lead generation and sales performance are widely used to measure success. Now, consider the wave of workplace game-changers: big data, the cloud, the Internet of Things (IoT), cognitive computing, intelligent assistants and so-called artificial intelligence (AI). These are the things that are propelling us towards a new era of automation, virtualisation and robotization.

Humans 'working like robots' will not be a plausible strategy in the future.

As smart machines and algorithms begin to excel over and above human capacity, we must consider what uniquely human qualities will be needed in the workforce, and how performance metrics will need to shift to encompass this change.

The end of routine

In routine areas that do not require any human ingenuity, creativity, understanding or intuition, the computers are sure to win. These roles might include simple language translation and voice assistants, basic bookkeeping, simple call-center tasks, or the drudgery of fact-checking in legal discovery work. As we look to the next 10 years I believe that many routine tasks will be 60 - 90% automated, with the remaining 10-40% of 'human tasks' likely to be assigned to just a few remaining humans. The call-center makes for the best example here: while it is routine work to reschedule a flight, it is not routine at all to deal with a customer that has had his flight canceled 3 times in a row, and requires some compassion and extra effort that may involve bending the rules.

Riffing off Elbert Hubbard from some 100 years ago (!) - “One machine can do the work of fifty ordinary (wo)men. No machine can do the work of one extraordinary (wo)man.”

As machines start to learn and self-improve, our own work objectives and tasks will change dramatically - yet it is very important to note that the end of routine is NOT the end of human work. (Watch this video to find out more <https://www.youtube.com/watch?v=So6Bojd2avs>.)

I believe that we need to urgently review how we define and measure human ‘performance,’ and go beyond [machine-thinking](#), sometimes also referred to as ‘[computational thinking](#).’ I propose the introduction of what I call the **Key Human Indicators** (KHI) to first complement, and eventually substitute the existing KPIs (Key Performance Indicators) that we rely on so much today. This shift towards valuing, nurturing and measuring **human-only skills** in the workplace is already palpable, as we discuss the concept of EQ (emotional intelligence) over IQ. The bottom line? [Machines don’t do relationships](#) - and success is all about relationships, trust and understanding.

Binary machines, multinary humans

Isn’t being human very much about those exact things that we cannot easily compute, measure or algorithmically define? Machines are binary, for now- zeros and ones, if-this-then-that. So while they may soon be quantum-charged and become unlimited in their processing capacity, their capability to truly *understand* (to intuit a context, comprehend tacit information, hear what hasn’t been said explicitly, deal with ambiguities and much more) is still near-zero compared to humans. I believe it will remain so for the foreseeable future; in fact, this will be the dividing line between narrow AI and general AI/AGI. This does not devalue the importance of what ‘smart machines’ can do for us - quite the contrary!

However, humans are multinary, that is, broadly intelligent (see [Gardner’s 8 intelligences](#)) and are generally capable of dealing with uncertainty and ambiguity. We have no intellectual trouble dealing with mystery and

serendipity, but on the other hand we cannot compute the vast amounts of data that machines will be able to instantly crunch in the very near future. The reality is that soon, we will reach a point where machines will easily exceed us in the mechanical and routine performance metrics that we currently uphold for ourselves. Machines are exponential, and humans are not. This realization is crucial, and we must formulate the new definition of work based upon it.

Super-intelligent machines?

Being human is often equated with traits such as imagination, creativity, empathy, understanding, emotion, passion and intuition. In my recent book [Technology vs Humanity](#), I call these distinctly human idiosyncrasies the '[andrithms](#)' - that is, the opposite of algorithms. While this might seem obvious, soon we must consider whether machines will ever achieve hitherto human-only abilities, or if we should even seek to endow them with something like andrithms? Could bots and AI ever be *more human than human* (as my favorite Bladerunner snippet goes), and then quickly transcend humanity's limitations?

My view is that machines will likely become very good at simulating human traits, in the next decade. They may eventually even do it so well that we'll come to think of them - mistakenly of course! - as fellow humans, even deserving human rights. Yet as all the recent miracles of robotic intelligence and their [real world failures](#) show, even the best AI is still very much trapped in what is best described in the [Chinese Room argument](#). A machine equipped with a really good dictionary can get almost infinitely fast at responding to a short Chinese phrase or word fed to it on one side of his box, and then send the translation to the other side - but it still has no actual understanding of the content it has just processed. It is not aware, nor sentient, nor conscious; it has no agency, no purpose, no existence, and is therefore still only very narrowly intelligent. It does not 'speak Chinese' - it just translates input to output very well.

De-humanize work at your own peril

It's yet another incident of technological reductionism to oversimplify and downplay human factors when sizing up a person's performance and importance in the workplace. There are so many things a machine simply could not know because these are particular 'learnings' that every human immediately understands, and have never been turned into data. Beware of HR analytics or AI-hiring-bots for exactly this reason: they can be useful but they are not 'the truth' by themselves. Hiring a person because they performed well during an AI-led interview is like going to any restaurant just because Tripadvisor recommends it - the real world just isn't that simple!

Your best team member may not be the fastest, nor the most accurate - but they might just have something else that propels them to excel, to sell more, create better, solve smarter or create a great workplace environment. Maybe what makes them more inefficient (as compared to a machine) is also what makes them so important?

Efficiency is for robots – agency is for humans!

Let's face it: people who work like robots will be replaced by, well, robots. The cognification of networked machines and the resulting dramatic rise of virtualisation and automation will be vastly more impactful than industrialisation or globalisation, and in less than fifteen years machines will handle every single task (white collar, blue collar, [gold collar or new collar](#)) that does not require humanness. We must therefore start measuring KHIs not KPIs, and we must remember that the end of routine is NOT the end of human work. We are a lot better than that!

If machines remain emotionally devoid and among the soulless entities (which I believe they will and they should, too) we the non-useless humans must become more emotionally and humanly intelligent. As the machines become exponentially faster with data and information, we must become better with understanding, imagination, intuition, compassion and wisdom.

KPIs measure the past, while KHIs will measure the future.

