



ROBO LEADER

Leadership in the Age of AI

ROBOLEADER

INTRODUCTION:

ROBOLEADER – LEADERSHIP IN THE AGE OF AI AND AUTOMATION

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THE AGE OF AI AND AUTOMATION

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INTRODUCTION:

ROBOLEADER – LEADERSHIP IN THE AGE OF AI AND AUTOMATION

An illustration featuring a stylized brain on the left, with white circuitry lines extending from its right side. Below the brain, a large white circle contains the text '45%'. To the right of the circle, there is a block of text. The background is a solid blue color.

45%

45% of C-Suite Executives and IT Decision-Makers say the AI deployments in their organisation are greatly outpacing the accuracy and productivity of comparable human activity

Infosys AI Report, 2018

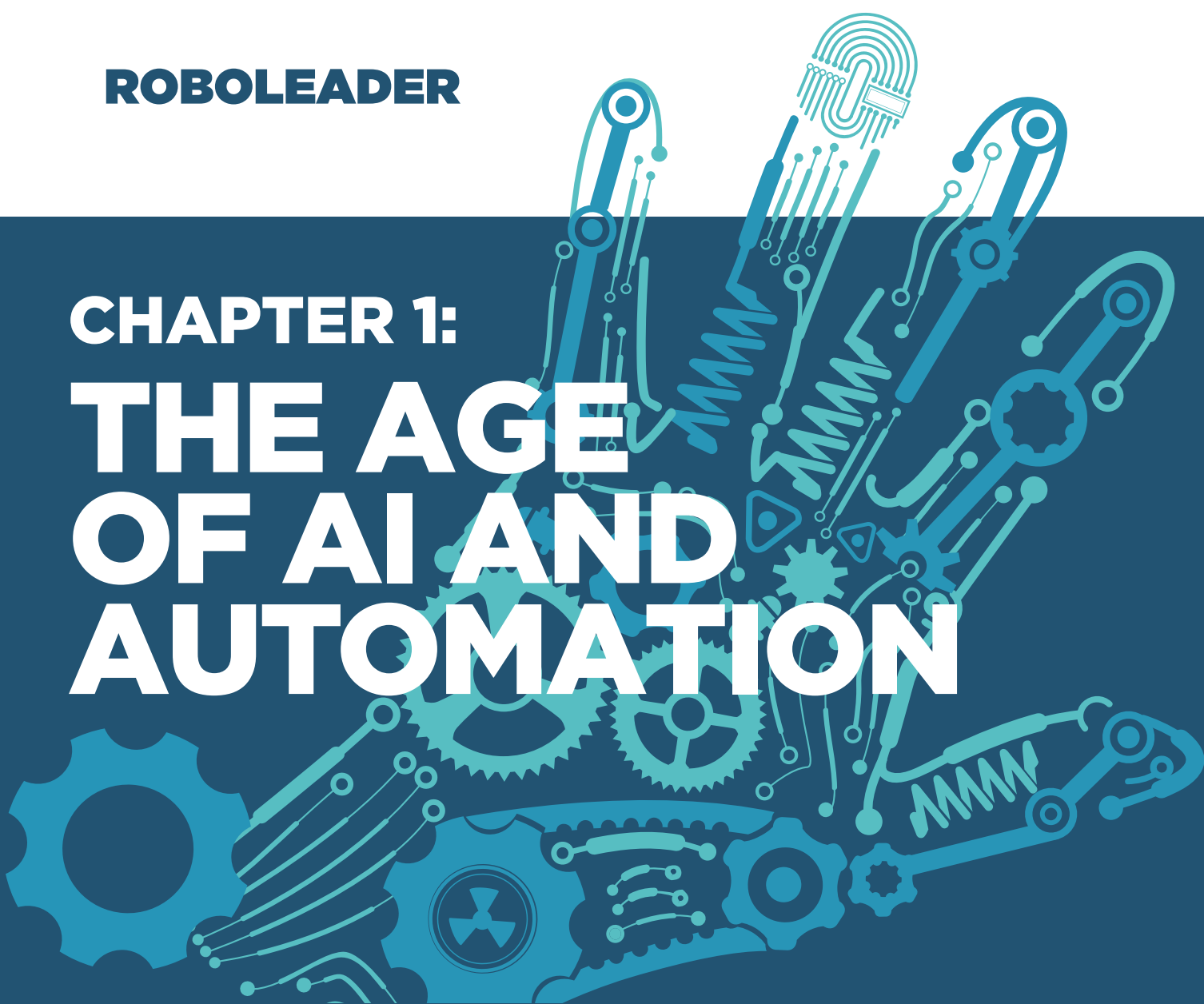
AI is here, but it wasn't what we were expecting.

