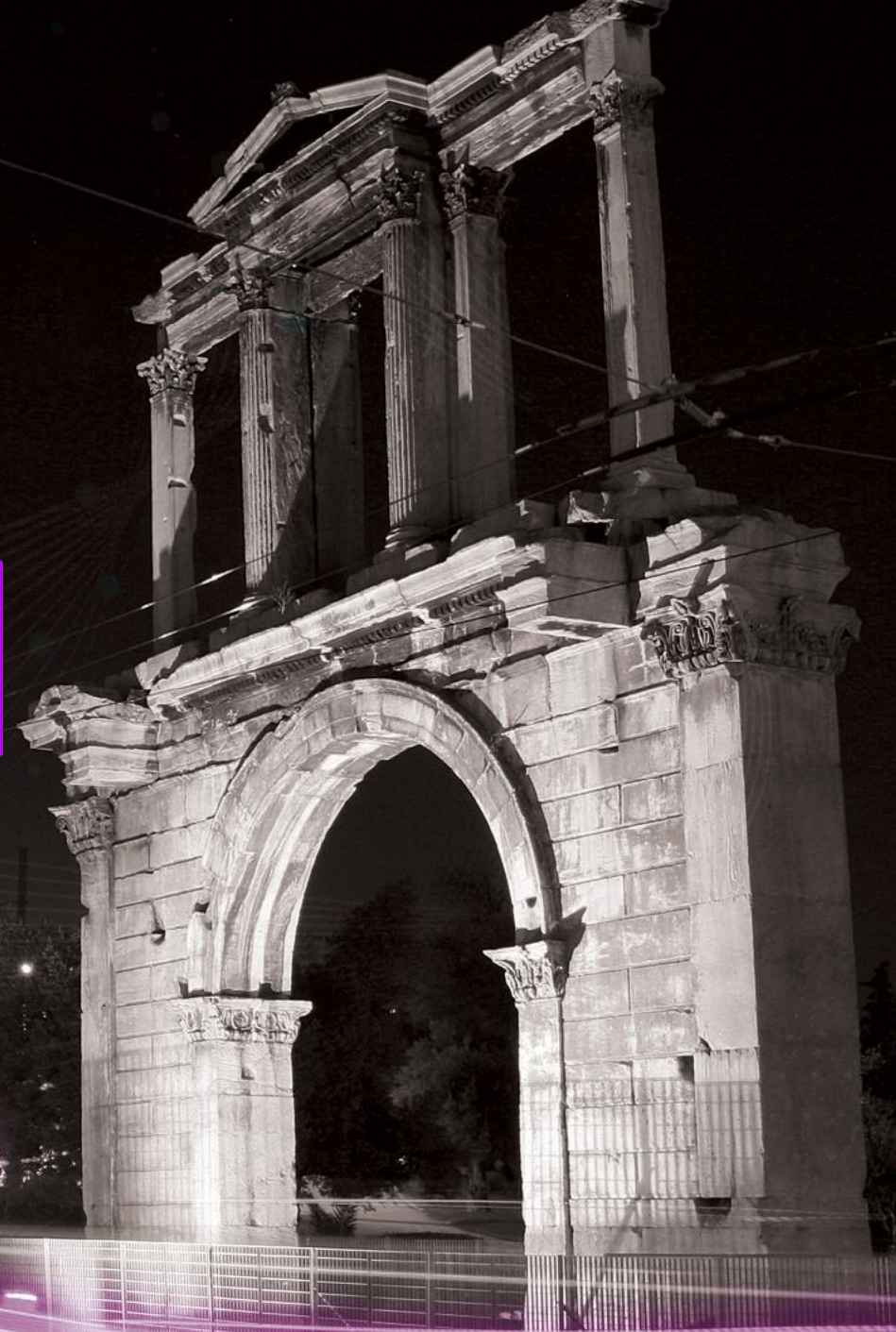




# FUEL FOR INNOVATION: GREECE'S RACE TO 5G

**INFOCOM**

**NOVEMBER 4<sup>TH</sup>, 2020**



# INTRODUCTION







# THE GREEK 5G PUBLIC SENTIMENT

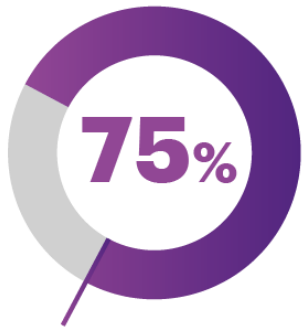
# 5G IS RECOGNIZED BY GREEK PEOPLE AS A **TECHNOLOGICAL EVOLUTION**, THAT CAN SUPPORT THE DEVELOPMENT OF A WIDE RANGE OF **INNOVATIVE APPLICATIONS**



## POSITIVE 5G OUTLOOK



of consumers are **aware of 5G** (especially younger people)



of respondents are **excited or optimistic about the upcoming 5G era** (especially younger and more educated people)



of respondents agree it is important for **Greece to be among the 5G adoption leaders in Southeast Europe**

## 5G MOST POPULAR USE CASES



of survey participants are attracted by **rural connectivity enabled by 5G**

Other popular 5G applications: **AR in education (79%)**, **seamless 4K or 8K video streaming (78%)** and **smart cities (71%)**

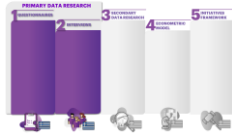


are attracted by **visual language translations**

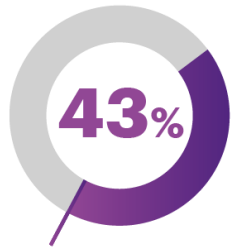


think that **remote healthcare enabled** by 5G will be widely adopted

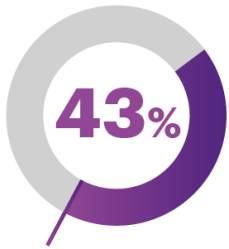
# ALTHOUGH HIGH MONTHLY COST IS ONE OF THE PAIN POINTS, CONSUMERS ARE WILLING TO PAY A PREMIUM FOR 5G SERVICES FOR AN IMPROVED COMMUNICATION EXPERIENCE...



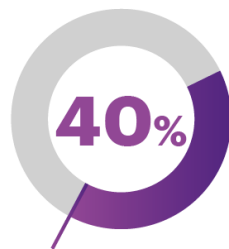
