UNITED ARAB EMIRATES
MINISTRY OF CABINET AFFAIRS & THE FUTURE

# UAE'S FOURTH INDUSTRIAL REVOLUTION STRATEGY

First Edition – September 2017

"We should provide ourselves with modern sciences and far-reaching knowledge. We should seek knowledge with true enthusiasm and honest desire to be able to practice all kinds of constructive work. That will enable the UAE to achieve a significant civilizational transformation in the third millennium."

**His Highness Sheikh Khalifa bin Zayed Al Nahyan**
**The President of the United Arab Emirates**

"We believe that science, technology and innovation represent the roadmap for building future generations."

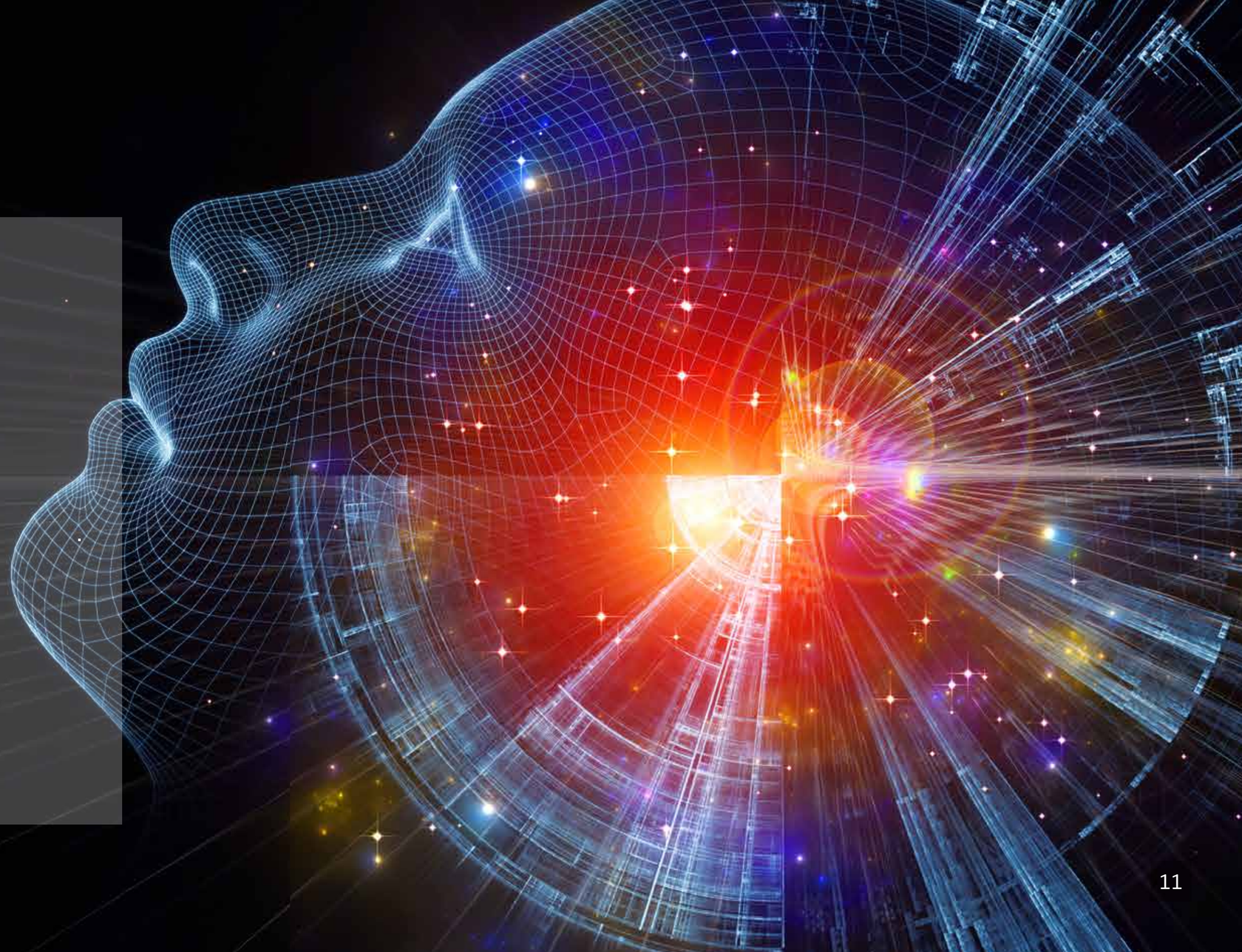
**His Highness Sheikh Mohammed bin Rashid Al Maktoum**
**Vice President, Prime Minister of the UAE and Ruler of Dubai**

