



Cybersecurity Industry Development Program

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HM Majesty Speech

“Our government will follow up progress in various sectors, including small and medium enterprises, and entrepreneurship, particularly those based on innovation, artificial intelligence, and advanced technology. This is in addition to training and enabling youth to benefit from the opportunities made available in this vital sector, so that it could form a cornerstone in the national economy”.

HM Sultan Haitham bin Tariq, 23 February 2020



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Introduction

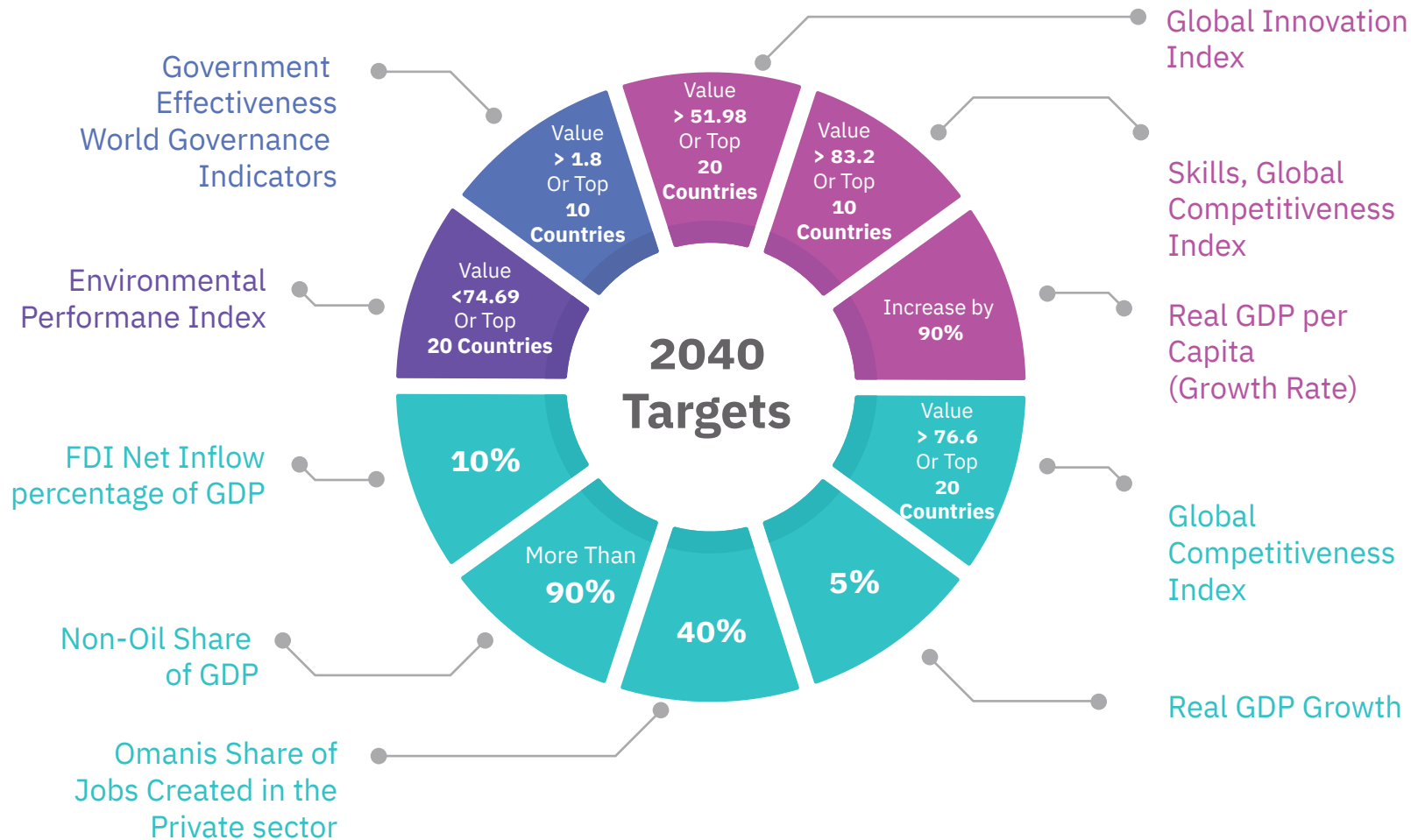
The world nowadays is moving towards the industrial technology as a priority in light of the rapid acceleration of digital transformation, the fourth industrial revolution and increased cyber risks and threats that cost the global economy billions of dollars a year, which has attributed a number of countries of the world to the view of cybersecurity as one of the economic pillars.

Consequently, the industrial development in this field treated as one of the best grounds as it boosts the economy, reduce the reliance of oil-gas sector, and external service import. It provides employment opportunities, support national earnings and other aspects that contributes to the growth of the economy in the Sultanate.

Therefore, in order to line up with the global directions, plans for the diversity of the Omani economy and align with Oman 2040 vision, the National Digital Economy Program have been approved. This program is run by the Ministry of Transport, Communications and Information Technology, which includes the Cybersecurity Industry Program as one of the key programs to increase the growth of digital economy. Thus, National Oman CERT has prepared a program for the cybersecurity industry development. This program highlights the challenges facing the cybersecurity industry and analyze its strengths and weaknesses. Additionally, list numbers of initiatives that will contribute in Oman's cybersecurity industry and will identify its partners.



Oman's 2040 Vision



The Oman 2040 vision has identified a number of guidelines that will contribute to the achievement of the vision's objectives, these includes

job creation

SME development

the development of non-oil- GDP contributions.