Growing up, we thought a scientist would flick a switch and suddenly a bundle of wires and circuit boards would spring to life and begin pondering its own existence. We didn't expect that when AI arrived, we would barely notice.

Now, far-sighted leaders realise that AI and automation is going to be one of the fundamental business pillars that will shape how they operate as an executive in the future. It will make or break businesses, destroy and create jobs, and have an impact on nearly every level of our professional and personal lives.

For leaders, what then should they do? As we will see in these Insights, leaders will become even more blended with AI technologies, using it as an asset to improve their own effectiveness. It will enhance our human capabilities, not replace them.

Suit up, it's time to become RoboLeaders.



CHAPTER 1: THE AGE OF AI AND AUTOMATION

CHAPTER 1:

THE AGE OF AI AND AUTOMATION

IS THE AI AGE ALREADY HERE?

AI and automation technologies have already permeated deeply into business functions.

A 2018 McKinsey analysis of several hundred AI use cases found that “that most advanced deep learning techniques deploying artificial neural networks could account for as much as €3 trillion to €5 trillion in annual value, or 40 percent of the value created by all analytics techniques”.

At the same time, many people don't even know they are working with AI solutions.

For example, in the Hospitality and Transport industry, only half (47%) of employees who used AI, realised that they were.



54%

**IT IS PREDICTED THAT WORLDWIDE
SPENDING ON COGNITIVE AND
ARTIFICIAL INTELLIGENCE SYSTEMS
WILL SEE A 54% ON-YEAR JUMP IN
2018 TO €16.4 BILLION – GROWING
TO €45 BILLION IN 2021.**

The International Data Corporation, 2018

CHAPTER 1:

THE AGE OF AI AND AUTOMATION

THE SECTORS MOST AFFECTED

The first industries affected are where AI and Automation can claim some low-hanging fruit, such as retail, transport and logistics, automotive and assembly etc. In retail for example, AI already accounts for around 45% of the total impact derived from analytics, to a value of over \$600 billion.

It's also penetrating deeply into the higher sciences. In the medical field, hundreds of articles and studies have been written about the impact AI is having.

For example, the DeepMind AI system recently developed by the NHS and University College London, is capable of correctly identifying more than 50 types of eye diseases for further treatment with a 94% accuracy – as good or better than the world's leading eye scientists.

These are the industries with big, reliable and replicable data sets. In other words, they are the sectors where similar things happen regularly.



90% OF EXECUTIVES BELIEVE THEIR BUSINESSES ARE BEING DISRUPTED OR REINVENTED BY DIGITAL BUSINESS MODELS, BUT ONLY 30% BELIEVE THEY HAVE THE RIGHT SKILLS.

MIT

CHAPTER 1:

THE AGE OF AI AND AUTOMATION

WHOSE JOB IS IN DANGER?

The truth is, robots aren't coming for our jobs, they are coming for our tasks. Only about 5% of all jobs could be fully replaced by current automated technologies. However, about 50% of tasks carried out by humans in the workplace could be automated.

What impact will this have?

It's been estimated that 15% of the global workforce – around 400 million workers – could be displaced by automation by 2030.

The counter side to this is the jobs created through AI. These same grim job loss scenarios also point to the additional labour demand generated by the AI age – as much as 33% of the current global workforce by 2030 (or roughly 900 million jobs).

