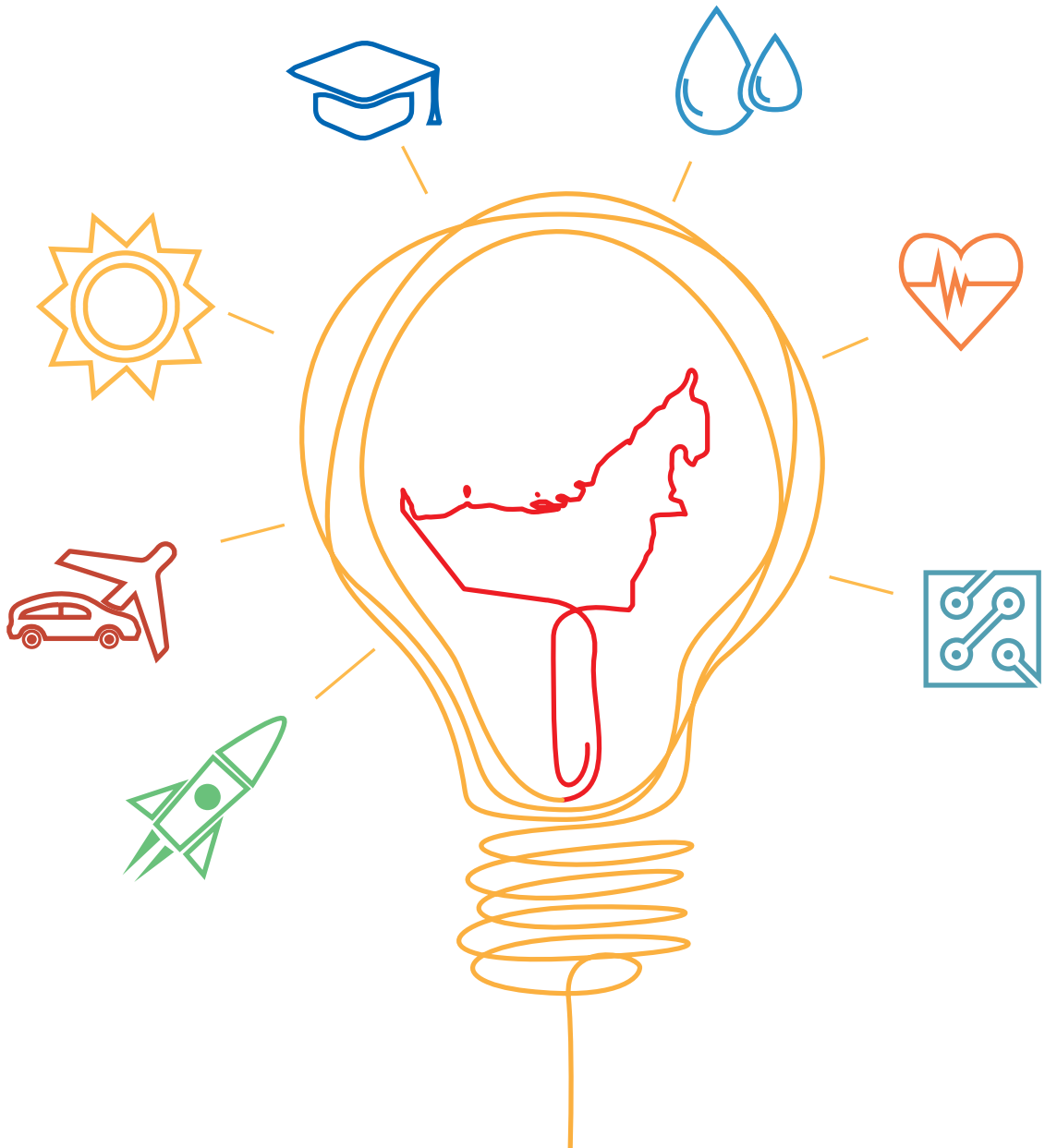
United Arab Emirates

UAE NATIONAL INNOVATION STRATEGY



UNITED ARAB EMIRATES
MINISTRY OF CABINET AFFAIRS
PRIME MINISTER'S OFFICE

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UAE National Innovation Strategy

Introduction

Recognizing innovation as a cornerstone of social and economic development, nations around the world have set about to develop national innovation strategies and frameworks.

Innovation is defined as the aspiration of individuals, private institutions and governments to achieve development by generating creative ideas and introducing new products, services and operations that improve the overall quality of life. Innovation is key to promoting economic growth, increasing competitiveness and providing new job opportunities.