## WILLINGNESS TO PAY FOR 5G



of consumers are **willing to pay for 5G services** (especially younger and more educated people)



of respondents are **inclined to pay up to 10€ above the premium fixed service provider costs for 5G services**



of respondents are **inclined to pay up to 10€ above the premium mobile service provider costs for 5G services**

## CONSUMER BEHAVIOR AFTER 5G LAUNCH



agrees to **hold back switching to 5G until receiving feedback from others (especially younger people)**

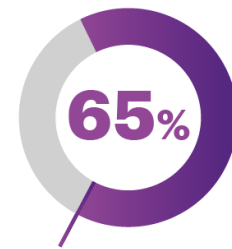


won't buy 5G services until **mainstream adoption**

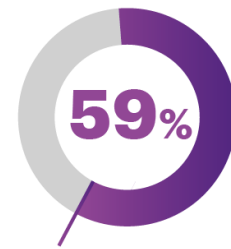


continue with **existing services** because of time-consuming switching (process) time

## MAIN BARRIERS TO 5G ADOPTION



of consumers estimate that **high monthly fees** will be the main barrier to 5G adoption (especially younger generations)



of respondents consider **health risks due to electromagnetic exposure** the number one barrier that may prevent 5G adoption (especially older generations)



of respondents believe that **acquisition cost of smartphones** is the main obstacle that 5G has to face (especially younger generations)

Early 5G adopters are only **3% of our sample**.