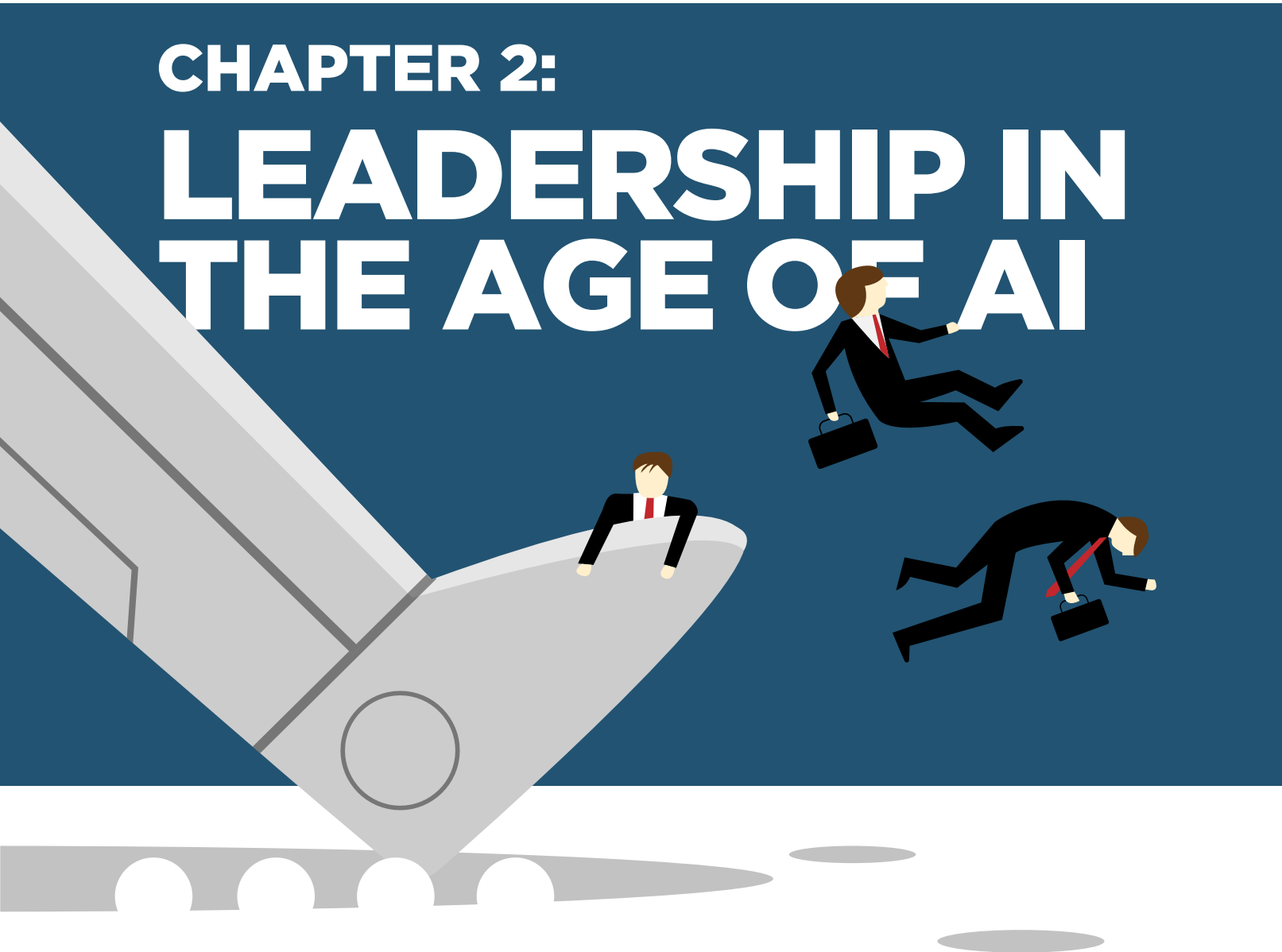
For the average professional, their job will not be replaced but augmented and blended with AI solutions. However, this does point to a major transitional period. What leadership skills will be needed to personally transition into the AI age and ensure that their organisations do the same?

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6
out of 10
**CURRENT
OCCUPATIONS HAVE
MORE THAN 30% OF
ACTIVITIES THAT CAN
BE AUTOMATED**

CHAPTER 2:

**LEADERSHIP IN
THE AGE OF AI**



CHAPTER 2: LEADERSHIP IN THE AGE OF AI

WHAT DO YOU NEED TO THRIVE AS A LEADER?

In any age of disruption and complexity, it is the organisations that have clear, visionary leaders that will survive and thrive. The level of agility that an organisation has is directly correlated to the level of agility their leaders possess, and this flexibility is key to successfully navigating a path through the unknown.

However, this is not unique to the disruption that AI will bring. Leaders will always need agility, focus and resilience against approaching challenges, so we will not focus on developing those characteristics here*.

What then are the specific skills leaders will need in this new age? Does it require skills training or, as is often written, will it be the human elements such as empathy and the ability to collaborate that come out on top?

**ACCORDING TO AN
ACCENTURE SURVEY OF
1,770 MANAGERS (MID-LEVEL,
EXECUTIVE AND FRONT-LINE)
54% OF THEIR TIME WAS SPENT
ON ADMINISTRATIVE TASKS.**

*For more on having a mindset to deal with complexity, go to www.imi.ie/insights and download 'The Mind of a Leader: Unlocking the Performance Mindset'.