Cyber Security as an Economy Objective

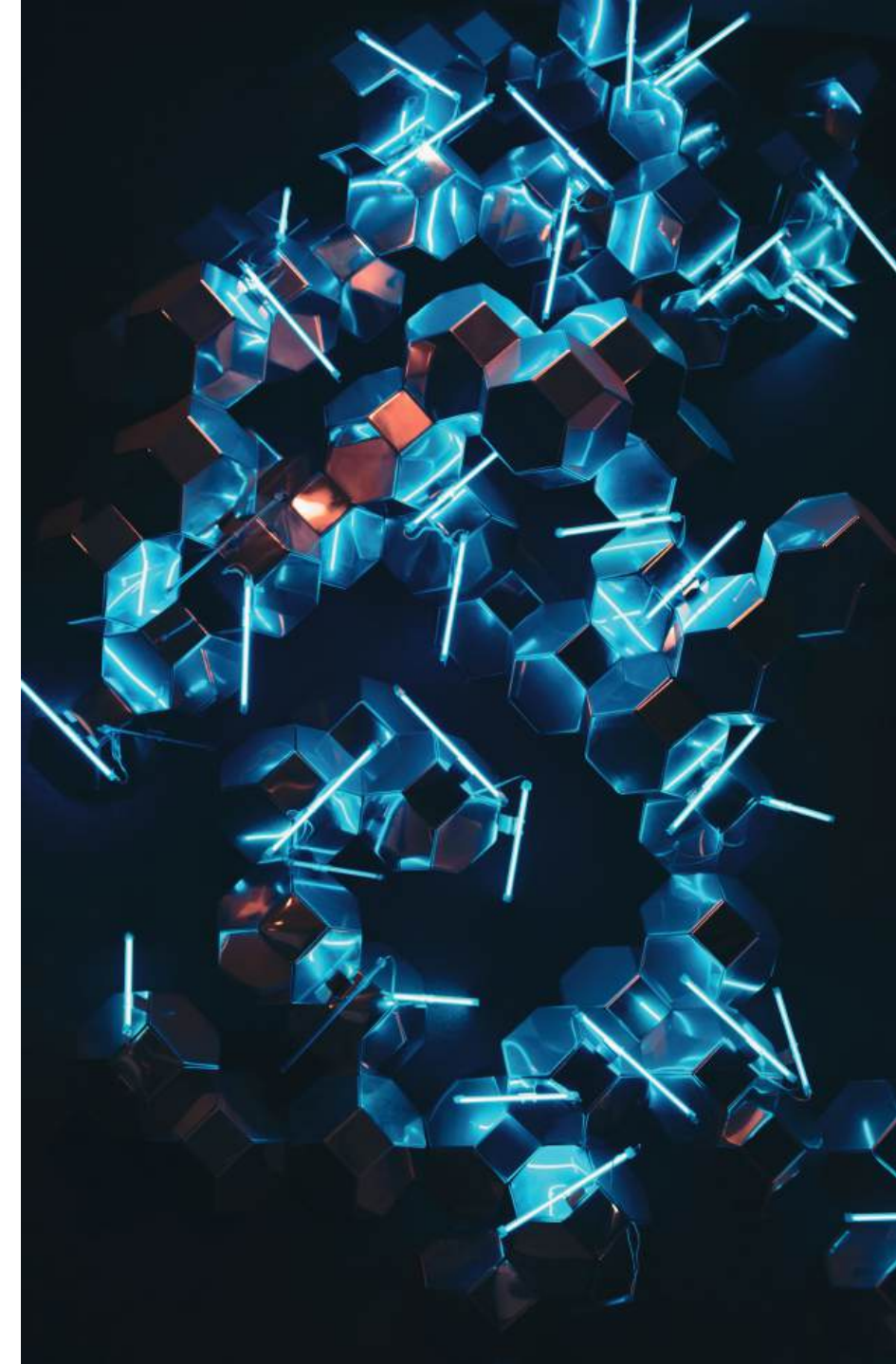
Priority

Economic Diversification and Fiscal Sustainability

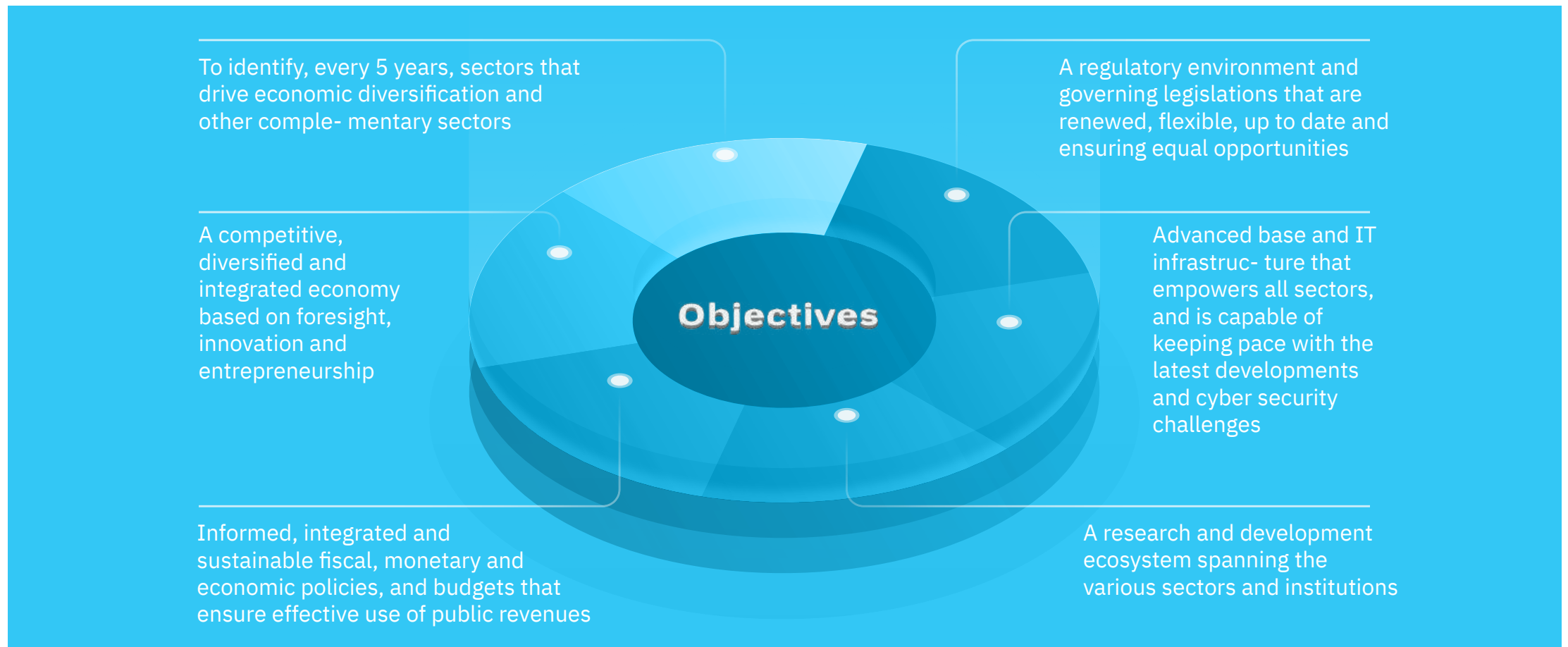
Strategic Direction

A Diversified and Sustainable Economy that Is Based on Technology, Knowledge and Innovation, Operates within Integrated Frameworks, Ensures Competitiveness, Embraces Industrial Revolutions and Achieves Fiscal Sustainability

The Omani economy is heading towards a robust base of economic diversification that relies on economic diversification with focus on technology, knowledge and innovation. It also aims at reinforcing upstream and downstream integration among economic sectors to expand the production and export base, diversify trading partners, deepen investment in high value-added sectors, and enhance the contribution of non-oil sectors to the GDP. Achieving this diversity and integration highly depends on developing local capabilities in innovation and creativity, promoting entrepreneurship, along with preparing a fertile legislative and incentives ground. The competitiveness of the Omani economy will, therefore, increase both regionally and globally, and the growth rates will improve and stabilise in a sustainable manner. Above all, an integrated framework of insightful socio-economic policies should precede to guarantee macroeconomic stability and fiscal sustainability as top priorities, in addition to the optimal utilisation of natural resources.



The new economy will capture global trends in technology, innovation and industrial revolutions in order to keep up with and incorporate such trends in the national plans and programs in a safe knowledge and technology- based environment that ensures transformation to technology, knowledge and innovation-based economy. The desired economy should be able to achieve inclusive and sustainable development, create an attractive business environment for all and increase exports in sectors with high technical and value-added components.





