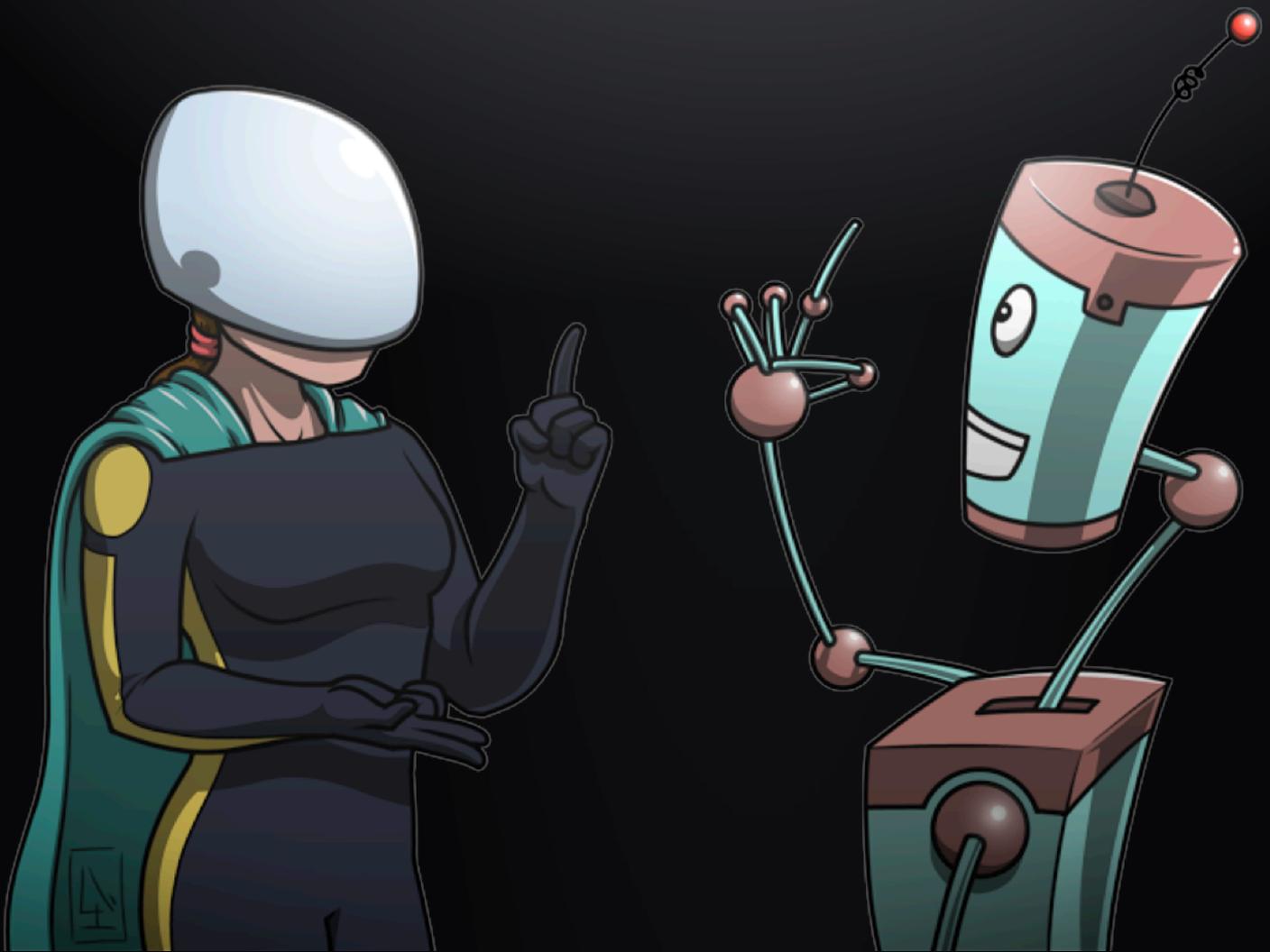


ionology

ARTIFICIAL INTELLIGENCE LEADERSHIP DEVELOPMENT COURSE

PREPARING LEADERS FOR AI
Create an Agile, AI-Enabled Business



COURSE BACKGROUND AND OVERVIEW

The term artificial intelligence was coined in 1955 by John McCarthy, a math professor at Dartmouth who organised the seminal conference on the topic the following year. Ever since, perhaps in part because of its evocative name, the field has given rise to more than its share of fantastic claims and promises.