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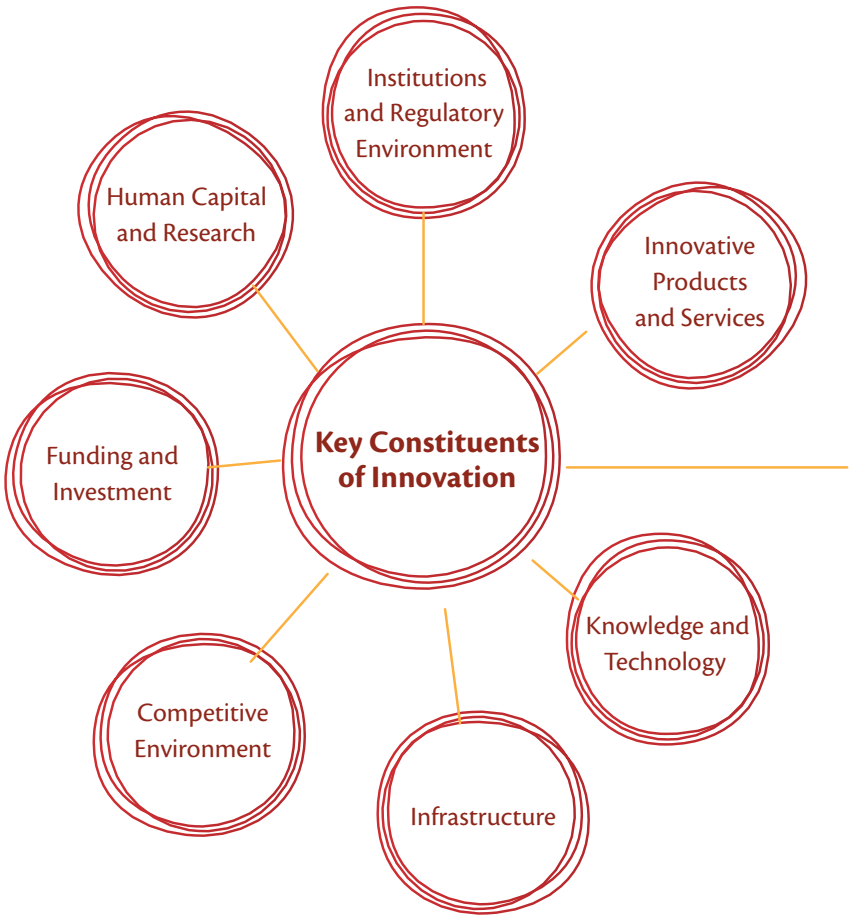


Innovation is essential to:

- Improving the quality of life
- Increasing economic diversification
- Enhancing knowledge economy
- Improving competitiveness
- Creating high skilled jobs
- Promoting entrepreneurship

Since its inception in 1971, the United Arab Emirates has constantly been distinguished as an icon for innovation and creativity, enhancing its social and economic status and transforming into a primary destination for talents and businesses in record time.

Believing that innovation is the future of human investment, the UAE Leadership emphasizes its importance across all sectors through the UAE Vision 2021: "Innovation, research, science and technology will form the pillars of a knowledge-based, highly productive and competitive economy, driven by entrepreneurs in a business-friendly environment where public and private sectors form effective partnerships."

Emanating from its strong belief that building a human capital is far more critical than urban development, the UAE is keen on creating a wealth of human resources capable of meeting the country's aspirations of development across various sectors. The UAE distinctly demonstrates its ability to attract and retain top talent by becoming a primary destination for educated Arab youth seeking a better professional and personal life, besides ranking first worldwide in attracting global talent.

Over the past few decades, the UAE's efforts have culminated in its ranking first among the Middle East and North African countries and 36th globally among 143 countries in terms of performance in the 2014 Global Innovation Index. The UAE's total investment in innovation is estimated at AED14 billion yearly, AED7 billion of which are allocated for Research and Development.

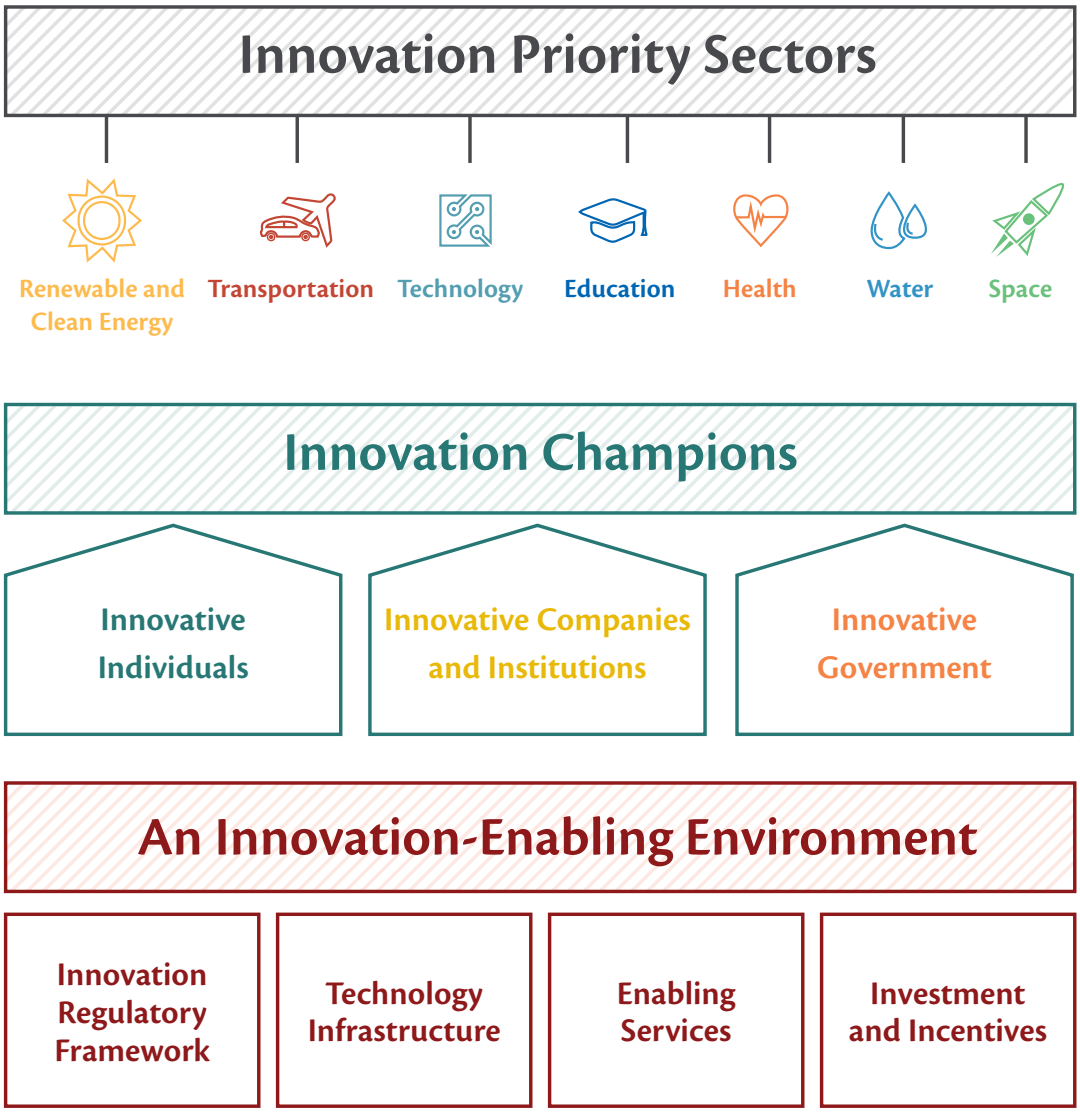
H.H. Sheikh Mohammed bin Rashid Al Maktoum, UAE Vice President, Prime Minister and Ruler of Dubai, launched the National Innovation Strategy to sustain the UAE's leading position in the region and realise its ambition of becoming one of the most innovative nations in the world.