CHAPTER 2:

LEADERSHIP IN THE AGE OF AI

WHAT DO YOU NEED TO THRIVE AS A LEADER?

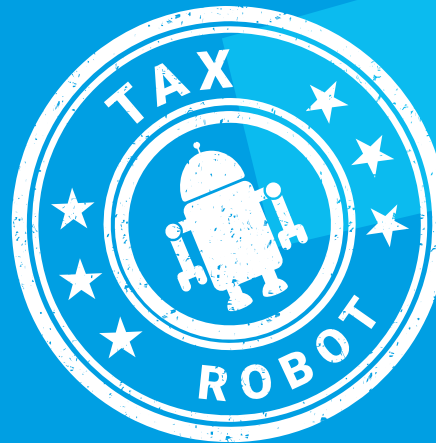
OLD DOGS NEED NEW TRICKS

It's long been established that as professionals move up in seniority, the assets they need to meet the challenges of a complex world become less skills-based and more characteristic-based. A leader doesn't necessarily need to understand every team members' role, but how to make them productive within it.

In the AI age, team members will include robots and machines. And, to get the best out of technologies, you must know its capabilities – just like you need with your human employees.

At the start of the digital revolution, many senior leaders saw it (both hardware and software elements) as an add-on that could be siloed out amongst business functions, rather than what it would become – the new infrastructure through which everything flows.

AI and automation to digitisation is parallel to Google Maps and an old printed roadmap; those that understand the implications and use it to their advantage will get to their destinations much quicker.



39% OF CEOS ARE CONSIDERING THE EFFECT AUTOMATION WILL HAVE ON THEIR WORKFORCE, WITH MORE THAN HALF EXPLORING HOW HUMANS AND MACHINES CAN WORK TOGETHER.

PwC's CEO Survey, 2018

CHAPTER 2:

LEADERSHIP IN THE AGE OF AI

WHAT DO YOU NEED TO THRIVE AS A LEADER?

HUMAN AFTER ALL

With all the exciting possibilities that AI and automation can bring, it's important not to lose focus on what really brings value to businesses – the human element. McKinsey Global Institute estimates that the skills required in the future will be significantly different than today, and the social and emotional skills humans possess will represent a large part of that shift.

For aspiring and established leaders it will be the development of those 'soft-skills' that will translate into hard benefits. It's also indicative of the time that AI will free up for new functions – how would you allocate human resources differently if they were spending significantly less time on administrative tasks?

Total hours worked in Europe and United States, 2015 vs 2030 estimate (billion).



● 2015
○ 2030

Change in hours spent by 2030 (%)



(Source: McKinsey Global Institute Workforce Skills Model; McKinsey Global Institute analysis)

CHAPTER 2:

LEADERSHIP IN THE AGE OF AI

WHAT DO YOU NEED TO THRIVE AS A LEADER?

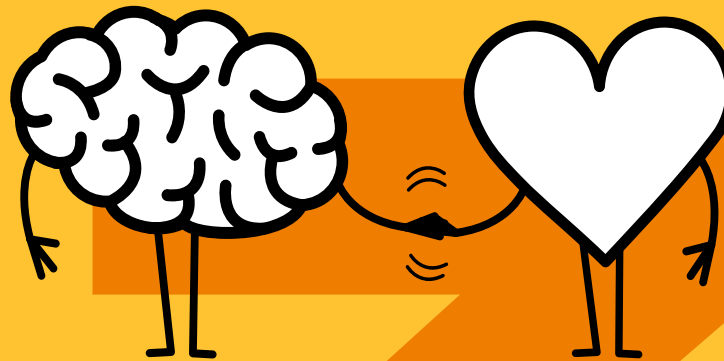
CONTINUOUS DEVELOPMENT

It's estimated that by 2023 FinTech will account for 17% of consumer banking services in North America – a value of \$203 billion. This is an industry being built on the back of AI and automation and is a glimpse into what will happen elsewhere.

The changes we are seeing now may just be the first notes to an opera, and leaders will need to learn the tune as it's being sung. The only way to keep us in continual development, both in specialist areas and in developing human skills – collaboration, empathy, taking initiative, lateral thinking etc, – that will allow us to take advantage of AI and automation functionality.

Side-by-side, leaders will also need to proactively seek out these exciting solutions, and not allow their organisations lag behind as competitors and disruptors take to the field due to a lack of technical knowledge.