National Digital Economy Program

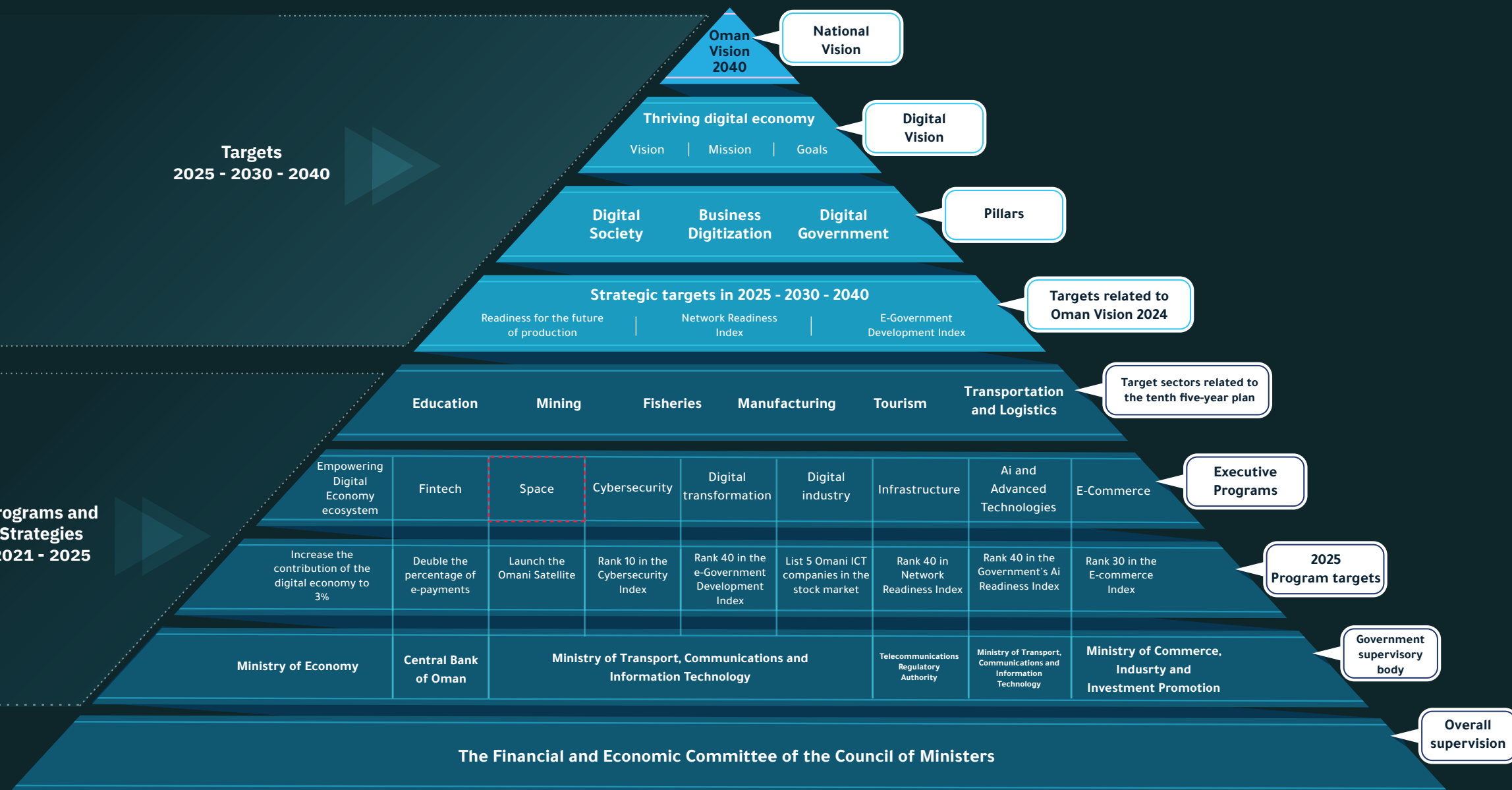
At the beginning of the last quarter of 2021, the National Digital Economy Program was approved by the Cabinet of Ministers. The Sultanate of Oman, through the program, seeks to achieve several goals that contribute to building and developing a thriving digital economy. The program includes three supportive pillars for achieving national goals. In the first pillar, the program will accelerate government digital transformation. As for the second pillar, the program will work to strengthen the digital society. With regard to the third pillar, the program will focus on enabling business digitization in the economic and strategic sectors. The National Digital Economy Program includes a set of main pillars and medium and long-term targets based on the national directions of Oman Vision 2040, which will be achieved through a set of programs and implementation plans related to the digital economy.

Where the areas of focus and opportunities in the five-year plan (2021-2025) are represented in: using the technologies of the fourth industrial revolution to enable economic sectors, government digital transformation, the growth of data centers and cloud services, stimulating the digital content industry, attracting foreign technical investments to the Sultanate of Oman, and Cyber security industry.



**Targets
2025 - 2030 - 2040**

**Programs and
Strategies
2021 - 2025**



The Endorsement of the National Digital Economy Program will promote digital transformation in economic and government sectors and will enrich citizen experience with proactive digital and integrated services. the program is a strategic direction and national reference to ensure alignment and harmony amongst digital economy ecosystem in the sultanate and a national framework with executions programs and plans. The Program aims to build a sustainable digital economy to leverage digital economy contributions by 50 % and promote IT share by 5% every 5 years. It also aims at increasing ICT contribution to national GDP from 2% in 2020 to 10% by 2040

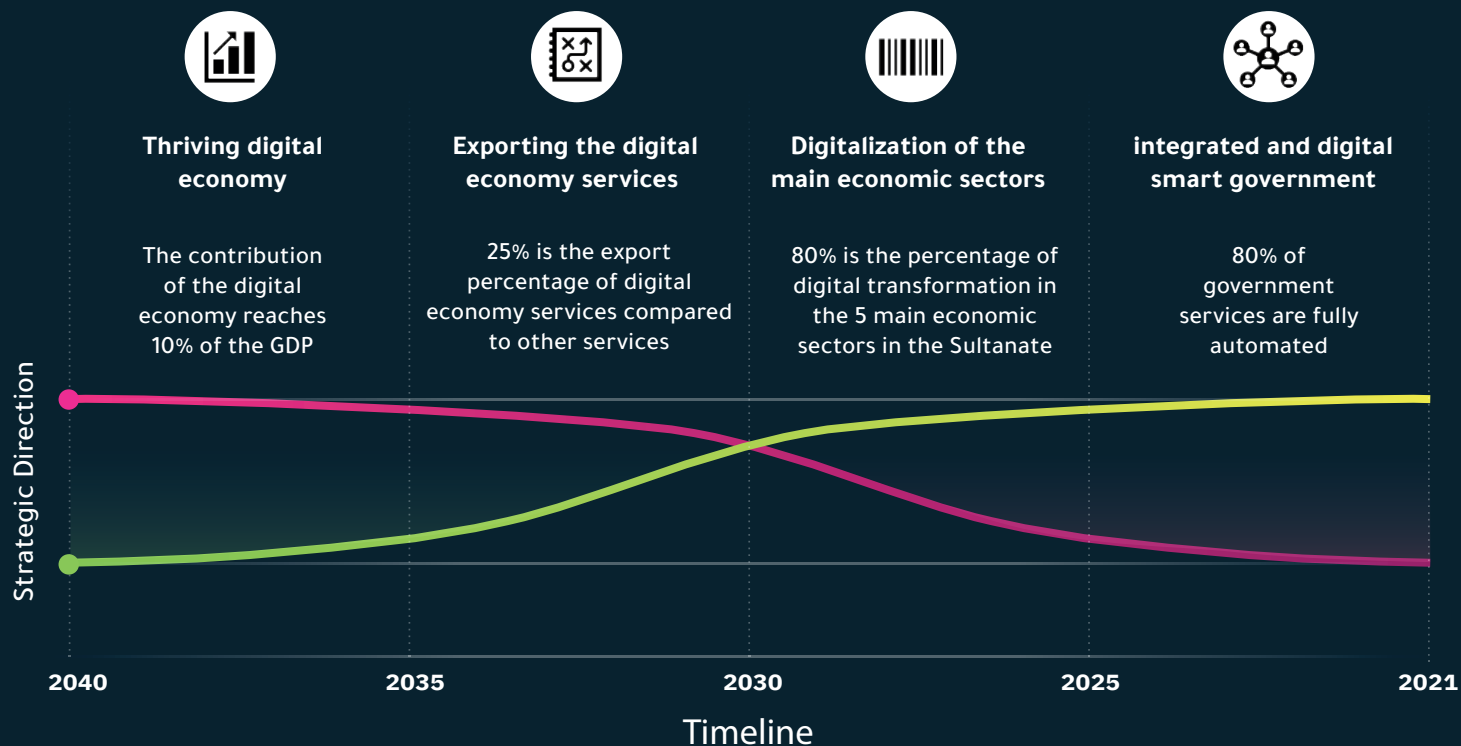
The strategic direction for building the digital economy at a sustainable pace **50-5-5**
 To achieve an increase in the economic contribution by **50%** every **5 years**
 An increase in the information technology share by **5% every 5 years**

**With the increased digitalization of economic sectors in 2021-2030,
 technology will emerge as an independent industry in 2030-2040**

The economic contribution will increase about 5 times during 2040 compared to 2020

So the contribution of the digital economy will reach 10% of the GDP in 2040

The information technology share ranges between 30% to 35%



Currently, the contribution of the digital economy does not exceed 2% of the GDP

The information technology share is between 10% and 15%.