Strategy

The National Innovation Strategy (NIS) aims to take innovation in the UAE to new heights, where a culture of innovation is embedded amongst individuals, companies and governments. It primarily focuses on identified priority sectors that will drive future innovation.

The NIS Framework is structured around the following key pillars:

1. An Innovation-Enabling Environment
2. Innovation Champions
3. Innovation Priority Sectors



An Innovation-Enabling Environment

Creating the right environment for innovation is key to the success of innovative endeavors. It sets the context in which individuals, companies and governments work, and indicates a nation's ability to attract investments and innovative ideas. The NIS seeks to develop an environment that promotes and enables innovation by developing the right regulatory framework, providing comprehensive enabling services, enhancing the technology infrastructure and ensuring the availability of investments and incentives.

Innovation Regulatory Framework

An ideal environment for innovation is underpinned by supporting laws and regulatory frameworks. The NIS seeks to establish the innovation regulatory framework by developing rules and regulations that promote innovation, allowing for the rapid enactment of relevant legislations. It aims as well to design efficient and effective patent registration procedures, while raising awareness of the importance of intellectual property rights and the best methods to protect those rights.

Enabling Services

High quality education is a distinctive feature of developed countries that rank high on innovation indices. Hence, the NIS is dedicated to building a first-rate education system as a foundation for innovation. It aims as well to promote research and development across universities, besides incentivizing innovation and entrepreneurship incubators to sponsor and assist innovators in transforming their ideas into leading projects. Such incubators will foster a culture of innovation by providing innovators with supportive counseling, training, and administrative support services, while promoting and funding their innovations by ensuring them access to a global network of potential business partners.

Technology Infrastructure

Innovation is enabled by a technology infrastructure that supports the generation, dissemination and retention of knowledge needed by innovators. Hence, the NIS aims to ensure the best technology infrastructure that enables effective channels of communication and promotes innovation amongst individuals, companies and governments. The NIS will ensure competitive and cost effective technology infrastructure, and will provide as well innovative solutions to ensure the optimal use of information and communications technology in acquiring and sharing knowledge amongst universities, research institutions and innovation incubators.

Investment and Incentives

Investing in generating innovative ideas and turning them into new products and services is a prerequisite for innovation. The NIS seeks to introduce new innovative funding options that meet the needs of both individuals and companies. While an advanced financial system is one of the key elements of an innovative culture, financial rules and regulations will be revisited to ensure their effectiveness in securing various funding options and promoting innovative ideas.

Innovation Regulatory Framework

- Develop motivational legislations and regulatory environment
- Establish efficient and effective patent registration procedures
- Raise awareness on intellectual property rights

Enabling Services

- Develop a first-rate education system
- Focus on research and development at universities
- Promote innovation and entrepreneurship incubators

Technology Infrastructure

- Set up a first-class technology infrastructure that enables innovation
- Ensure the optimal use of Information and Communications Technology in acquiring, disseminating and sharing knowledge to promote innovation
- Ensure competitive and cost effective technology infrastructure

Investment and Incentives

- Provide new innovative funding options that meet the needs of both individuals and companies
- Develop relevant financial laws and regulations