# GREEK INDUSTRY SECTOR'S 5G PERCEPTION & AWARENESS

# 5G IS STARTING TO BE SEEN AS A **GAME CHANGER...** ...BUT **A DEEPER UNDERSTANDING** OF 5G'S POTENTIAL IS STILL REQUIRED



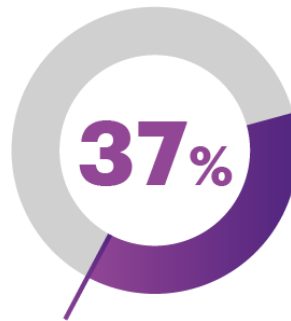
## UNDERESTIMATING 5G DISRUPTION



of companies  
**need help to  
imagine the  
future  
possibilities  
and use  
cases of 5G**



of companies  
believe that  
**5G will be 100x  
faster than 4G**



Only 2 in 5  
companies  
expect 5G to  
provide a  
**revolutionary  
shift in  
speed and  
capacity**

## 5G BUSINESS EXPECTATIONS



of companies  
expect that **5G  
applications  
will give them  
the opportunity  
to save time**



of companies  
believe that **5G  
will permit them  
address real  
issues previously  
unsolved**



of companies  
believe that **5G  
applications will  
give them a  
competitive edge  
with customers**

**Multinational** organizations are **planning to incorporate faster** 5G-enabled solutions in their business model than the Greek ones

# TOP 5G-ENABLED APPLICATIONS ACROSS INDUSTRIES AS ENVISIONED BY GREEK ORGANIZATIONS WITHIN THEIR OPEN-ENDED ANSWERS



## MANUFACTURING OF CONSUMER GOODS

- › Real time warehouse monitoring (IoT sensors)
- › Smart manufacturing (robotics in production line)
- › Preventive maintenance
- › Real-time access to information & commercial processes for sales force on the field



## CHEMICALS, PHARMACEUTICALS, NATURAL RESOURCES

- › Real-time monitoring for production efficiency & safety
- › Remote working
- › Connected industrial remote sites
- › Use of AI for new drugs development



## AGRICULTURE

- › Drones inspection
- › Use of automatic bottling machine
- › Use of ground sensors for productivity increase
- › Use of IoT platforms
- › Mobile apps for sales & merchandise



## HEALTH (HEALTHCARE PROVIDERS, BLUE LIGHT SERVICES)

- › Remote surgery
- › Cloudification of local applications (e.g. Radiation Imaging Management and Storage System (PACS))



## SHIPPING

- › 5G for offshore connectivity
- › Remote inspections (via drones)
- › Predictive maintenance (powered by machinery automation)
- › Remote working



## RETAIL

- › Client face body scanning (with AI driven suggestions)
- › AR/VR enabled product suggestion to end customers
- › Robots in Supply chain
- › Warehouse automation



## INDUSTRIAL MANUFACTURING/AUTOMOTIVE/INFRASTRUCTURE & TRANSPORTATION

- › Remote inspections (via drones)
- › Autonomous driving
- › Use of industrial robots
- › Remote equipment/asset monitoring/management (via drones)
- › Emergency airport evacuation
- › Real-time ERP system updates
- › Mobile security cameras in airport vehicles



## EDUCATION

- › Enhancement of e-learning capabilities
- › Facilitation of online training
- › Monitoring & real-time information for school buses



## ENERGY/UTILITIES

- › Smart Grid & smart Assets based on IoT
- › Virtual Twins



## TRAVEL/TOURISM

- › Enhanced connectivity for tourists experience ("feel like @ home")
- › AI as a substitute to travel
- › Real-time information for journey status for travelers
- › Monitoring of health status



## HI TECH

- › 5G Private networks
- › Remotes employees interconnection
- › Digital Twins Massive video for security & monitoring purposes
- › AI-powered customer support



## FINANCIAL SERVICES (BANKING, INSURANCE)

- › Real time integration of 3rd party Apps
- › Real-time customer response
- › Enablement of insurance ecosystem apps/Telematics