The Impact of Cybercrime in Global Economy

While the cybersecurity industry plays a major role in the digital economy, cyber incidents and cyber-crimes have a very negative impact on the global economy. The lack of adequate cybersecurity controls is a major business risk that can lead to significant financial losses for most companies and institutions. Here are some statistics according to the World Economic Forum:



Cybercrime will be worth nearly **10.5** trillion Dollar in **2025**



6 trillion Dollar cost of cybercrime - or **41%** of the digital economy



By **2025** the digital economy will be worth **20.8** trillion Dollar



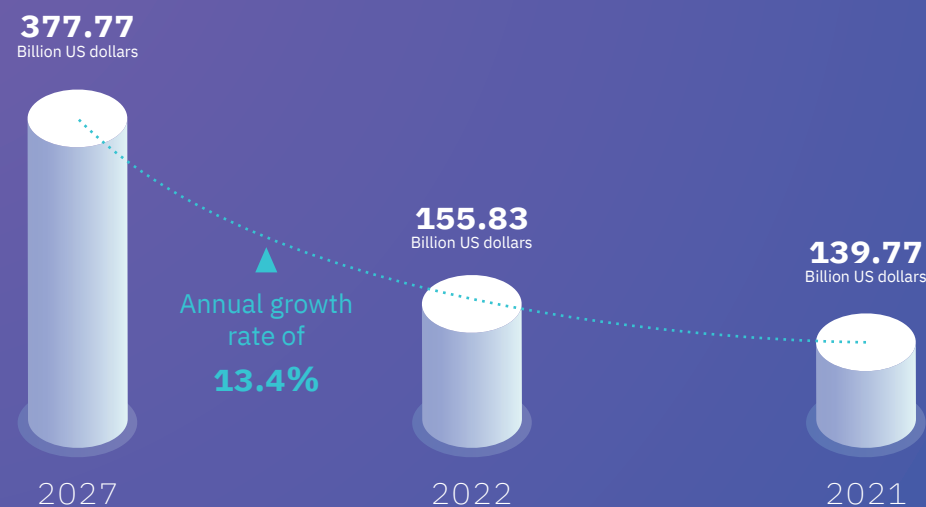
Digital economy was worth **14.5** trillion dollar in **2021**



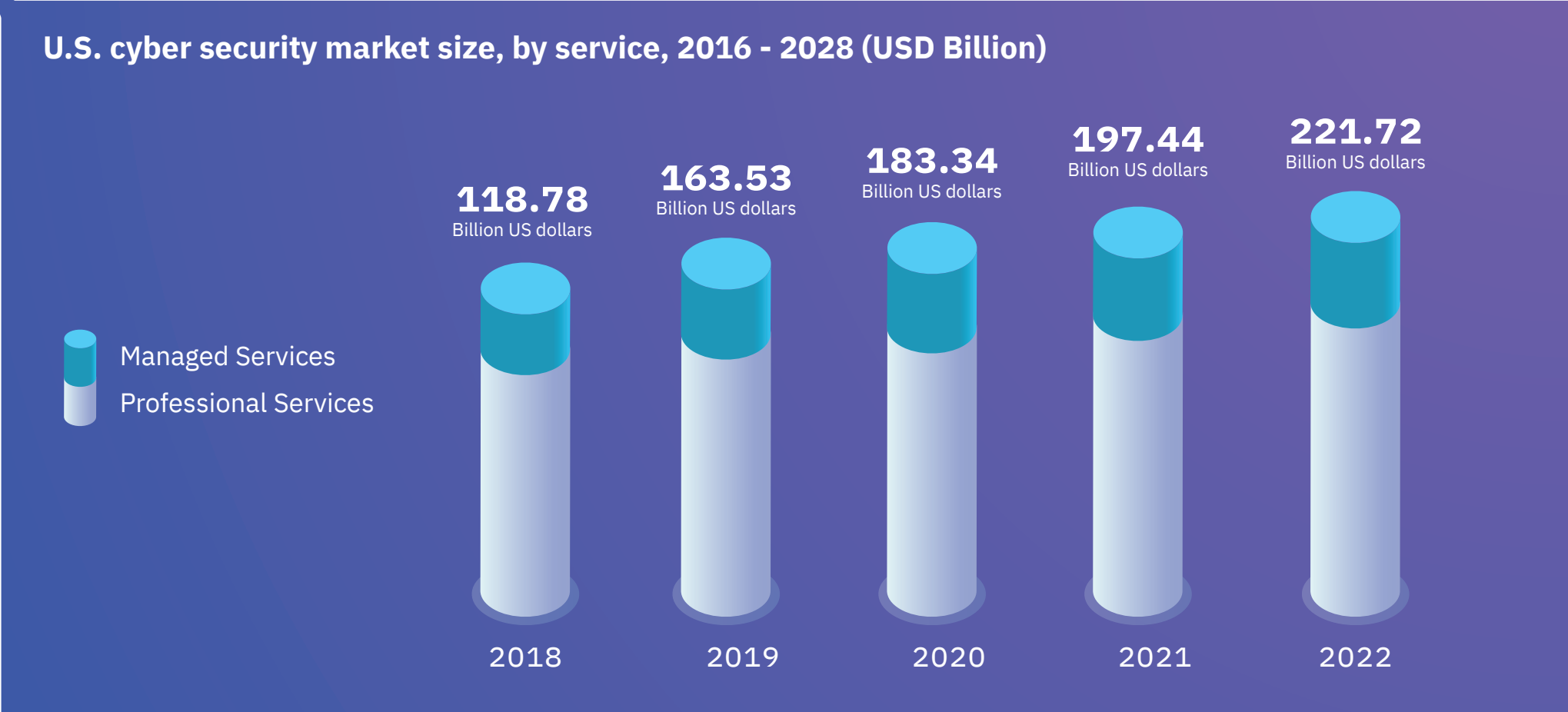
Global View of Cybersecurity Industry

As cybersecurity incidents and cybercrimes increased significantly over the last decade, resulting in huge losses for businesses, the world focused on spending in advanced information security technologies. Therefore, the market size is expected to register a CAGR of 13.4% from 2022 to 2027, as the global cybersecurity market size was estimated at \$139.77 billion in 2021 and is expected to reach \$377.32 in 2027.

Global Cybersecurity Market Size



Furthermore, the need to secure critical infrastructures from threats has encouraged governments across the globe to reform their strategies, creating opportunities for cybersecurity industry development. The cybersecurity market in the United States is witnessing significant growth until 2028, especially in the professional services and managed cybersecurity services sector.