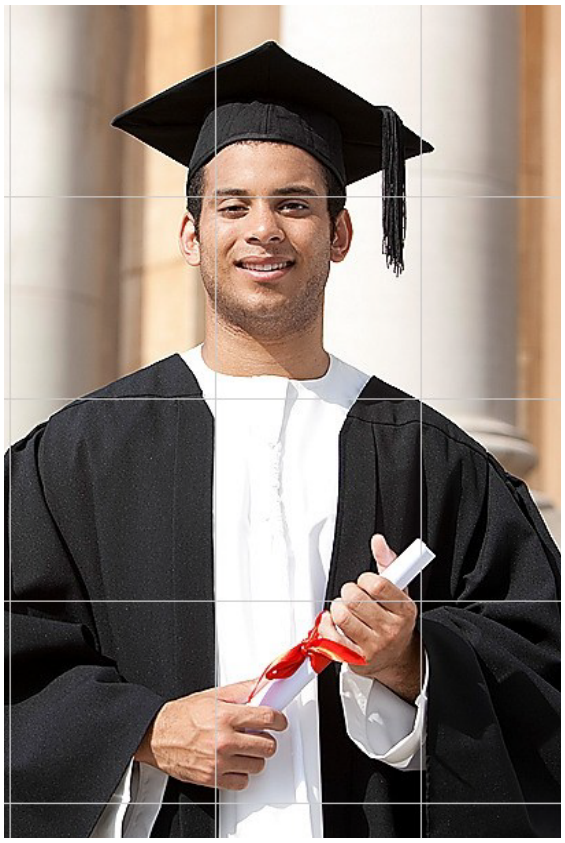
Innovation Champions

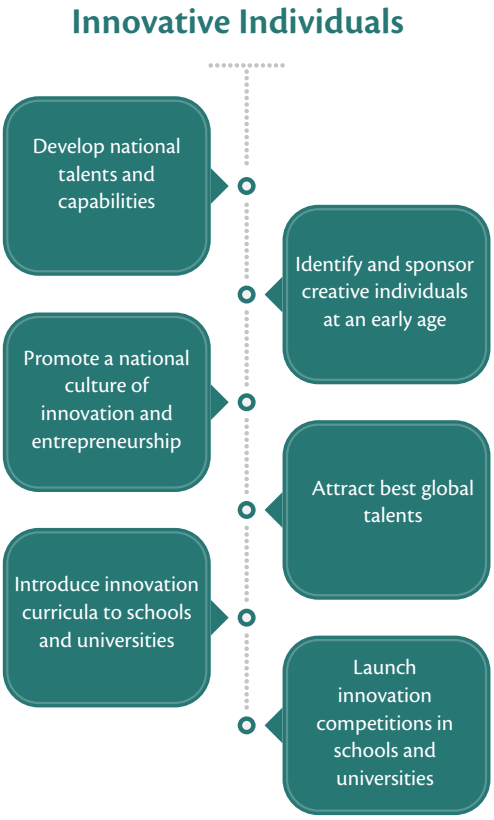
Innovative Individuals

Human Capital is a cornerstone of innovation, demonstrated through the growing interest of companies and governments around the world in recognizing and promoting innovative individuals and teams. Given the importance of the citizen in the UAE's development, the NIS focuses on developing individuals and entrepreneurs who exemplify a spirit of innovation. It aspires to empower the nation to drive local innovation by developing innovative national talents and capabilities in science, technology, engineering, mathematics and entrepreneurship, while equipping individuals with the 21st century skills.

As learning and innovation go hand in hand, schools and universities will play a bigger role in promoting innovation by collaborating with top global academic institutions to introduce new specialized educational materials, while launching innovation challenges and recognizing national innovators. The NIS thus seeks to develop structured mechanisms to recognize and sponsor creative and talented individuals at an early age, and help develop their capabilities and harness their full potential. It also aims to embed a national culture of innovation and entrepreneurship that recognizes innovators and promotes collaboration between the government, private sector and media agencies.

Furthermore, the NIS emphasizes the importance of attracting best global talented scientists and innovators, and infuses a shift towards multi-cultural work teams to share knowledge and experience that help in building strong innovation skills.





Innovative Companies and Institutions

Most businesses around the world build their competitiveness around innovation. Studies show that companies adopting a systematic and sustainable approach to innovation report higher levels of gross value added per employee, besides higher wages and profits compared to other companies. Such companies help in enhancing the competitiveness and standard of living of the countries where they operate.

The NIS seeks to promote a culture of innovation generally across businesses, and specifically in small and medium enterprises. It aims to support national companies in developing, promoting and commercializing their innovations worldwide, thus enhancing their global market accessibility. In addition to driving top national and international businesses towards investment in Research and Development within the UAE, the NIS aspires to build innovation and scientific research centers, adopt cutting-edge technologies, sponsor innovative nationals, and launch a national corporate innovation award. Furthermore, The NIS aims to attract the world's leading innovative companies, while promoting the role and reputation of the UAE as a global hub for testing innovations across identified innovation priority sectors. It also calls for the development of specialized zones for the identified sectors in line with the Internet, Media, Renewable Energy, Industry and other specialized zones currently present in the UAE.

Social innovation represents as well one of the NIS pillars, hence the call for innovating services and products that help address social challenges in the UAE and around the world. The NIS also aims to drive research institutions toward applied research in the identified innovation priority sectors.

Innovative Government

Government innovation plays an essential role in enabling public sector entities to provide customers and businesses with highly efficient services at a lower cost.

Emphasizing the significance of innovation in enhancing public sector performance, the NIS aspires to embed a culture of innovation across government entities. It aims to promote the UAE as a global innovation hub, making it a leader of innovation in government services worldwide, and driving innovation in government policies, processes and procedures to increase overall efficiency.

Aspiring to a well-structured environment of government innovation, the NIS calls government entities to allocate 1% of their budgets – deducted from savings – to the implementation of innovative initiatives and projects, as well as the launch of a national government innovation award. The NIS thus aims to introduce a comprehensive set of advanced tools to promote innovation within government entities, and maintain an updated database of various national, regional and international innovative practices that can be shared across public sector entities within the UAE.

