ARTIFICIAL INTELLIGENCE
LEADERSHIP DEVELOPMENT COURSES

An Executive Leader's Guide to Artificial Intelligence Course
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 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 it’s heard that you’re “stroking its ‘far’”, most AI systems will now autocorrect that to say “stroking its fur”.

They’re starting to get the context in the same way humans autocorrect.

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 problem or opportunity 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 a lot of people to tackle them and go along with the solutions. This is a decent definition of leadership, 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 offered 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.

This course is designed to help business executives understand the essential role they need to play in order to prepare their business units, to enable them to exploit the power of AI. Artificial Intelligence is not a technology, it’s a way of thinking, of innovating, of creating new value, new market opportunities or even new markets.

The mindset of collaboration, across a multitude of new disciplines is essential, however, deciding what opportunities to chase, that leverage your competitive advantage, is once more a leadership decision, not a technical one.

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**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
5-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 - Morning

Base Knowledge - Morning
- 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 - Afternoon

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?
- 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 3: Mindset (cont) & Planning - Day 2 - Morning

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 I onology has worked on. They examine the use of data science, strategic planning and the use of AI in creating new competitive advantage. There are short practical stop points in each case study requiring teamwork.

Module 4: Planning - Day 2 - Afternoon

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 of collaborative innovation
  - (may not be from your industry)
- How would collaborative innovation work for you?
  - Using data to understand market opportunity
  - Using data to understand customer demand
  - A process for identifying, categorising and prioritising technology enabled experiments inline with the business strategy.
Module 5: Planning - Day 3 - Morning

*From Data Science to Business Value*

- A executives 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 6: Planning - Day 3 - Afternoon

*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. Here executives see first hand, how their decisions are tested and implemented.

Module 7: Execution - Day 4 - Morning

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 8: Execution - Day 4 - Afternoon

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 in days 2 and 3.

Module 9: Execution - Day 5 - Morning

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 5 - Afternoon

Next Steps, Certification and Close

- Finish off experiments
- Review of what has been taught
- Get individuals to create their own action list
- Final Q&A.
Cost of Delivering a 5-day Programme On-Premise

Standard Delivery of 10 Modules - Not Customised

- Price per-person, per-day is $1,000. Therefore a 5 day course is $5,000 per person
- The price is based on a minimum of 10 people attending
- The maximum course size is 20 people
- The course can be split over 2 weeks; a 3-day week and 2-day week, preferred 5 days straight. Extra charges may apply if delivered on separate weeks
- Discount is available should multiple courses be required
- The course includes training materials
- The course does not include room hire. It is assumed that the course would be run in your premises or nearby venue
- The cost does not include travel or accommodation for participants or course coach
- The course must take place in an area where there is internet access. The participants should have their own laptop or iPad
- The Ionology framework (The 7 Principles of Digital Business Strategy) is copyright and can not be reproduced for commercial purposes
- The cost includes online support modules
- Coaching, mentoring and advisory services are available on request.
- Terms are 50% when booking the course and 50% upon delivery
- We are typically have availability three months from placing the order

Leading Course Coach

Prof. Niall McKeown
CEO of Ionology

Founder of Ionology and creator of Ionology's digital transformation frameworks, Niall is a visiting professor at Ulster University. He is also the co-author of the book *The 7 Principles of Digital Business Strategy.*
CUSTOMISE YOUR COURSE

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

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

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

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

**ENGAGE**
Engage with leaders to deliver the courses.

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

**MEASURE**
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”.

WHY CHOOSE IONOLOGY?

When it comes to leadership courses for executives in charge of delivering digital transformation 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.

**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 brings leadership, marketing, IT, R&D, sales and innovation into a coherent, streamlined and more effective team.

**The fastest way to prepare an organisation for today’s accelerated technology-powered pace of change**
This is a rapidly implemented, action-orientated solution 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 the 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 consulting.
For more information or to speak with a course advisor please get in touch
www.ionology.com/contact-us