And at the level of vital sectors, cybersecurity in the health sector has witnessed similar growth, as the size of the cybersecurity market is expected to increase by 18% from 2022 to 2030 in this sector.

Global Statistics

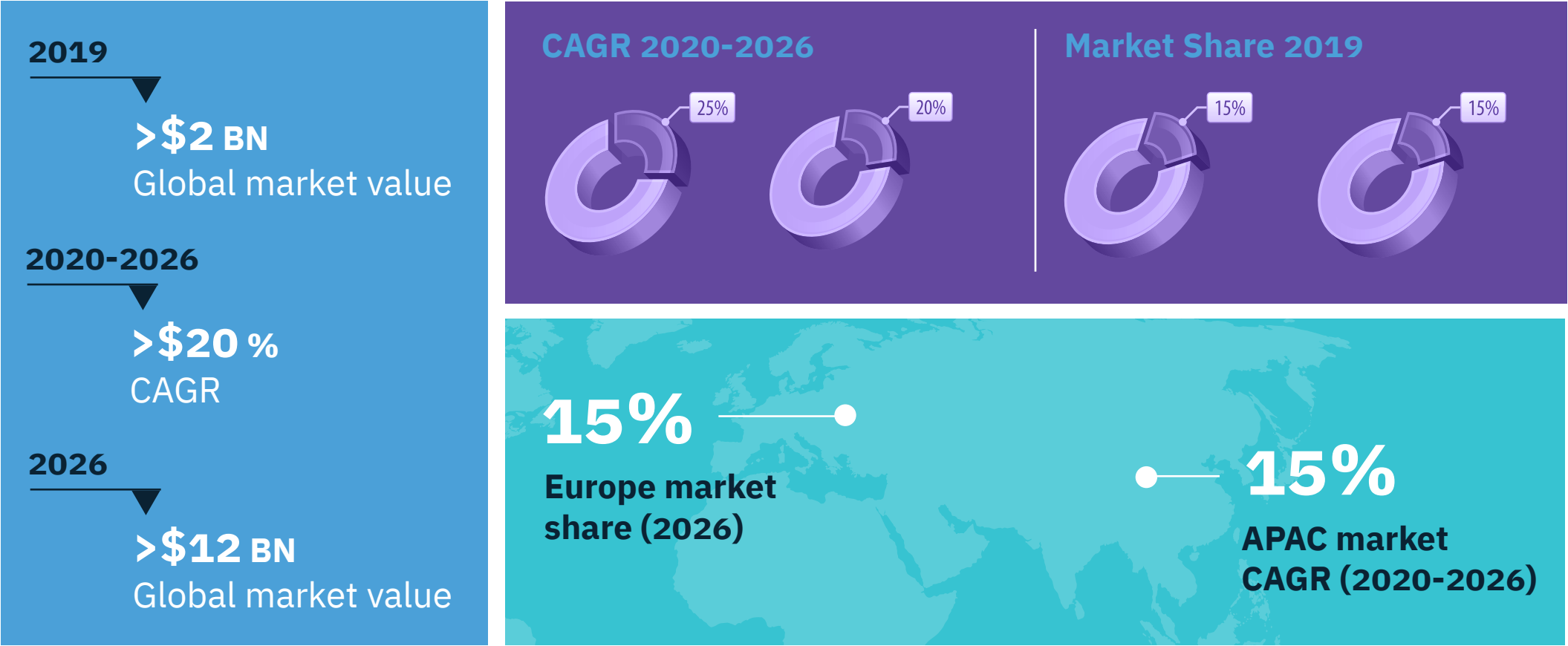
| | | |
|--|---|---|
| CAGR 2020-2030 >18% | Value 2021 >\$13 BN | Value 2021 >&59 BN |
| CAGR 2020-2030 On-premises category >18% | Application Security segment >\$13 BN | Market Value 2021 Ransomware category >&59 BN |

Asia Pacific

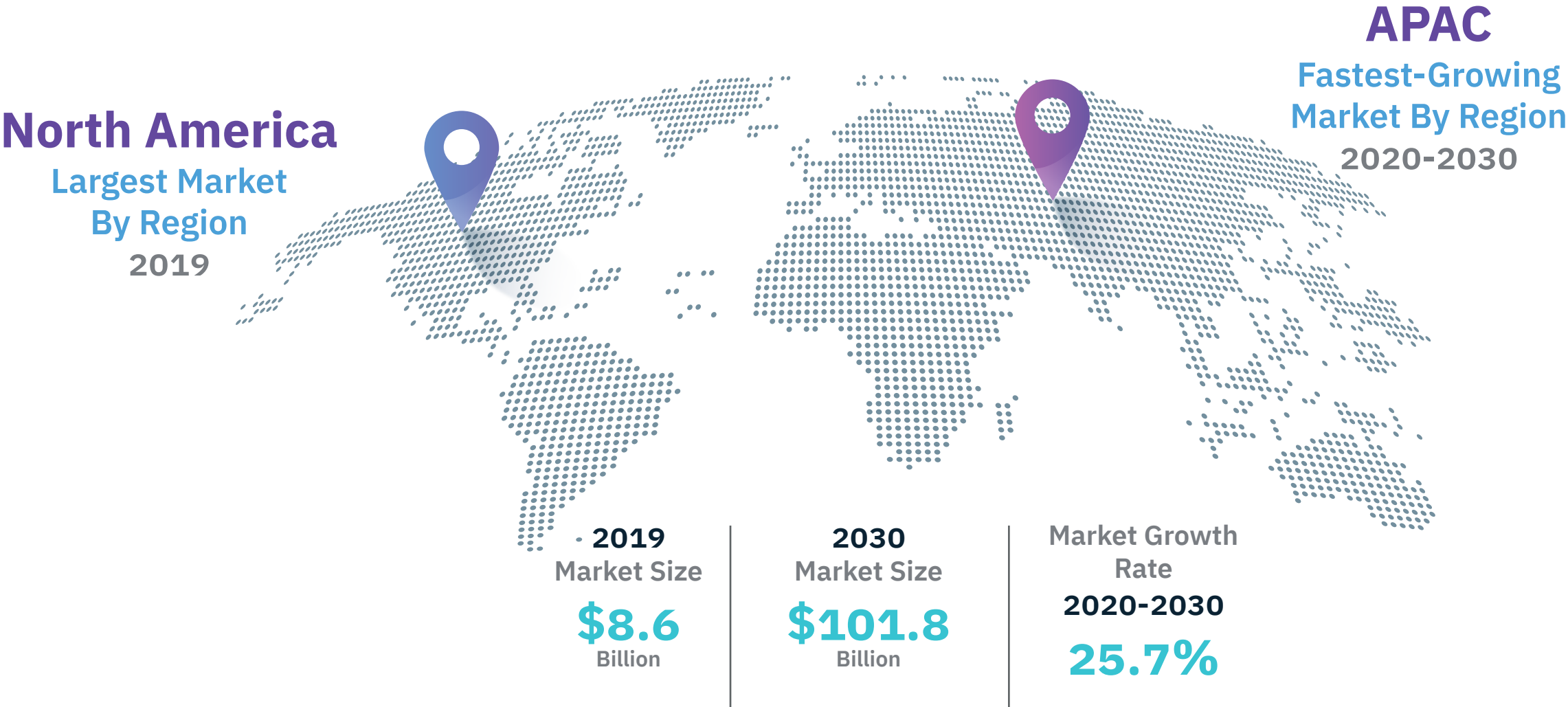
| |
|---------------------------------------|
| CAGR 2020-2030 >19.5% |
|---------------------------------------|



As for the industrial sector, the cybersecurity market is expected to grow by 20% from 2022 to 2026:



Likewise, the advanced technologies sector witnessed a remarkable increase in the size of the cybersecurity market. As the uses of artificial intelligence technologies in cybersecurity are expected to grow by 25.7% from 2020 to 2030.