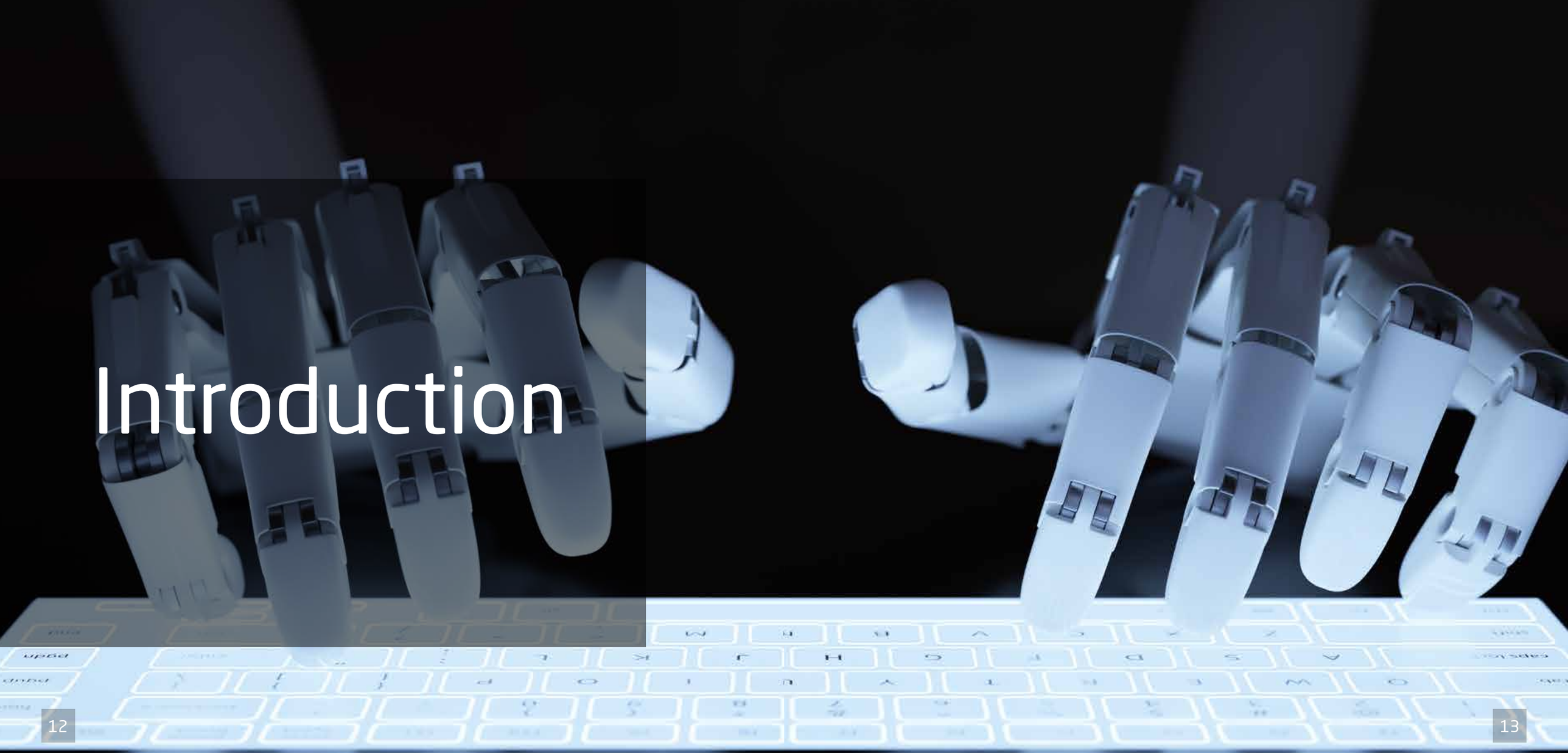
> Our reliance upon knowledge and scientific thinking to achieve total development is the only way to bring our nation ahead to the stage of qualitative, non-oil production.