The biggest advances with AI to date, have been in two broad areas: perception and cognition. In the former category, some of the most practical advances have been made in relation to speech. Voice recognition is almost perfect, millions of people are now using it — think Siri, Alexa, and Google Assistant. The text you are now reading was originally dictated to a computer and transcribed with sufficient accuracy to make it faster than typing.

A study by the Stanford computer scientist James Landay and colleagues found that speech recognition is now about three times as fast, on average, as typing on a cell phone. The error rate, once 8.5%, has dropped to 4.1%. This is around the same error rate of humans. AI is getting better at

correcting these errors too. If you're talking about your cat and voice recognition software heard "stroking its far", most AI systems will now auto-correct to say "stroking its fur". They're starting to get the context in the same way humans auto-correct.

What's striking is that this substantial improvement has come not over the past 10 years but just since the summer of 2016.

The challenge, however, is that AI is useless to many organisations because computers are devices for answering questions, not for posing them. That means entrepreneurs, marketers, innovators, scientists, creators, and other kinds of people who figure out what problems or opportunities to tackle next, or what new territory to explore, will continue to be essential.

The biggest and most important opportunities for human smarts in this new age of super-powerful machine learning lie at the intersection of two areas: figuring out what problems to work on next, and persuading others to tackle them using the defined solution.

This in essence, is the definition of leadership, a skill which is becoming much more important as AI becomes mainstream.

One of machine learning's greatest legacies may well be the creation of a new generation of business executives....The most nimble and adaptable companies and executives will thrive. Organisations that can rapidly sense and respond to opportunities will seize the advantage in the AI-enabled landscape. So the successful strategy is to be willing to experiment and learn quickly. If managers aren't ramping up experiments in the area of machine learning, they aren't doing their job. Over the next decade, AI won't replace managers, but managers who use AI will replace those who don't.

This may sound like high drama and

alarmist, another false promise raised by the technology providers wishing to sell their wares. I recall 20 years ago being at a conference where every speaker said the printed newspaper would be finished within 5 years. I bought my print copy of the Sunday Times this week.

This new wave of technology, however, is different. It will not be on what we call computers. It will be woven into the very fabric of society. The convergence of Internet of Things, robotics, 5G mobile networks, quantum computing and of course self-learning machines is going to replace slow moving conservative businesses. Those that dismiss this impending explosion in new computing resources and how it will fundamentally change business simply haven't researched it. Things are about to change. Leaders need to change.



Strategy and people, empowered by technology, create high performing, digitally transformed business. Artificial Intelligence is the emerging technology that will require a new kind of leadership, understanding and agility.

This course shows Executives how to think and act to leverage AI and create new competitive advantage.

Prof. Niall McKeown
Ionology CEO & Principal Course Facilitator

A LEADERS GUIDE TO ARTIFICIAL INTELLIGENCE

3-DAY COURSE



THE DIGITAL MINDSET

Strategy creates competitive advantage.

People and a culture of innovation sustain it.

Technology and communications are the means by which it is delivered.

Module 1: Mindset - Day 1

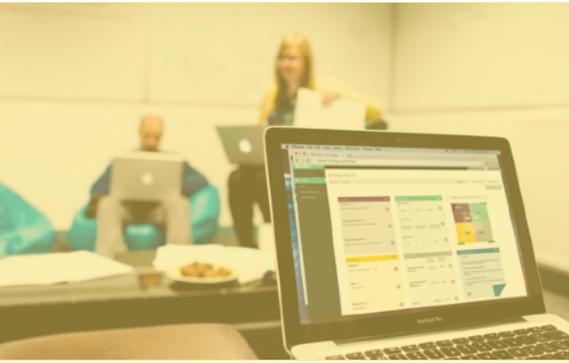
Base Knowledge

- What is Artificial Intelligence (AI)? A broad overview of terms and technology
- What is reinforcement learning?
- What has lead us to this point?
- What are the predictions for the future?
- Who should be involved in an AI project?
- Examining team culture, capabilities and readiness
- What are the 5 misconceptions regarding implementing emerging technologies?
- How could AI impact on my business unit - both negatively and positively?
- What happens to executives and businesses that misunderstand disruption?
- AI - accelerating disruption: opportunities or crisis?
- **Team Practical - You become the CEO of a company being disrupted**