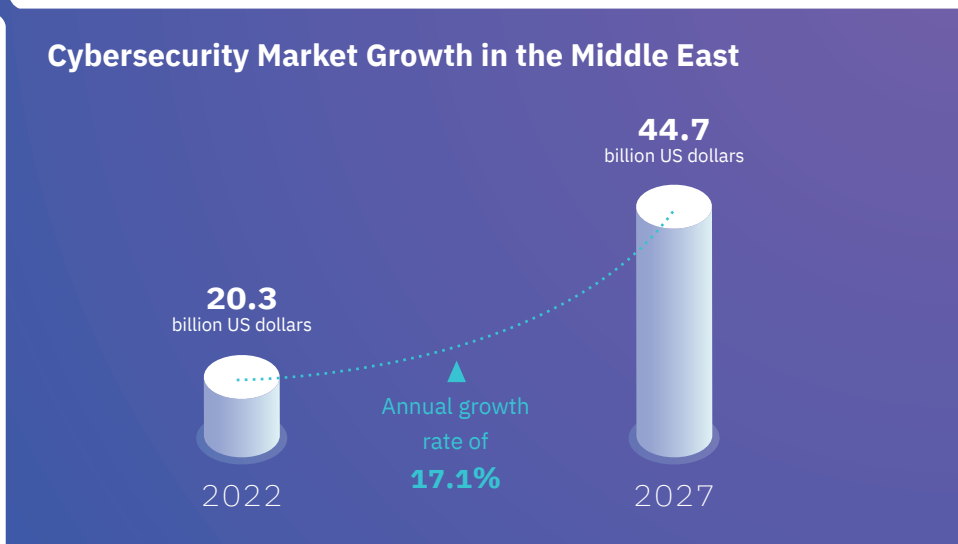




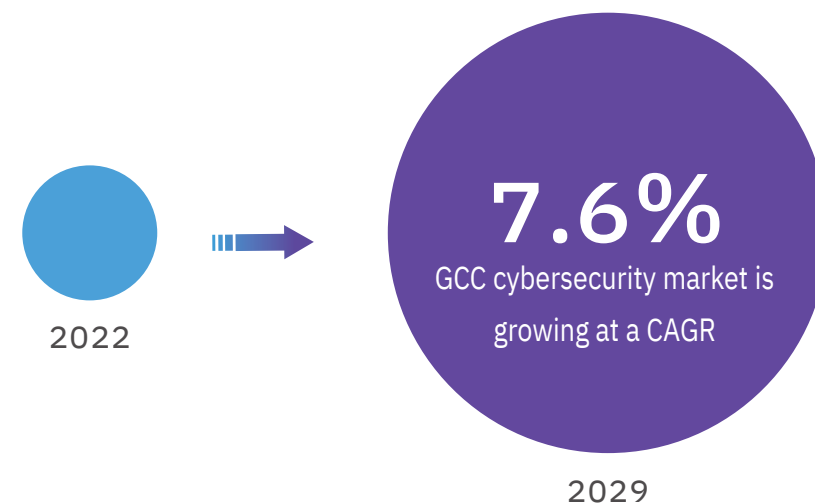
Regional View of Cybersecurity Industry

In line with the variables that happened worldwide, regional countries hastened to focus on investments in this sector.

As the cybersecurity market in the Middle East is expected to increase from \$20.3 billion to \$44.7 billion, with a growth rate of 17.1% from 2022 to 2027.



The cybersecurity market in the GCC is expected to grow at a compound annual rate of 7.6% from 2022 to 2029.





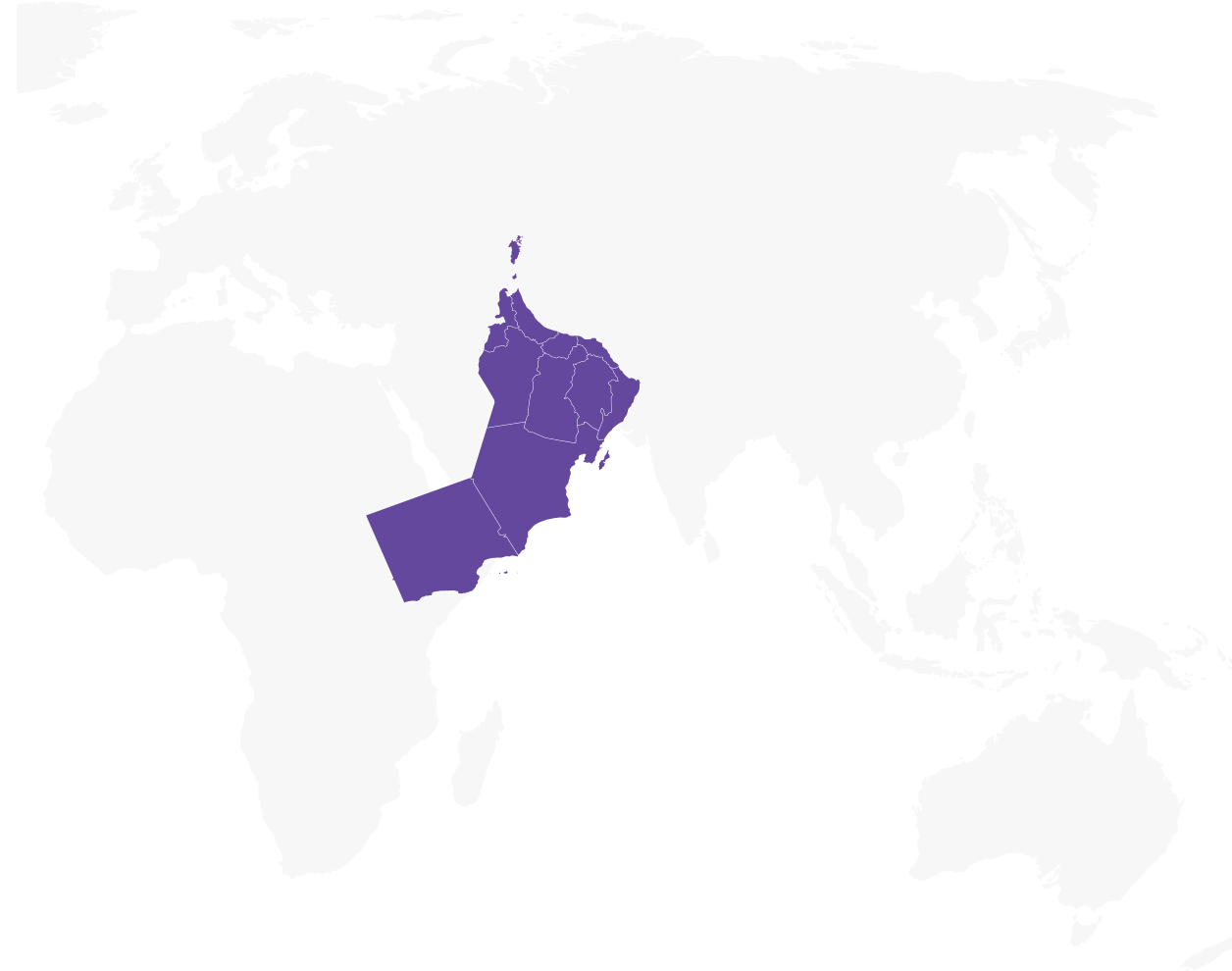
National View of Cybersecurity Industry

Oman is one of the countries seeking to achieve growth and development in the field of cybersecurity. Therefore, it keeps working with rapid changes and able to be one of the highest members out of

193

states in cybersecurity commitments

according to Global Cyber security Index GCI issued by the International Telecommunication Union ITU.