The NIS aims to train and equip government personnel with the right skills for innovation, incentivize employees to generate innovative ideas and launch an innovation diploma across public sector entities.

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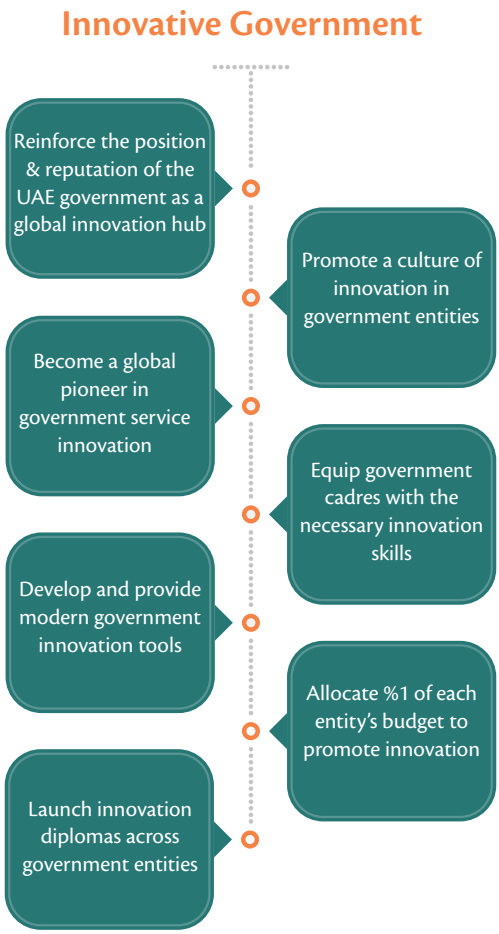
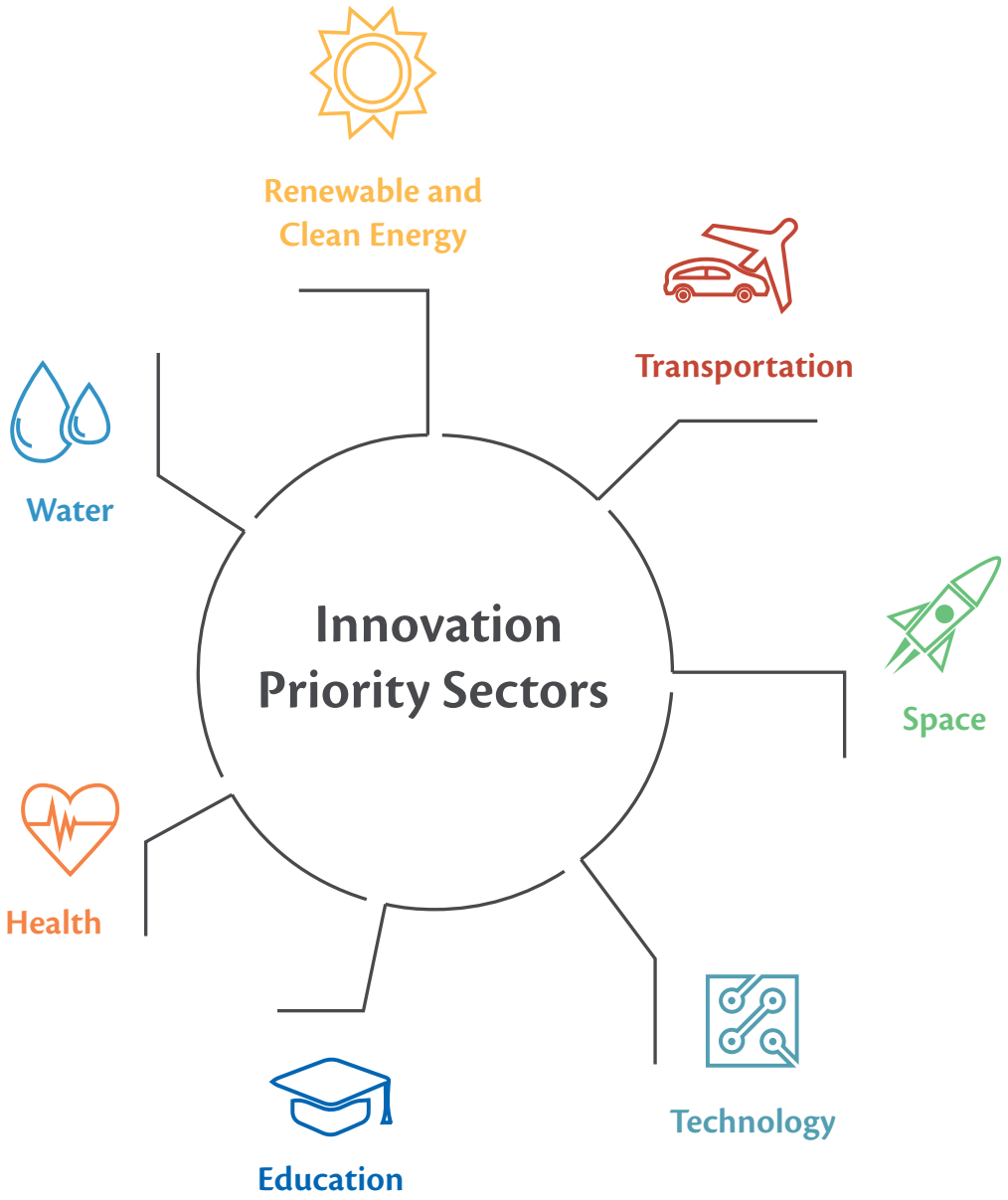


Innovation Priority Sectors

While the NIS focuses on promoting innovation at large, it aims in parallel to lead innovation in 7 primary national sectors, namely renewable and clean energy, transportation, technology, education, health, water and space.