Sample base: All Respondents: n (GR)=245



# THE ROLE OF ECOSYSTEM, CSPs AND SIs AS KEY PARTNERS TO ACCELERATE 5G JOURNEY IS CRUCIAL



## PIVOTAL ROLE OF ECOSYSTEM



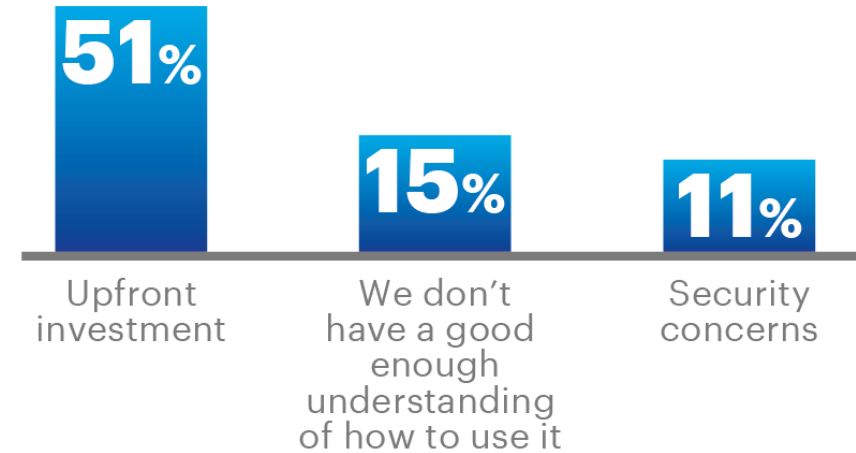
of companies are considering **collaboration** within their industry sector to create a **5G ecosystem** that will be beneficial for all participants

of companies plan to partner with **System Integrator (SI)** companies on their 5G journey

of companies plan to partner with **Telecommunications** companies on their 5G journey