**His Highness Sheikh Mohammed bin Zayed Al Nahyan**
**Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces**

# Table of Contents







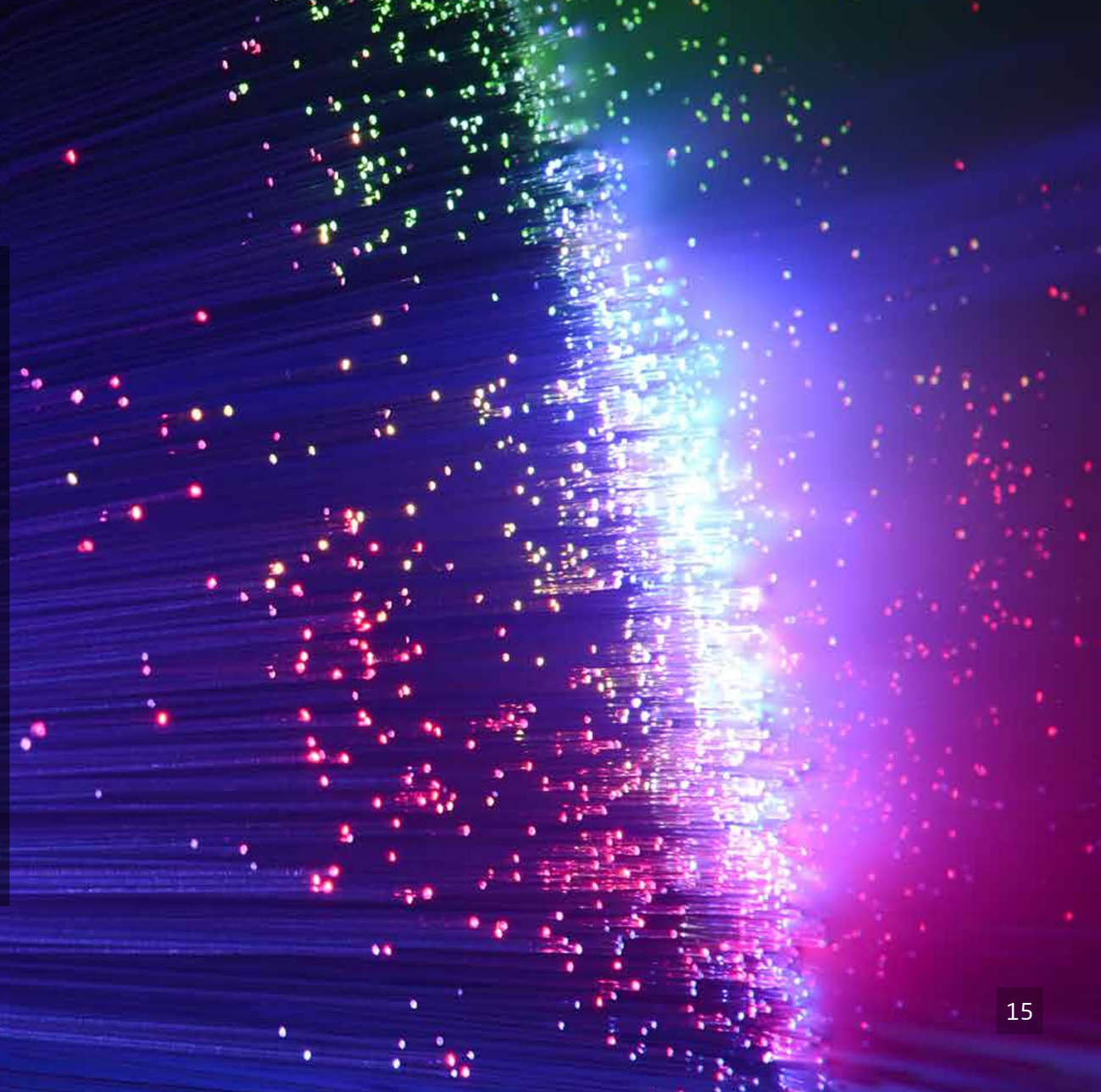
# Introduction

# Introduction

The Fourth Industrial Revolution marks a significant and impactful milestone in the future of the United Arab Emirates. It offers both unprecedented opportunities and several challenges that should be addressed and utilized efficiently. Therefore, the UAE is stepping up its efforts at an accelerated rate in order to become a hub and the world's first open lab for experimenting and adopting the Fourth Industrial Revolution's technologies.

The UAE's Fourth Industrial Revolution Strategy, the first of its kind globally, was designed to provide a practical framework for policy makers and support national efforts in adopting advanced technologies and transforming future challenges into opportunities that better serve the country.