Renewable and Clean Energy

Considering the growing demand for energy, it has become a necessity for many countries around the world to innovate in renewable and clean energy; hence the global tendency towards diversifying energy sources and providing future generations with access to sustainable energy that ensures them a better way of life.

The UAE has numerous existing projects relating to renewable and clean energy such as Masdar, Mohammed bin Rashid Al Maktoum Solar Park, and The Emirates Nuclear Energy Corporation which collectively set the stage for the UAE to play a leading role in global innovation.

The NIS aims to promote innovation in renewable and clean energy by developing relevant energy industries within the UAE, furthering applied research in renewable and clean energy technology, enhancing the efficiency of energy networks and storage, as well as shifting towards decentralized energy generation through feed-in tariff programs.

Transportation

Transportation is one of the key pillars of a well-developed society aiming at an infrastructure that boosts economic growth and enhances productivity. While playing a primary role in facilitating movement from one place to another, transportation eliminates geographical distance and enhances the welfare of societies.

The UAE is at the forefront of the transportation industry worldwide. The successful experience of its national airline companies, Emirates and Etihad, in uniquely reshaping the travel experience is a testament to its national innovative outlook. Over and above, multiple national companies have succeeded up to date in managing varied activities across 75 international airports including ground-handling services, cargo, travel and others. The same applies to maritime transport where the UAE manages 65 seaports across 6 continents.

The NIS aims to promote innovation in transportation by achieving leadership in air and sea transport services and technology, as well as developing and utilizing unmanned vehicles such as drones and unmanned cars and trains. It also calls for the development and implementation of eco-friendly air and sea transportation means underpinned by an infrastructure that caters for electric vehicle charging, besides the manufacturing and maintenance of aircrafts and spare parts.

Technology

Technology is of paramount importance in today's world. Given the primary role it plays in shaping the future, there is a growing need for innovation in technology tools and systems to ensure a better quality of life for everyone.

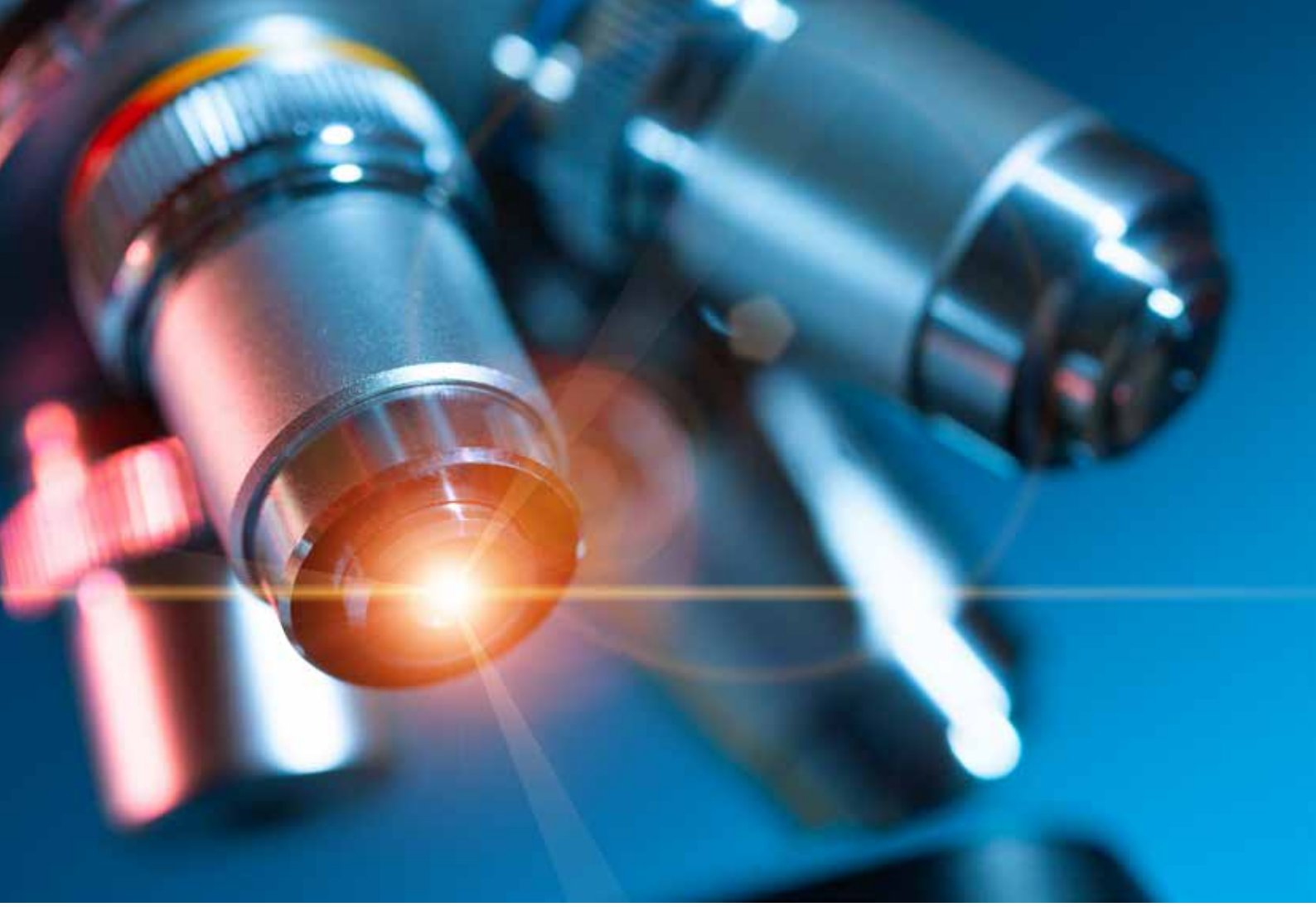
The UAE has accordingly launched a range of innovative technology initiatives, namely The Smart Government and The Smart City initiatives, which secured it a global leadership position in record time. Moreover, Mubadala wholly owns Global Foundries, the world's second largest semiconductor anufacturer. In addition, the UAE developed a multitude of advanced technology research centers including: The Institute Center for Microsystems (iMicro), The Institute Center for Smart and Sustainable Systems (iSmart), as well as Khalifa Semiconductor Research Center (KSRC) at Khalifa University.