Over time, Oman has built a reputation in this domain and obtained a number of recognitions and achievements regionally and globally.



1

Oman ITU RCC

The first ITU Arab Regional Cybersecurity Center (ITU-ARCC) has been established in Oman, managed and operated by Oman National CERT



2

Ranked 21 in GCI in 2021

Ranked 3rd in the Arab world and 21st globally in cybersecurity readiness in the Global Cybersecurity Index GCI.



3

Chair of OIC-CERT

Elected to be the chair of the board of the organization of Islamic cooperation CERT (OIC- CERT). The OIC is considered to be the second largest organization after the united nation with 57 members states and an observation status at the UN.



4

WSIS Prized in 2014

Obtained the world Information Society Summit (WSIS) prizes in the area of building security and confidence in the use of ICT.

Oman's cyber security market

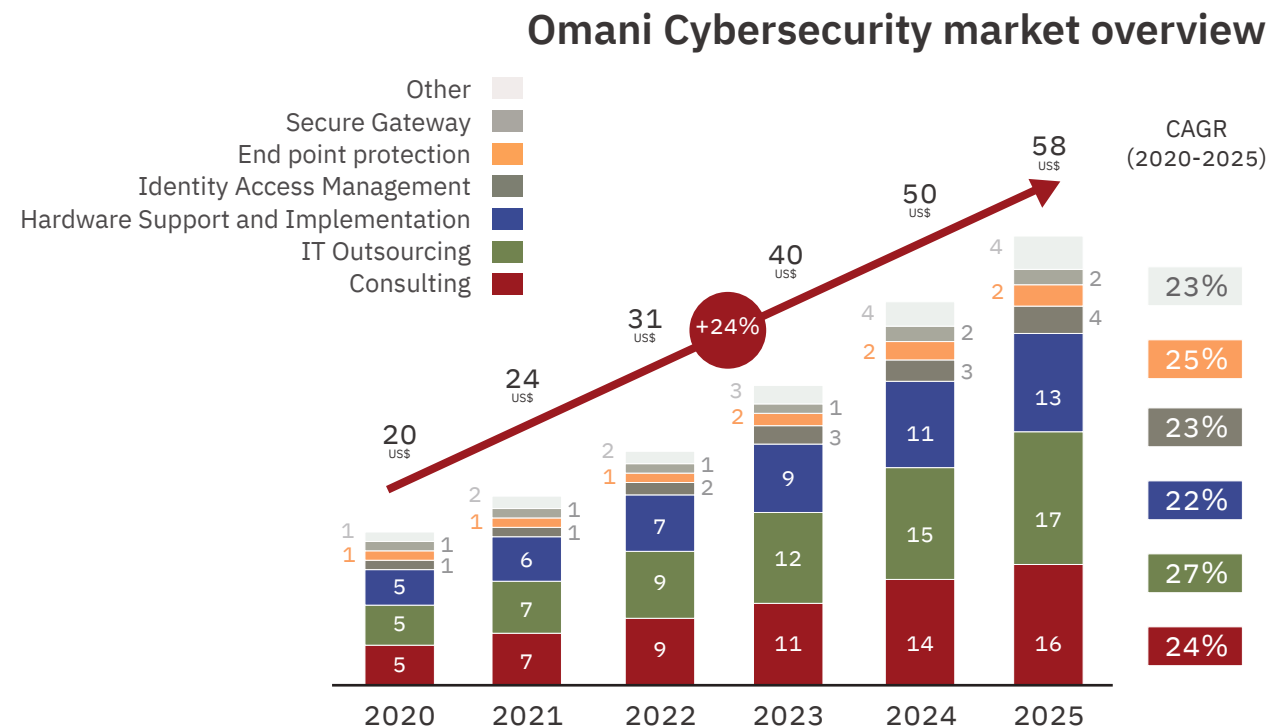
Studies indicate that the volume of cyber security market in Oman will witness a significant increase by 24% by 2025 where the increase of cyber-attacks on financial and health sectors will raise, and it is anticipated that the cyber security consultancy and outsource will represent 50% of cyber security market share

* By 2025 estimate is that Omani companies will cumulatively spend 225m US\$ on Cybersecurity, with CAGR %24

* One of the main drives of the growth will be the development of IoT services and an increasing adoption of BYOD in businesses making the companies increasingly exposed to external threats.

* Furthermore, a growing number of malware attacks on corporates for which data is critical (financial services, healthcare, government), will require increasing cybersecurity requirements, as they will become more sophisticated over time.

* IT Outsourcing and Consulting will hold more than %50 market share, creating a big potential for Cybersecurity Management company



Services Provided in National Market

In continuation of the accelerating progress witnessed by the Sultanate of Oman in the field of cybersecurity, many cybersecurity service providers from the public and private sectors have emerged in the Sultanate of Oman. The following are some of the entities, for example, that play an important role in driving the local market to develop

Key players in the national market today

1

Web and network security assessment



مركز الدفاع
الالكتروني



- ▣ Security incident management
- ▣ Web and network security assessment
- ▣ Security consultancy
- ▣ Web portal protection
- ▣ Security architecture review
- ▣ Physical security assessment
- ▣ Mobile security assessment

2

Digital Forensic Lab

- ▣ Data recovery from digital devices
- ▣ Forensic analysis on the digital devices (computer, Mobile, etc.)
- ▣ Audio and video forensics
- ▣ Electronic data destruction

3

Managed Security Service



- ▣ Security Operation Center and Monitoring



- ▣ Security Operation Center and Monitoring



- ▣ Security Operation Center and Monitoring

Cybersecurity Industry Development Leadership

Since the establishment of Oman National CERT in 2009, leading the cybersecurity initiatives in the Sultanate, managing and operating the first International Telecommunication Union- Arab Regional cybersecurity center (ITU-ARCC), Chairing the Board of Directors of Organization of Islamic Cooperation CERTs (OIC-CERT) and chairing number of international cybersecurity committees. The Oman National CERT has proved its capability to lead the Cybersecurity Industry development to achieve the vision 2040 directions and contribute into the Economy diversification.



Oman's cybersecurity Industry Development Analysis

The strengths and opportunities analysis are showing in the following table

Strengths

- Political stability.
- High ranking of Oman in Global Cybersecurity Index (GCI).
- Cyber security program is part of the National Digital Economy Program .
- Addressing Cyber Security challenges is one of Oman's Vision 2040 priorities objectives.
- Rapid progress in digital transformation
- Availability of Human resource capabilities and adaptabilities to new technologies.
- Specialized colleges and universities in the field of Information Technology with dedicated degrees in cyber security.
- Established good regional and international collaboration in cyber security
- Hosting Regional ITU Cyber Security Center
- Chairmanship of OIC-CERT and other Regional Groups
- Existence of Technology Funds and accelerators

Opportunities

- Good Understanding of the region's requirements and needs on cyber security through the regional cyber security center
- Developed countries in the region are in a great need of cyber security support
- OCERT role as regional center in cybersecurity sector to attract international companies and investors.
- The increasing demand for ICT sector gives SMEs and startups opportunities to offer their services both in the local and international market.
- Covid-19 pandemic resulted practices have introduced risks as well as opportunities

The Cybersecurity Industry Development Program

Vison

"Specialized Cybersecurity Industry Promoting Economic Growth and Diversification"

Mission

"Establishing Specialized Cybersecurity Industry in The Region Focused on Human Capital and Derived by Innovation, Creativity and Excellence."