Ministry of Cabinet Affairs and the Future



# Fourth Industrial Revolution

## What is the Fourth Industrial Revolution?

A technological revolution that merges the physical, digital and biological technologies in order to deliver unprecedented products and services in new and emerging sectors.

### Physical Technology

Easiest technology to identify due to its tangible nature (e.g., autonomous vehicles and advanced robotics)

### Digital Technology

Data-based technologies that connects our physical world (e.g., Internet of things)

### Biological Technology

Technologies based on genetics, genomics and genetic engineering (e.g., Curing chronic diseases through developing personalized medicines based on genetic mapping of individuals)



# Fourth Industrial Revolution Characteristics


### Speed:

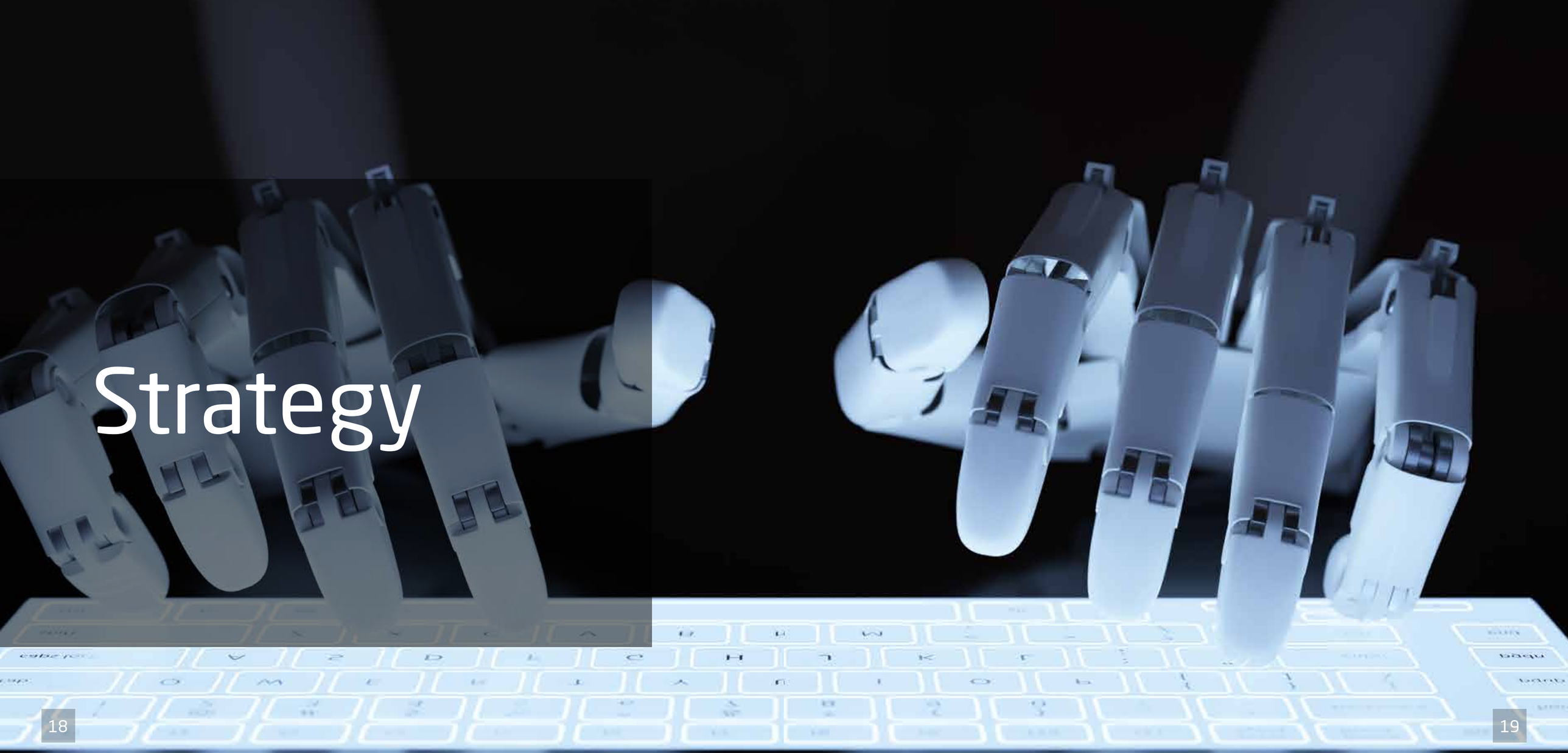
Exponential and unprecedented advancements