The NIS aims to promote innovation in technology through the development of smart cities, software and applications, as well as the enhancement of the Information and Communications Technology (ICT) industry to improve the quality of services provided. Innovation in technology will also be achieved through the manufacturing of advanced technology in areas of global interest like artificial intelligence, semiconductors, nanotechnology and 3D printing, in addition to the quick adoption of future technology trends across various industries.

Education

Education paves the way for a nation's social development and future progress, particularly in light of today's global tendency towards a knowledge-based economy. An advanced education system enhances a nation's capacity to innovate and create. Hence, the UAE launched a range of innovative projects in the education sector namely Mohammed bin Rashid Smart Learning Program (MBRSLP), established to further advance the UAE's already accomplished education system, and the Emirates Foundation 'Think Science' program aiming at empowering Emirati youth to innovate in all fields of science. In addition, the Abu Dhabi Centre for Technical and Vocational Education and Training (ACTVET) launched 'EmiratesSkills' program which aims to raise awareness of career-based technical education among young Emiratis by organizing competitions, events and technical career activities.

Granted that individuals are at the heart of innovation, the NIS aims to promote innovation in the education sector by introducing creative teaching methods and techniques like Smart Learning, as well as designing and developing innovative curricula that equip pupils with the 21st century skills and knowledge in the fields of science, technology engineering, mathematics and arts. In addition, the NIS will ensure an advanced learning infrastructure supported by the establishment of innovation labs in schools and universities, as well as specialized research centers in universities to promote inventions.



Health

For a population to be able to participate effectively in the social and economic development of its nation, the majority of individuals should be in good health. Innovation in the health sector is of paramount importance to advanced societies seeking a world-class health system that enhances the quality of life.

The UAE launched a myriad of initiatives to promote innovation in the healthcare sector. Abu Dhabi Vision 2030, for instance, aims to develop pharmaceuticals, biotechnology and life sciences, while the recently established Abu Dhabi Telemedicine Centre offers high quality, confidential medical consultations over the phone. Abu Dhabi is to witness as well the construction of the first anti-cancer drug manufacturing plant in the GCC, besides hosting the first biotechnology innovation incubator in Abu Dhabi University. In addition, The Dubai Biotechnology & Research Park (DuBiotech) is a free zone that provides Life Sciences companies with an ultimate platform to set up their operations in Dubai.