The Cybersecurity Industry Development Program

key results - 2025



Oman's rank within **10 top countries** in cyber security readiness



Establish **1000 cyber security job/income** opportunities



Increasing cyber security freelancing by **80%**



Increase Cybersecurity market contribution by **20%** of overall IT sector contribution



Attract **two foreign cyber security companies** to establish base in Oman

Cybersecurity Industry Development Strategic Themes

Based on SWOT analysis performed and researches on the requirements needed to develop the industry of cybersecurity in Oman and meeting the program, vision, mission and objectives, six strategic themes and pillars are defined:

Cybersecurity Skill Set

Investing on the skills of human resources and capabilities is vital to support the future growth of cybersecurity industry in Oman. Although 59% of the universities and colleges offers technology related programs, there is still a necessity for specialized cybersecurity programs to meet the market needs and new upcoming jobs.

Market & Investors Incentives

Attracting foreign investment in cybersecurity as well as offering incentives to local SMEs will contribute in building the industry, MTCIT will work with other stakeholders and related agencies to achieve this.

Promotion & Awareness

The promotion of the cybersecurity industry development program nationally and internationally will create better awareness amongst stakeholders on the program objectives . Hence attract entrepreneurs, talents and potential partners

Promote Innovation

Fostering and supporting innovation in cybersecurity is vital to promote Oman cybersecurity industry development and require collaboration between academia, industry and government

Startups ,SME Support & Development

Out of approximately 4,067 IT companies in Oman, there is around 36 companies offering cybersecurity services , however the support of startups and SMEs is important to empower their business quality and to compete nationally and internationally.

Services & Experts' Exports

Support and promote local competing product and services by individual cyber security experts and local SMEs to target international market and serve regional needs

Summary of strategic themes, challenges, objectives and initiatives

Every strategic theme of the cyber security development program is identified to address a specific objective or to overcome a specific challenge through a number of initiatives with identified owner and stakeholders. The initiatives are also aligned to be achieving one or more of the program overall objectives.

• Cyber Security Skill Set

Shortfall in cyber security skills and misalignment of market needs with education outcomes

- 1.1 Job ready skilled graduates
- 1.2 enhanced cyber security workers skills
- 1.3 cyber security internships in private sector
- 1.4 promote cyber security as a career path
- 1.5 Build innovative / adaptive talent pool

• Startups, SME Support & Development

Contribute to innovation and enable startups and SMEs to gain businesses

- 2.1 Make government procurement policies for cyber products and services easier to understand and accessible to startups and SMEs
- 2.2 Increase early-stage product development support for startups and SMEs
- 2.3 Cyber Security Excellence Award
- 2.4 Bounty Hunting platform

• Promote Innovation

Develop commercial products and services and establish collaborations between government, industry and Academia

- 3.1 Establish cyber innovation labs
- 3.2 Cyber security Accreditation
- 3.3 Develop innovation collaboration framework with industry, academia, research and private sector
- 3.4 Establish collaboration with local, regional & international labs
- 3.5 Run a number of awareness workshops, seminars and meetings with stakeholders
- 3.6 Cyber Security R&D team
- 3.7 Cyber security accelerators
- 3.8 Cyber security hackathons.

• Market & Investors Incentives

Create Demands and attract investments

- 4.1 Establish cyber security investors scheme and policies
- 4.2 Attract foreign investment in cyber security industry
- 4.3 Create and identify demand
- 4.4 Cyber Security Insurance
- 4.5 cyber security business license and regulation

• Services & Experts' Exports

Create and develop industry and investment

- 5.1 Develop the export capabilities of cyber security businesses
- 5.2 Establish cyber security industry profiling of SMEs and expertise
- 5.3 Establish international cooperation
- 5.4 Attachments of cyber professional in international companies
- 5.5 Establish cybersecurity company.

• Promotion & Awareness

Create awareness and obtain cooperation

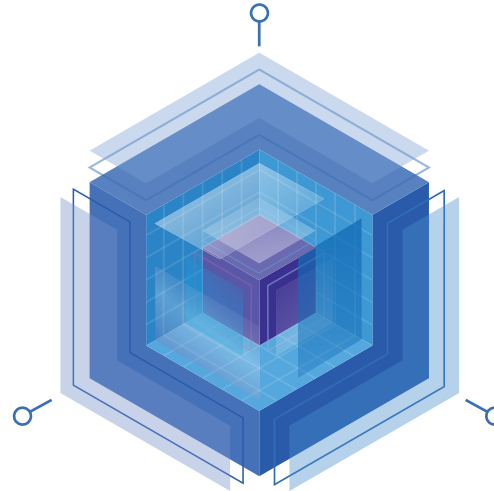
- 6.1 Promote the cyber security industry development Program locally and internationally
- 6.2 Promote the offerings of cyber security services and experts internationally
- 6.3 Establish bilateral cooperation with other countries and potential organizations
- 6.4 Establish cyber security freelancing platform
- 6.5 Cyber security industry development advisory program

Cybersecurity Industry Development Program Work and Governance System

The governance of the implementation of the initiatives and projects of the Cybersecurity Industry Development Program is part of the governance of the National Digital Economy Program , which is supervised by the Financial and Economic Committee emanating from the Council of Ministers, and is based on three main levels as shown below:

The Oman National CERT at the Ministry of Transport, Communications and Information Technology:

The role of Oman National CERT is to supervise the implementation and follow-up of the projects and initiatives of the Cybersecurity Industry Development Program related to other stakeholders, and to review the performance periodically, in addition to submitting periodic reports Regarding performance and proposed solutions in the event of any challenges to obtain the required support.



Financial and Economic Committee emanating from the Council of Ministers:

The role of the committee is to supervise the general direction and approval of programs, strategies and initiatives and the alignment with the objectives of Oman Vision 2040.

Technical Committee for Digital Economy:
The role of the committee is to follow up the progress of programs, strategies and initiatives, and to facilitate obstacles and challenges to ensure that work proceeds according to the plans.



Oman Cybersecurity Industry Development Program

Results

- ▶ Oman's rank within 10 top countries in cyber security readiness
- ▶ Increase Cyber Security market contribution by 20% of overall ICT sector contribution
- ▶ Establish 1000 cyber security job/income opportunities
- ▶ 90% Omanization of cyber security jobs in government
- ▶ Attract two foreign cyber security companies to establish base in Oman
- ▶ Increasing cyber security freelancing by 80%

Pillars

1
Cyber Security Skill Set

2
Startups, SME Support & Development

3
Promote Innovation

4
Market & Investors Incentives

5
Services & Experts' Exports

6
Promotion & Awareness

Key Partners

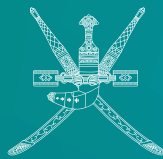
- Ministry of Commerce, Industry and Investment Promotion
- Ministry of Higher Education, Scientific Research and Innovation
- Ministry of Justice and Legal Affairs
- Ministry of Education
- Ministry of Foreign Affairs
- Ministry of Labor
- Ministry of Finance
- Tender Board
- Capital Market Authority
- Oman Investment Authority
- Cyber Defense Center
- Advanced Cyber Security Academy
- Academic Sector
- IT and cybersecurity companies
- SME Development Authority
- Innovation Centers
- Innovation Park Muscat
- Oman Technology Fund
- Private sector
- Insurance Companies
- Oman Chamber of Commerce and Industry
- Telecommunications Regulatory Authority

Funding

- Foreign Direct Investment
- Public-Private Partnership
- Government funding
- Private Sector Investments
- Value Added

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