Module 2: Mindset - Day 1

Agile, Practical Leadership

- AI and its use in creating operational efficiency or strategic innovation
- What are the realistic limitations of AI from an executive's perspective?
- What business problems can AI help solve?
- What is Blockchain and IoT?
- What are quantum computers, how do they work, what can they do and how are they likely to impact the way we work in the future?
- Case Study - What impact is AI having on existing industries right now?



PLANNING DAY 2- HOW TO LEVERAGE AI

This is where we create the most value, providing business executives with the practical methods to incorporate AI into strategic planning.

Module 3: Mindset & Planning - Day 2

- **Hands on experiment using AI - OpenAI Gym**
- The 6 key actions a business executive should take to prepare their business, if they want to take advantage of AI.

Module 4: Mindset & Planning - Day 2

Inspiration & Insights

- The morning starts with a presentation called "Creating a culture of innovation"
- A simple way of understanding machine learning vs deep learning
- Case Study - Building an Agile business - A requirement if AI is to be effective
- Case Study - Building an AI powered business
- Case Study - What is outside-in versus inside-out based analysis?
- Case Study - What is data driven decision making?

All of the case studies are projects Ionology has worked on. They examine the use of data science, strategic planning and the use of AI in creating new competitive advantage.

Module 5: Planning - Day 2

AI - Innovation With A Purpose

- What is open, closed and collaborative innovation?
- What industries could your business unit collaborate with?
- What are new and emerging innovative business models?
 - *(customised for your industry)*
- Case Study - Collaborative innovation
 - *(may not be from your industry)*



PLANNING DAY 2

This section we look at understanding the basics of data science and how to link AI with potential commercial outcomes

- How would collaborative innovation work for you?
- **Practical - Build a digital business strategic roadmap using the 7 Principles of Digital Business Strategy**
 - Using data to understand market opportunity
 - Using data to understand customer demand

Module 6: Planning - Day 2

From Data Science to Business Value

- An Executive's starter guide to data science:
 - Probability - The measure of the likelihood that an event will occur
 - Inference - Probability distributions overlap
 - Regression - Estimating the relationships among variables
 - Data wrangling - Making data more appropriate and valuable
 - Data visualisation - Making data usable
- **Practical - Data science basics for business Executives**
- The practical use of analytics
- Outcome based objectives and data driven pivot points
- Linking data with strategic plans.

Module 7: Planning - Day 2

Creating Commercial Outcomes

- How to sell the business value of any new technology initiative
- Reducing risk by building experiments to overcome 'leap-of-faith assumptions'
- The technology and manpower costs - selecting the right AI platform and associated technology + building expert teams
- Create a digital transformation roadmap leveraging AI and other emerging technologies.



DELIVERING ARTIFICIAL INTELLIGENCE

The plans a leader makes are as important as the technology that is used to implement those plans. In this section we merge the plans we've created with practical implementation.

Module 8: Execution - Day 3

An Executive's Guide to Code

- AI platforms explored
- APIs examined
- How business silos kill the flow of oil/data
- **Practical - Experience Python code.** Self-improving AI for a range of purposes. This is for the non-technical Executive - it's not as difficult as you might think!

Module 9: Execution - Day 3

Building Your Own AI

- Case study of how Google reduced their own power usage using AI
- **Build your own AI (part 1): Create an AI game that learns as you play.** This is done through the use of code templates and easy steps for Executives to follow
- **Build your own AI (part 2): Build the brain of a self driving car.** This is done through the use of code templates and easy steps for Executives to follow.