Considering the banking sector again, DBS Bank in Singapore began running hackathons in 2014 to change the mindset of their bankers to be more receptive to digital technologies – so far 12 new products have come from these events.



**BY 2030, SKILLS REQUIRED
IN WORK WILL CHANGE.
WORKERS IN THE U.S. AND
EUROPE WILL UTILISE THEIR
SOCIAL AND EMOTIONAL
SKILLS 24% MORE THAN THEY
CURRENTLY DO TODAY.**

McKinsey: AI, Automation and the Future of Work, 2018

CHAPTER 2:

LEADERSHIP IN THE AGE OF AI WHAT DO YOU NEED TO THRIVE AS A LEADER?

EXPERIMENT EARLY AND LEARN TO FAIL

A transformative age requires transformative thinking. It will be up to leaders to encourage the experimentation required within their organisation to bridge the gap between today's thinking and tomorrow's doing.

Failure will be commonplace and may be costly in some instances, but we are all standing on a burning platform, so there is no alternative path to take.

Disrupting, questioning and listening will be key skills for the future-fit leader – you never know where the next experiment may lead.

79%
OF C-LEVEL EXECUTIVES
REPORTED THAT THEIR
ORGANISATION HAS
EXPERIMENTED WITH AI
TECHNOLOGIES AND
SERVICES TO IDENTIFY
POTENTIAL BENEFITS

Infosys AI Report, 2018



CHAPTER 2:

LEADERSHIP IN THE AGE OF AI

WHAT DO YOU NEED TO THRIVE AS A LEADER?

TREAT MACHINES AS COLLEAGUES, AND TALENTS TO HIRE

If we know the machines are coming, then we should consider how they can be integrated into the workforce. In a sense, organisations will need an 'onboarding' process to ensure that machines and humans can work together.

A CEO may find a tantalising new solution that could transform their company, but if they don't have the staff that can interface with the technology and understand how it can be applied to their unique strategic aims, that technology will fail.

Let's take an example from the recruitment industry itself, which is making big leaps in integrating AI technologies with its human staff.

Right now, AI is being heavily used in the recruitment industry to schedule interviews, using AI chatbots to screen and interact with potential candidates, help create better job postings and discover passive job seekers and message them before handing over to the human recruiter.

Indeed, studies have so far proven that these AI applications outperform humans when it comes to picking the right candidate.

This is a prime example of the 'blended professional' – a human working with machines to create efficiencies and better outcomes.

48% OF RESPONDENTS SAID AI HAD AUGMENTED HUMAN SKILLS TO MAKE THEIR PEOPLE BETTER AT THEIR WORK. 45% SAID AI IS MAKING FOR BETTER EMPLOYEES BECAUSE IT FREES THEIR TIME.

Infosys AI Report, 2018

CHAPTER 2:

LEADERSHIP IN THE AGE OF AI WHAT DO YOU NEED TO THRIVE AS A LEADER?

FOR EVERY NEURAL NETWORK, BUILD A SOCIAL NETWORK

Collaboration and facilitation could become a human's prime role in the future workplace. While we have machines working on tasks more efficiently than a human could ever do, the machines will not necessarily have the imagination to apply what they're doing to other areas.

A future-fit leader's role will be to recognise the possibilities in collaboration with two separate processes or entities and facilitating its outcome. In the beginning, it may be linking machine abilities to human needs, finally leading to linking several different machines together for an entirely new purpose.

Social networks will become more and more crucial in this world, while at the same time, the need for social interactions lessen. Every neural network needs a social network to direct it, and the more powerful yours is the more opportunities will arise.

'Our intelligence is what makes us human, and AI is an extension of that quality.'

Yann LeCun,
Chief AI Scientist, Facebook



CHAPTER 2:

LEADERSHIP IN THE AGE OF AI

WHAT DO YOU NEED TO THRIVE AS A LEADER?

BUILD DIVERSIFIED TEAMS (AND DATASETS)

In 2017, 'FaceApp' was launched onto the market and quickly went viral – for all the wrong reasons. One of its features was that, at the click of a button, you could make yourself look 'hotter' in a photo.

Unfortunately, the AI behind the app believed that all that was required to make a person 'hotter' was to lighten their skin tone and make them whiter.

The uproar that followed was understandable, and unconscious bias was the cause. AI had simply been told to examine datasets that were predominately based on images of white people and no-one noticed because the development team itself wasn't diverse, so the question was never asked.