### Scope:

The Fourth Industrial Revolution will affect all current and future sectors

### Impact:

A large-scale and comprehensive transformation in all systems

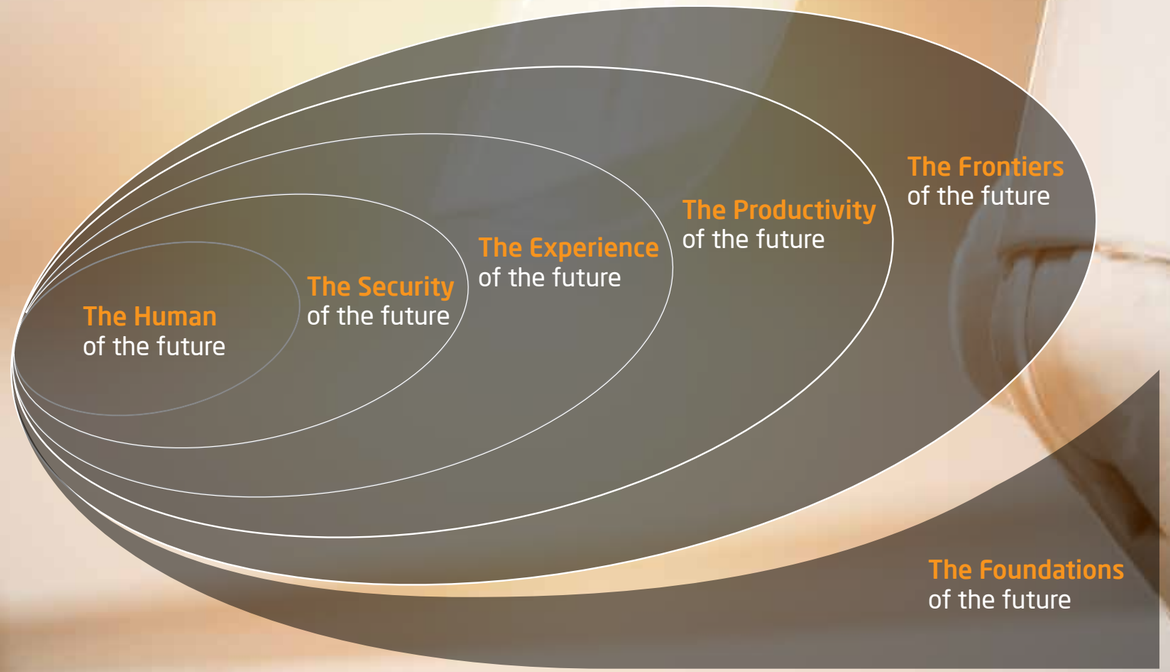

Strategy

# Vision

**To become a leading global hub and an open lab for the Fourth Industrial Revolution's applications**

# Scope

## The UAE's Fourth Industrial Revolution Strategy Framework comprises of 6 pillars:



# The Human of the future

## Strategic Areas

### 1 - Augmented Learning

Develop a leading dynamic and intelligent augmented learning experience to improve education outcomes and meet the new requirements of the Fourth Industrial Revolution to focus on advanced sciences and technologies (e.g., bioengineering, Nano-technology and Artificial Intelligence).