Module 10: Execution - Day 3

An Executives Guide to Rapid Prototyping

- From Leap of Faith Assumptions to experimental evidence
- **Practical - SPRINT: Rapid prototyping leveraging AI and other emerging technologies.** A great merge of leadership skills, problem identification and opportunity creation. This half day workshop pulls together the skills taught earlier

Module 11: Execution - Day 3

Next Steps, Certification and Close

- Conclude experiments
- Review of what has been taught
- Get individuals to create their own action list
- Final Q&A.

CUSTOMISE YOUR COURSE

Artificial Intelligence courses can be customised. This is the process we use to create courses that specifically match your organisational needs.



An assessment of current business strategies, business projects and transformation projects already in progress.



Co-create content for each cohort based on their skills needs and paralleling the strategy of the organisation.



On-premise, live webinars, recorded tutorials and printed materials are all available and can be blended to suit learners.



Engage with leaders to deliver the courses.



Coach leaders ensuring they have sufficient confidence in putting what they have learned into practice.



Software tools to manage and measure the roadmap of change and how it is impacting on the business.

DID YOU KNOW?

Employees want to work for digital leaders. "Across age groups from 22 to 60, the vast majority of respondents want to work for digitally enabled organizations. Employees will be on the lookout for the best digital opportunities, and businesses will have to continually up their digital game to retain and attract them".

MIT Sloan Research Report "**Strategy, Not Technology, Drives Digital Transformation**".

WHY CHOOSE IONOLOGY?

When it comes to leadership courses for Executives in charge of delivering digital transformation and AI, we have the practical methodology for bridging the gap between strategy and action. Leaders will understand how to leverage technology to create new, sustainable, competitive advantage.

We empower organisational leaders on their personal journey

Technology doesn't change an organisation, people do. The role of the leader in digital transformation is the single most important factor determining success and true transformation. We help create the right mindset for digital leadership and show that you don't have to be technical to lead digital transformation or an AI enabled business.

We help you implement effective change with proven, data-driven methodology that unifies action across your organisation

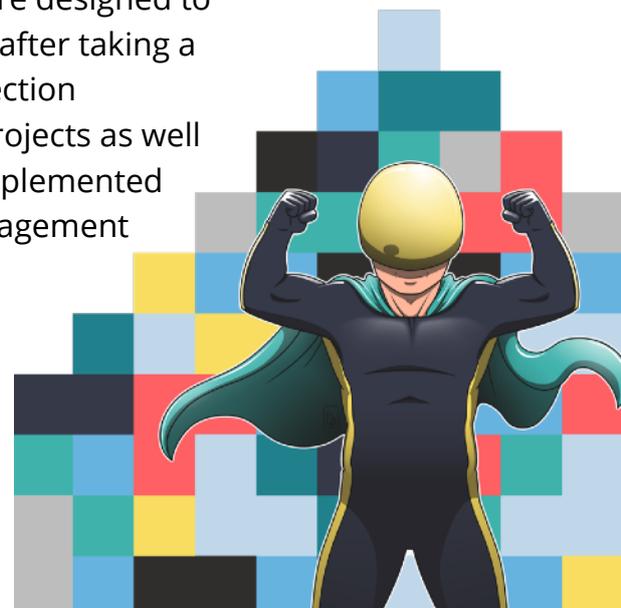
The 7 Principles of Digital Business Strategy is one the most insightful digital business planning tools in existence. The framework is peer reviewed and academically published. It is used by hundreds of commercial and public sector enterprises around the world. Using the framework; leadership, marketing, IT, R&D, sales and innovation are brought together into a coherent, streamlined and more effective team.

The fastest way to prepare an organisation for today's accelerated technology-powered pace of change

Ionology provides rapidly implemented, action-orientated solutions that helps leaders understand the fundamentals of how our economy is changing. While the topics of strategy, culture, innovation, communications, technology and data may seem vast, we have honed all course content from our years of research and application to ensure you get the most important insights quickly.

We offer practical solutions

Implementation is key and our courses and methods are designed to ensure participants can start to use them immediately after taking a course. We help support your transformation with Direction Software that takes care of complex, cross-divisional projects as well as business as usual. Our programmes can also be supplemented with coaching, mentoring and on-demand project management support.





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For more information or to speak with a
course advisor please get in touch
www.ionology.com