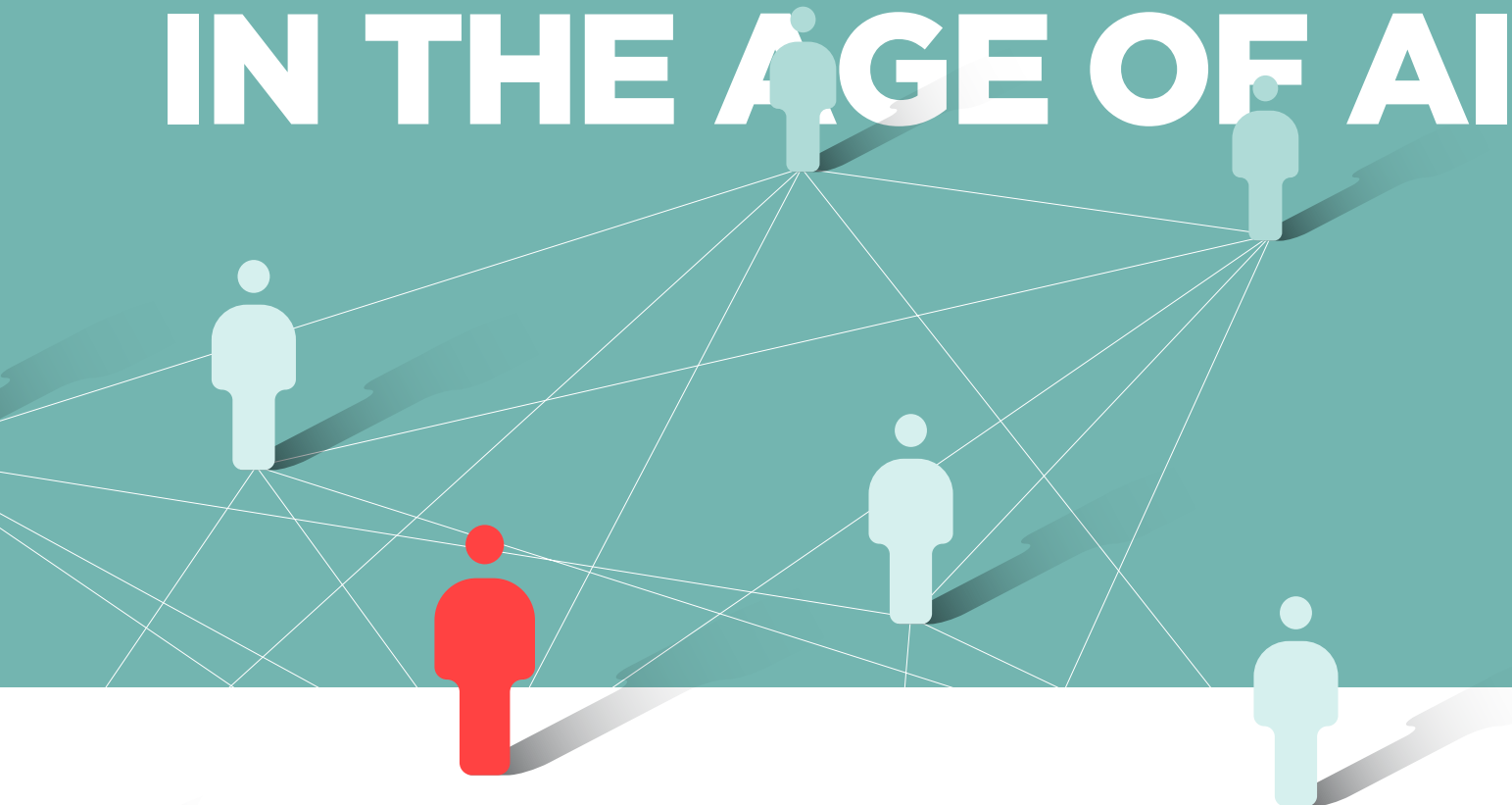
If your teams are not diverse then the work they produce will reflect that, as will the machines that work with them.