### 2 - Personalized Medicine

Drive the development of a hyper-personalized, intelligent genomics hub to dramatically improve the population's health and promote genomic medical tourism.

### 3 - Robo-Care

Harness clinical cobots and nanobots to augment the UAE's healthcare capabilities and provide remote robotic medical services inside the UAE and abroad.

### 4 - Connected Care

Drive the advancement and adoption of Connected Care in the UAE to provide intelligent healthcare interventions through wearable and implantable technologies.

# The Security of the future

## Strategic Areas

**5 - Food and Water Security**
Develop a sustainable food and water ecosystem by leveraging bioengineering, advanced sciences and technologies as well as renewable energy.

**6 - Economic Security**
Adopt digital economy technologies (e.g. blockchain) to future-proof the UAE's financial ecosystem.

**7 - Space Data**
Employing space data and technologies to make intelligent and strategic decisions.

**8 - Advanced Defense Manufacturing**
Augment the UAE's advanced defense manufacturing capabilities with collaborative robots and cognitive technologies to ensure a safe and protected future.

# The Experience of the future

## Strategic Areas

**9 - Intelligent Government Services**
Deliver the world's best intelligent, seamless and citizen-centric government services that boosts the happiness and wellbeing of customers.

**10 - Intelligent Consumer Experience**
Deliver an intelligent, hyper-personalized retail and hospitality experience to make the UAE the world's leading destination for consumers.

**11 - Intelligent Cities**
Become the world's powerhouse for intelligent cities and premises to improve environmental sustainability and enhance the human lifestyle.

**12 - NextGen Mobility**
Become the world's open lab for autonomous and sustainable mobility to lead the innovations in transportation.

# The Productivity of the future

## Strategic Areas

### 13 - Open Additive Manufacturing

Focus on designing and programming 3-D additive design and manufacturing technologies to unlock the competitive potential of the UAE economy and entrepreneurs globally.

### 14 - 3D Printed Construction

Become the world's center of excellence in 3D printed and robotic construction to deliver sustainable value for the economy.

### 15 - Intelligent Grids

Pioneer future grids to enable decentralized energy generation, sustainable consumption, and intelligent asset management.

### 16 - Intelligent Supply Chains

Develop the world's next generation intelligent terminals and logistics ecosystem to maximize productivity in a sustainable manner.