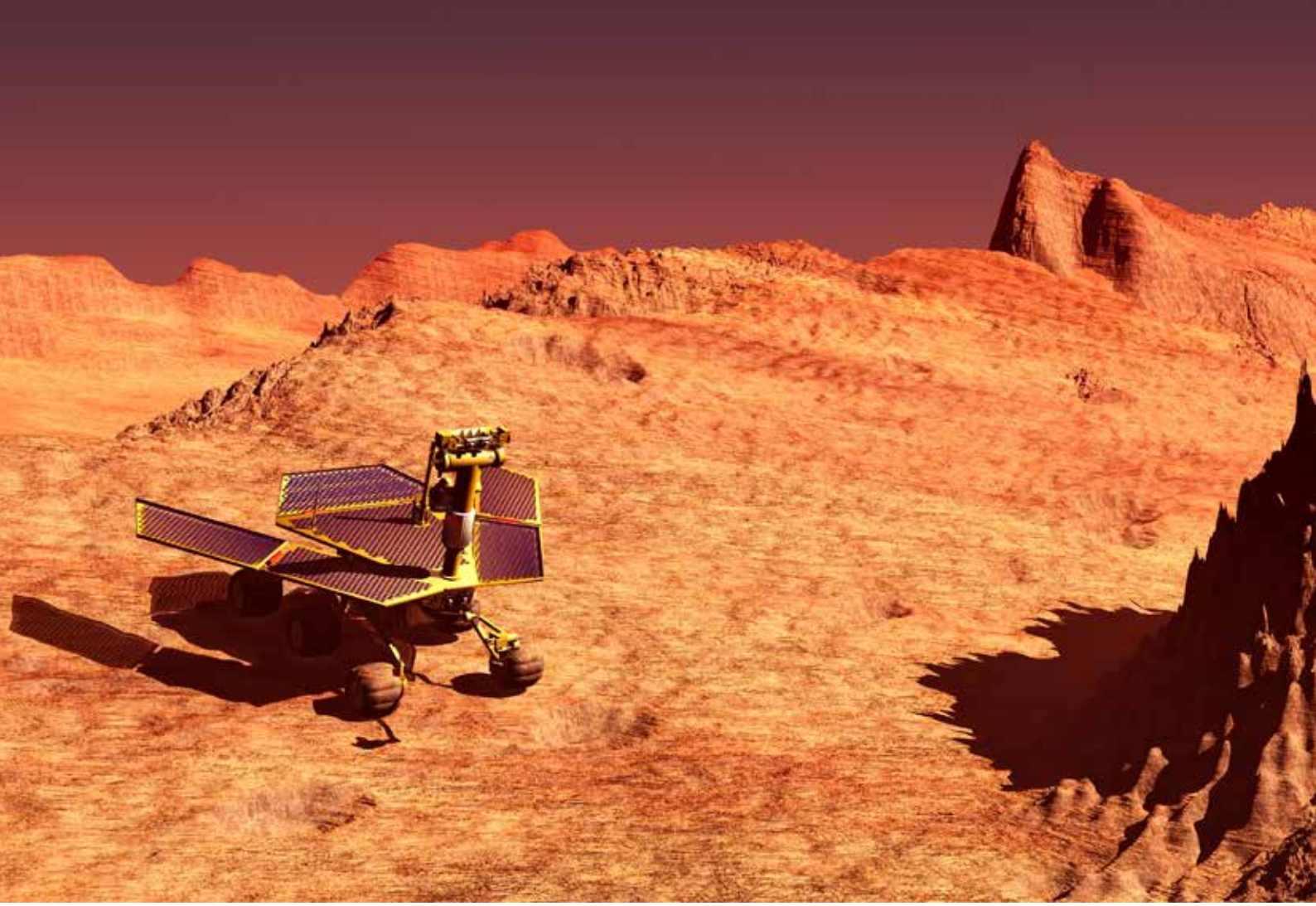
The NIS aims to promote innovation in the delivery of health and therapeutic services using advanced technologies such as robotic surgery and telemedicine techniques. It focuses on developing pharmaceutical industries and biotechnology, and enhancing medical research on the treatment of prevalent diseases, namely diabetes and obesity. Moreover, the NIS aspires to develop advanced health system management technology and promote a healthy lifestyle by deploying smart technology in disease control and prevention, as well as engineering and developing innovative cities and facilities that prompt sports and movement.

Water

As indicated by multiple studies, water scarcity is becoming one of the biggest global concerns with over 880 million people having no access to clean healthy water, 95% of whom are under the age of five.

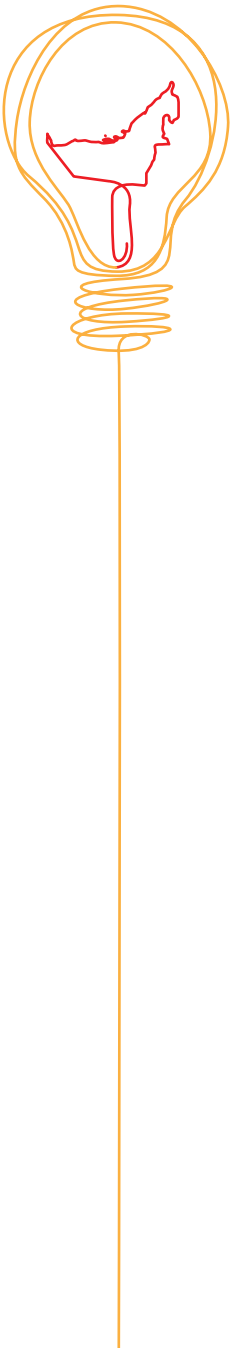
Given the global water scarcity challenge, the UAE launched an international prize of $1Million for finding sustainable solutions for water shortage all over the world, using solar energy to desalinate and purify water. In this regard, the UAE Water Aid Foundation was launched with the aim of conducting research and studies to support the production of clean water using solar energy. It aims to provide new innovative solutions for millions around the world who suffer from water scarcity and polluted drinking water. Additionally, Masdar Institute Center for Water and Environment (iWater) aims to create knowledge and technologies that address challenges linked to clean water production, climate change and water resource management.

The NIS aims to promote innovation in the water sector by enhancing the production, purification and desalination of water using solar energy, effectively managing water demand in household, industrial and agricultural uses, as well as addressing future regional and global water scarcity challenges.



Space

Governments of developed countries around the world are keen on becoming scientific innovation advocates through the implementation of leading scientific practices and advances in space research.

In the UAE, a total of AED 20 billion was invested in space technologies. Under the leadership of an Emirati pool of experts, the UAE Space Agency was launched in 2014, along with the national project to build and send the first Arabic-Islamic unmanned Probe to Mars by 2021. Furthermore, the UAE embraces a range of space institutions namely the Emirates Institution for Advanced Science and Technology (EIAST) that is currently building KhalifaSat, the first satellite to be built, manufactured and launched to space by Emirati nationals by 2017. Al Yah Satellite Communications Company (Yahsat) is also working on manufacturing and launching its third satellite (Al Yah 3) by the end of 2016. Finally yet importantly, the first largest space center in the Middle East and North Africa is currently being developed in Abu Dhabi, with the aim of hosting space trips for touristic and scientific research purposes.

Ultimately, the NIS aims to promote space innovations by enhancing research and technology relating to the exploration of celestial bodies such as spaceships, probes and telescopes, besides developing satellite communications technology. It also aspires to deploy the latest space technologies in terrestrial applications, making the UAE one of the leading countries in the field of space research.