**15%** of companies plan to partner with **Consulting** companies on their 5G journey.

## BARRIERS TO 5G ADOPTION



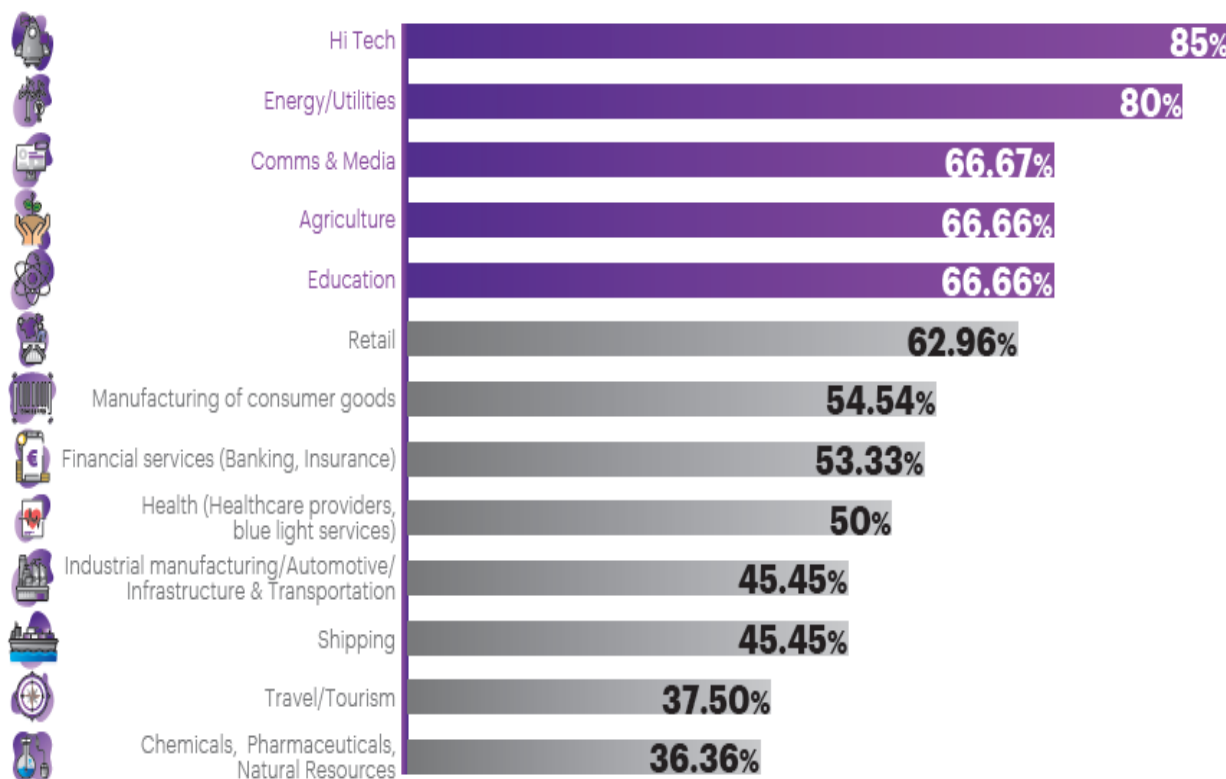
# COLLABORATION FOR 5G ECOSYSTEM PER VERTICAL INDUSTRY

**Hi Tech, Energy/Utilities, Comms & Media, Agriculture and Education** are the sectors that consider seriously collaboration with other companies within their industry sector to create a 5G ecosystem that will be beneficial for all.



## TOP 5 SECTORS WITH THE HIGHEST SCORE

PER SECTOR DISTRIBUTION OF THOSE RESPONDED DEFINITELY AND PROBABLY



Sample base: All Respondents: n (GR)= 245

# GREEK TELCOS' 5G PERCEPTION & READINESS





# IT SEEMS THAT TELCO'S ESTIMATIONS REGARDING 5G DEPLOYMENT AND STRATEGY PLANS CONVERGE



**Telcos** prove to have different timelines on 5G deployment plans (mainly from 2021)

All **Telcos** agree simplification of the regulatory framework is crucial for accelerating 5G launch

All **Telcos** agree that Collaboration is the “name of the game” for 5G network deployment

The majority of **Telcos** believe that Security issues may pose the biggest technical challenge to 5G launch



# A VARIETY OF VERTICAL INDUSTRIES WILL BE TARGETED BY TELCOS FOR 5G ADOPTION AS NEW REVENUE OPPORTUNITIES ARISE



All Telcos consider enhanced customer experience as key reason for 5G roll-out followed by capacity expansion needs

Tourism, industrial manufacturing, energy/utilities among the first targeted by Telcos industries

AR/VR immersive entertainment is seen by all Telcos as one of the most attractive 5G features for their leading target industry

All Telcos consider ultra low latency as the main advantage that 5G promises towards their leading target industries





# A VARIETY OF VERTICAL INDUSTRIES WILL BE TARGETED BY TELCOS FOR 5G ADOPTION AS NEW REVENUE OPPORTUNITIES ARISE



All Telcos expect new services creation & partnerships with new business models to unlock new revenue opportunities

The majority of Telcos perceive Guaranteed SLAs as the the key business model for 5G B2B monetization

Telcos shared balanced perspectives on whether their leading target industries will actually pay more for 5G enabled services

All Telcos converge on the willingness of consumers to pay a premium for 5G services (up to 10%)