*'The key to
artificial
intelligence has
always been the
representation.'*

Jeff Hawkins, Mobile Device Pioneer and Neuroscientist

CHAPTER 3: ORGANISATIONS IN THE AGE OF AI



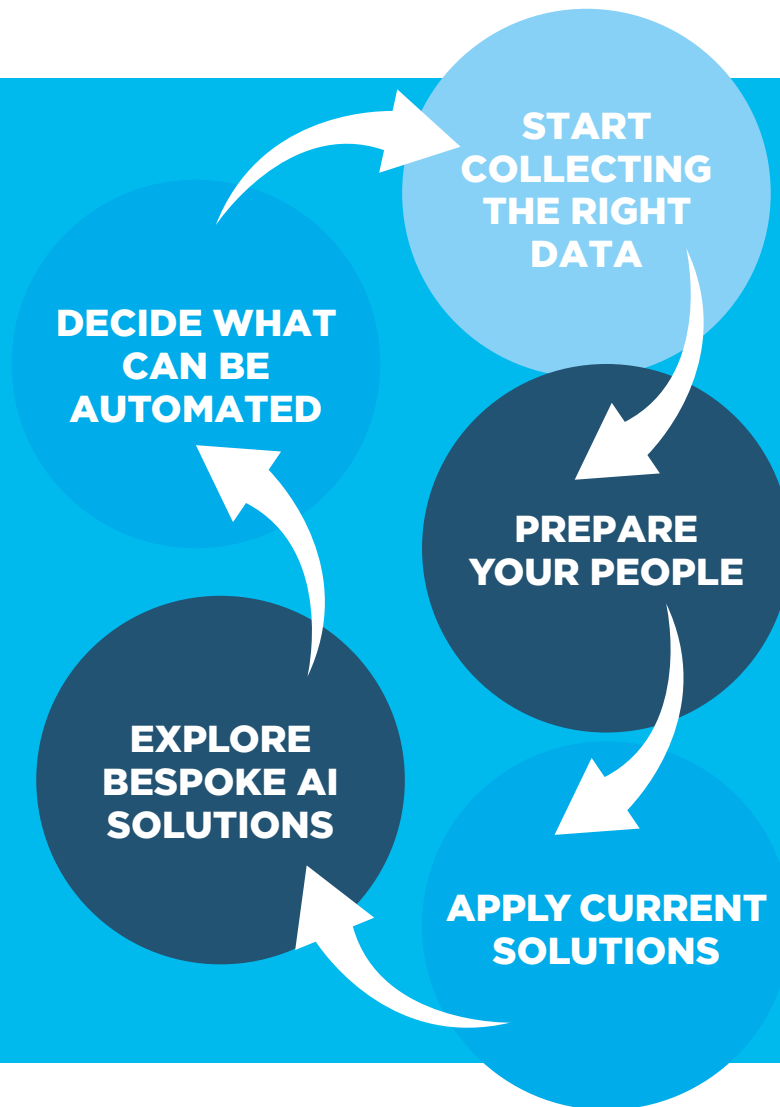
CHAPTER 3: ORGANISATIONS IN THE AGE OF AI

FIVE STEPS IN MAKING YOUR ORGANISATION AI-READY

AS A READER
YOU MAY BE
ASKING ‘OKAY,
SO WHAT NEXT?’

How then can a leader grasp these opportunities? Is this only really for the multinational with teams of AI specialists (relatively rare by the way) or can the average SME utilise AI solutions right now? Should you, if you work for a major multinational, assume that someone is on the case?

Here, we propose five immediate steps a leader can take to make their organisation AI-ready.



CHAPTER 3: ORGANISATIONS IN THE AGE OF AI

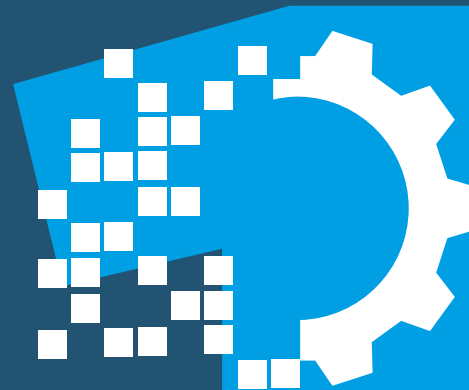
DECIDE WHAT CAN BE AUTOMATED

The first step is deciding what current functions carried out by your business can be automated. By categorising job activities into 'routine' vs 'non-routine' and 'transactional' vs 'consultative' buckets, we get a clear sense of what will be automated in the future.

The activities that are both routine and transactional will be automated first.

A prime example here is automated checkouts at supermarkets – something that has become ubiquitous but not necessarily an obvious solution to a supermarket manager a decade ago.

What are those routine, transactional activities happening in your business right now? Are there off-the-shelf software solutions available to automate those activities? If not, would there be value in a partnership to develop something that could?