# The Frontiers of the future

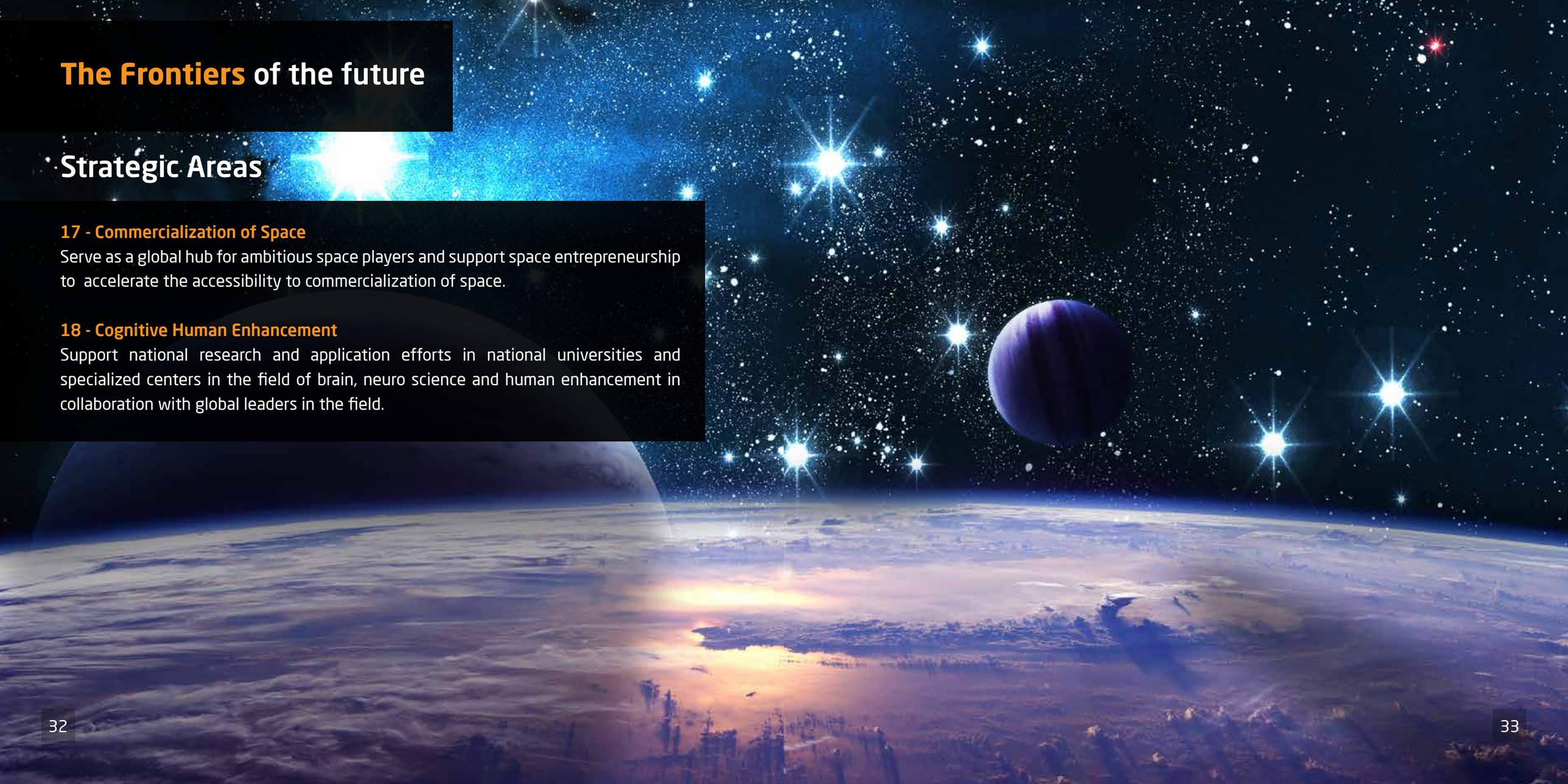
## Strategic Areas

### 17 - Commercialization of Space

Serve as a global hub for ambitious space players and support space entrepreneurship to accelerate the accessibility to commercialization of space.

### 18 - Cognitive Human Enhancement

Support national research and application efforts in national universities and specialized centers in the field of brain, neuro science and human enhancement in collaboration with global leaders in the field.



# The Foundations of the future

## Strategic Areas

### I - Future Talent
Prepare a national talent pool and entrepreneurs for the Fourth Industrial Revolution and equip them with the required knowledge and skills in advanced science and technology through an applied educational system focused on innovation and entrepreneurship in the high priority sectors.

### II - Integrated cyber secured data Environment
Build an integrated cyber-secured big data environment equipped with intelligent connectivity and develop the necessary protocols to protect it.

### III - 4IR Policies & Regulations
Develop conducive and innovative policies and regulations that cover the Fourth Industrial Revolution's themes and applications to ensure maintaining the privacy and well-being of citizens.

### IV - 4IR Values and Ethics
Cultivate steadfast values and ethics in the future generations to ensure making the optimal use of the Fourth Industrial Revolution and steadily facing its challenges.

### IIV - Global 4IR Hub
Create a global 4IR hub to promote a competitive national economy based on knowledge, innovation and the 4IR technologies and applications.