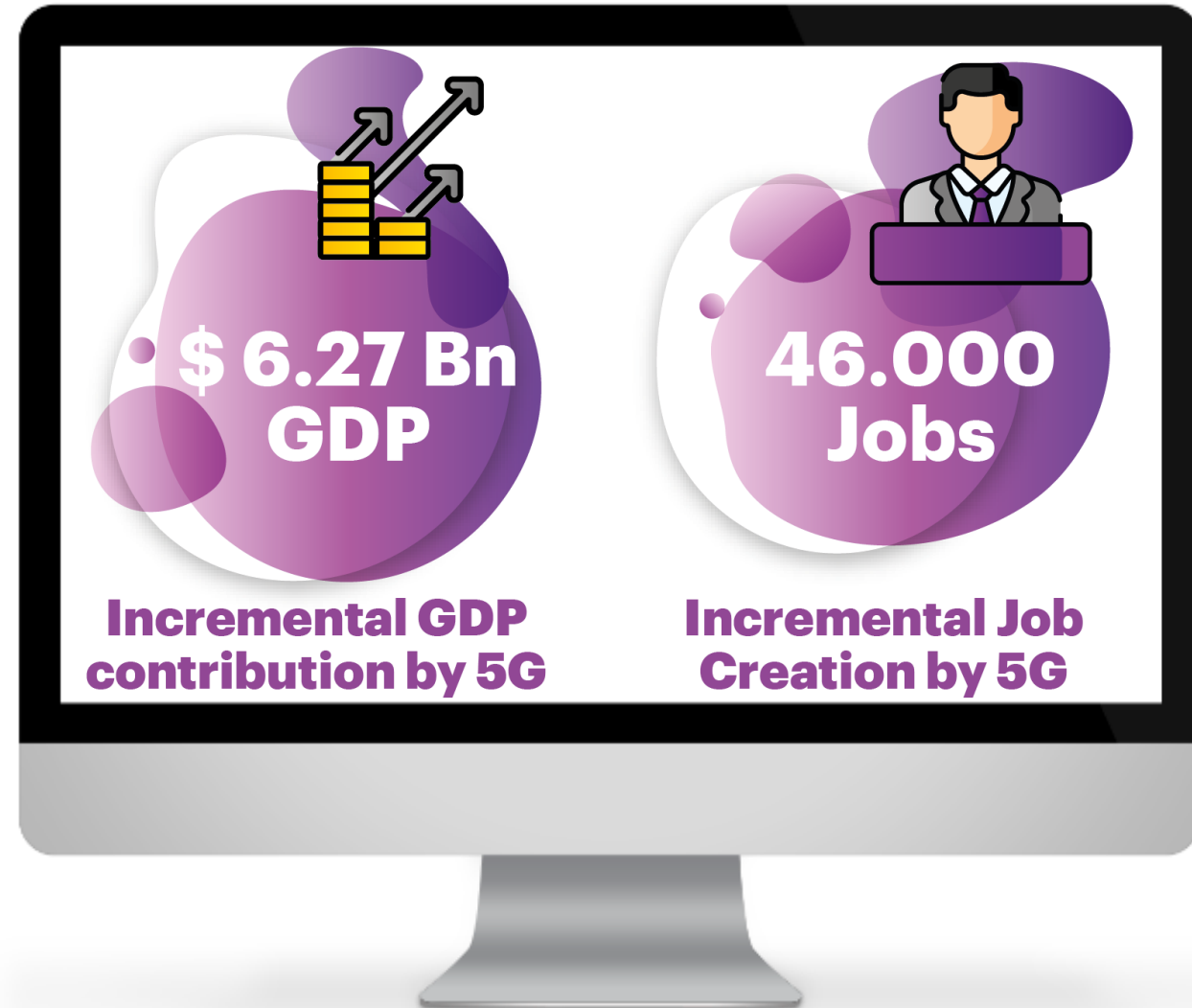


# 5G AS DRIVER FOR GREECE'S GROWTH



# 5G AS GROWTH PILLAR FOR GREEK ECONOMY & SOCIETY

**5G adoption, if combined with collaboration, may act as a multiplier effect for Greek economy, unlocking “trapped value” and accelerating GDP & employment uplift for the period 2022-2028**