73%

**OF ALL RESPONDENTS AGREED
OR STRONGLY AGREED THAT AI
HAS ALREADY TRANSFORMED
THE WAY THEY DO BUSINESS**

Infosys AI Report, 2018



CHAPTER 3: ORGANISATIONS IN THE AGE OF AI

START COLLECTING THE RIGHT DATA

AI and automation rely on data and there is probably no better way of getting your organisation ready for the AI revolution than by examining the data your company collects.

For example, if a machine was able to listen to your sales teams' calls and predict performance, what data would it need to do that?

Good data is the fuel that drives machine learning, and your organisation will find integrating AI and automation in the future a lot easier if you are already collecting the right data.



*'Bad data in,
equals bad
robot out'*

Tom 'the Data Doc' Redman, Data Quality Solutions

CHAPTER 3: ORGANISATIONS IN THE AGE OF AI

PREPARE YOUR PEOPLE

Probably the most crucial thing a leader can do to prepare for the AI age is to prepare their people.

Firstly, creating buy-in is obviously essential. The first thoughts of any employees when they hear 'AI and automation' or 'streamlining' is to naturally wonder whether their jobs are under threat. Through training, honest explanations and continuing communications, employees will see the benefits AI will bring them, not just the dangers.

You will also need new types of people. As the technologies mature, it is reasonable to expect large companies and public services to begin creating job roles that specifically deal with AI and automation functions. The roles currently being created are generally at the top of the tree – Chief Data Officer, Chief Information Officer and Chief AI Officer – but this will inevitably filter down as the technology becomes more widespread.



'By far, the greatest danger of Artificial Intelligence is that people conclude too early that they understand it.'

Eliezer Yudkowsky, American AI researcher

CHAPTER 3: ORGANISATIONS IN THE AGE OF AI

APPLY CURRENT AI SOLUTIONS

The problem with integrating any fundamentally new technology is that they will be replacing systems that probably work quite well already, but could be improved.

Thus, no-one asks the question 'can we do this better?'

This can lead to innovation inertia, which leaves the door open for potential disruptors. If AI is not blended with an organisation like it will be with individuals, that organisation will be weaker for it.

As a starting point, you can look at [this list](#) of the 100 most promising AI firms in 2018, as chosen by research firm CB Insights.

From here, you can begin to see where solutions are being provided right now.

'AI won't hit us in one big bump, it will arrive in a thousand little things. AI will be like the spreadsheet in 5 years' time. We won't be able to comprehend that there was a world without it, and that is huge.'

Paul Daugherty, Accenture's Chief Technology and Innovation Officer



CHAPTER 3:

ORGANISATIONS IN THE AGE OF AI

EXPLORE BESPOKE AI SOLUTIONS

Is there value in creating a bespoke AI solution? The short answer is, at present, probably not. For the typical company, creating a bespoke AI solution would be too costly, with the possibility of failure prohibitively high. For organisations of a certain size and value though, this is already happening on a large scale.

However, examples at a local level are also being seen. In Ireland, CPL Resources (a recruitment company) recently partnered with AI developers to create two bespoke apps for recruiters on the front-line.

'AI has transformed our approach to selecting and placing candidates and improving efficiency' said Ann Heraty, CEO of CPL. 'We're already discussing and developing version 2.0'.

THE QUESTION
'IS THERE VALUE
IN CREATING
A BESPOKE AI
SOLUTION?' MAY
SOON BE AS
REDUNDANT AS THE
QUESTION 'IS THERE
VALUE IN CREATING
A WEBSITE?'.

CONCLUSIONS:

AI came about through the combination of massively increasing computer power, big datasets and the advancements in robotics.

It's not a magic trick, or a robot that has come alive, it's an improvement upon an improvement upon an improvement – multiplied. Even the name – Artificial Intelligence – is really a misnomer. Computers aren't 'intelligent' in the real sense; they are fast.

While the next generation of computers can make inferences, independent observations and even learn autonomously, they are still limited by the imagination of both their builder and their user.

Future-fit leaders will need to act as a bridge between the imagination and this hyper speed of calculation and analysis and become a 'RoboLeader' – someone that can blend their human intelligence, intuition and imagination with AI's incredible abilities.

The robots are coming, so let's learn how to make use of them.

'Some people call this artificial intelligence, but the reality is this technology will enhance us. So instead of artificial intelligence, I think we'll augment our intelligence.'

Ginni Rometty, CEO of IBM



NOTES