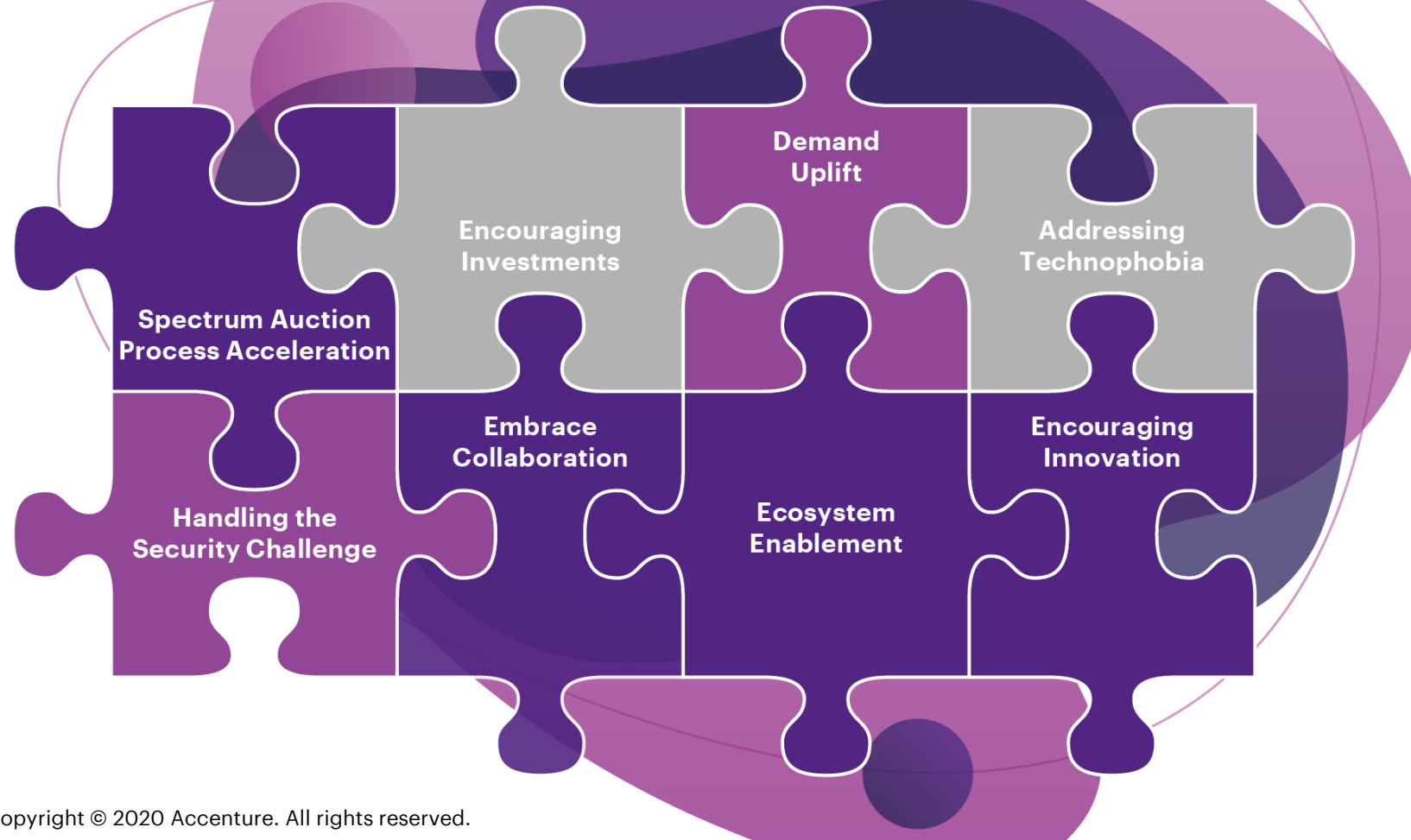




# THE PATH TOWARDS A 5G-ENABLED FUTURE

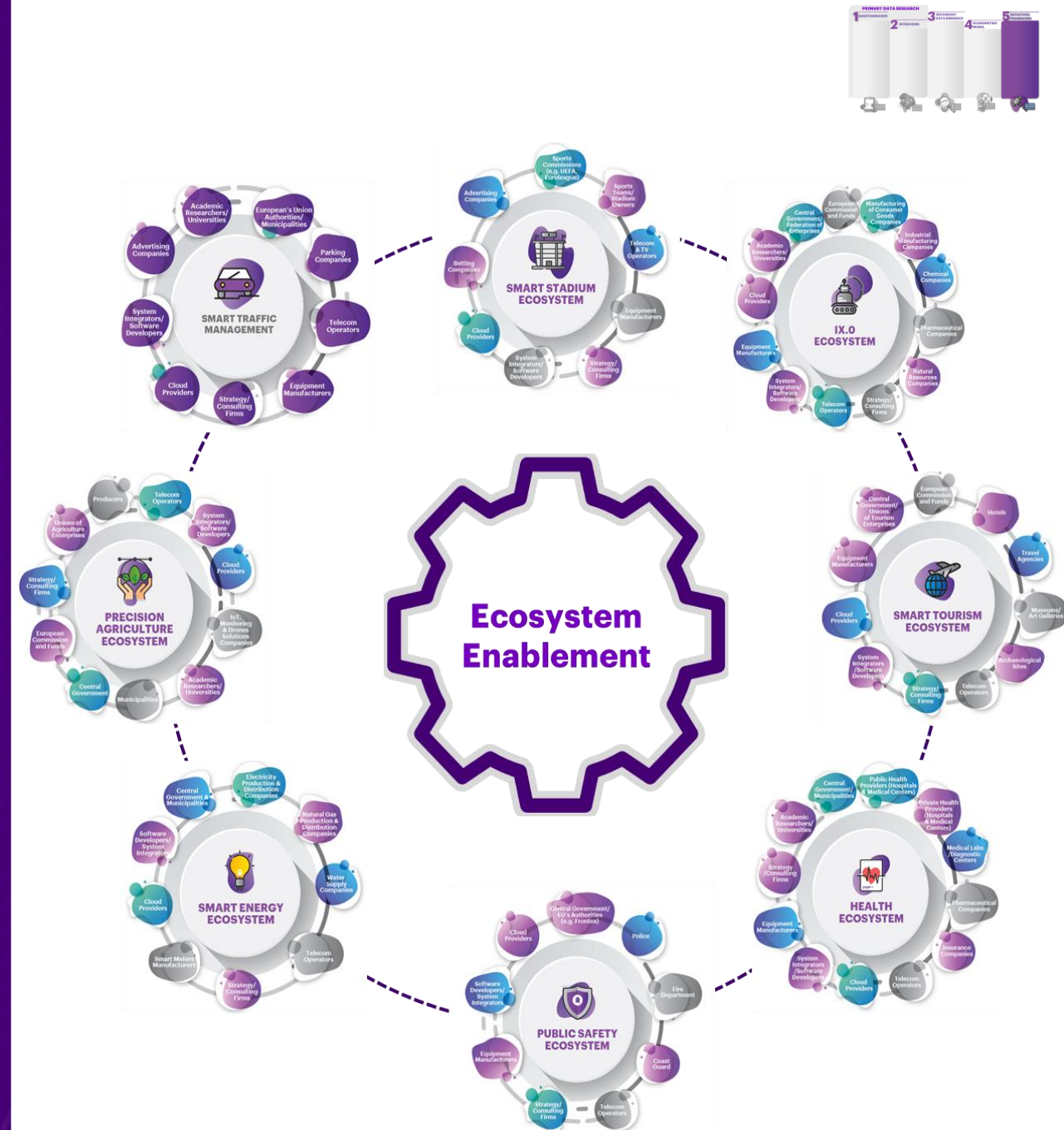


# WE HAVE IDENTIFIED 8 KEY INITIATIVES WHICH, IF IMPLEMENTED, CAN ACCELERATE SIGNIFICANTLY 5G ADOPTION ACROSS GREEK SOCIETY AND ECONOMY



# 5G KEY ECOSYSTEMS FOR GREECE

Particularly for Greece we have identified 8 important ecosystems in key areas of the Greek economy namely: **IX, Tourism, Health, Public Safety, Energy, Precision Agriculture, Smart Traffic and Smart Stadium Ecosystems**





5G

START



# ALL INFO ABOUT ACCENTURE STUDY IS PUBLICLY AVAILABLE



**FUEL FOR INNOVATION: Greece's race to 5G (Full Report)**

## THANK YOU

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