



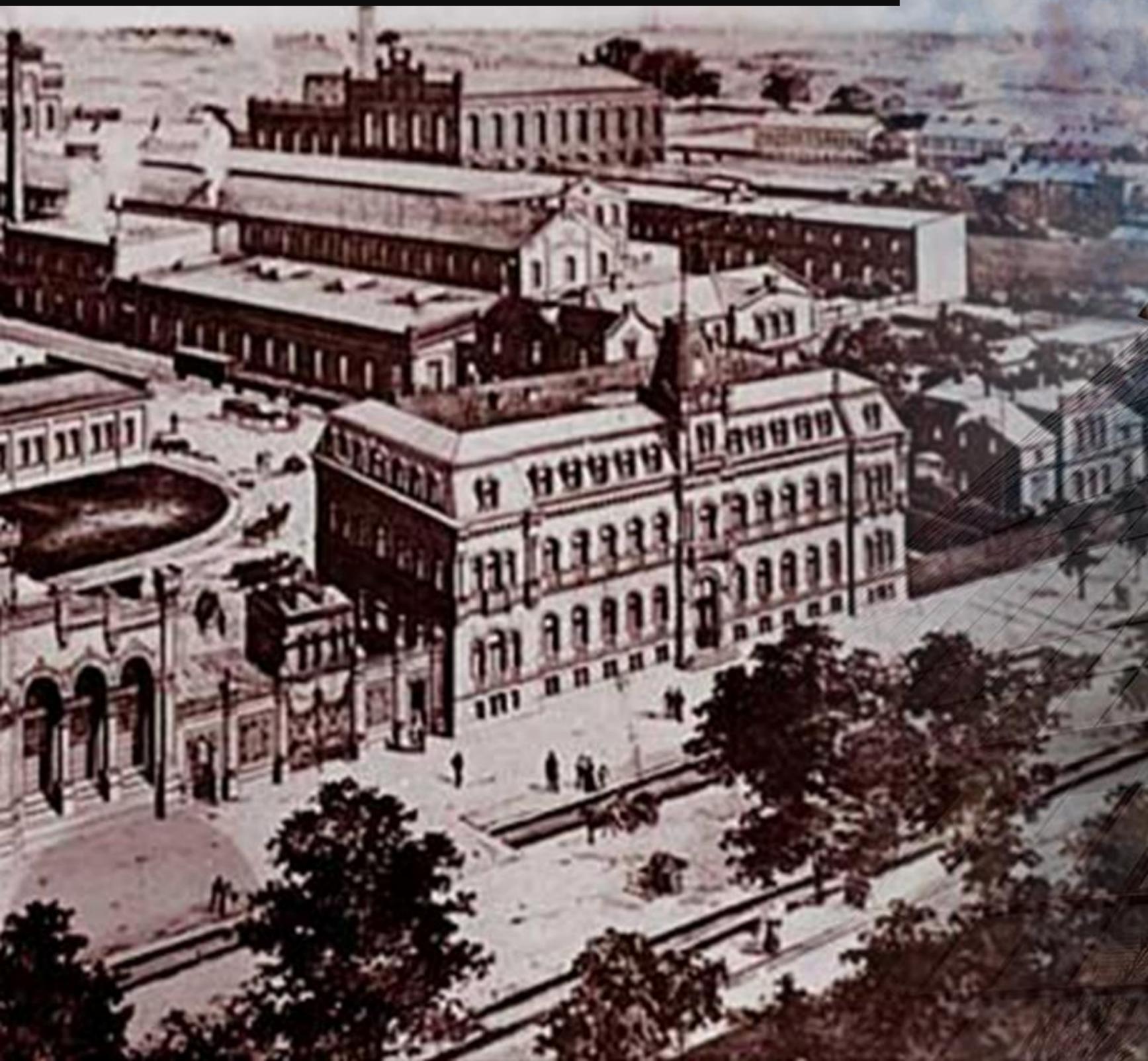
**lmt**

# LATVIJAS MILITĀRĀS INDUSTRIJAS STRATĒGIJA, INOVĀCIJAS UN LMT LOMA NOZARES ATTĪSTĪBĀ

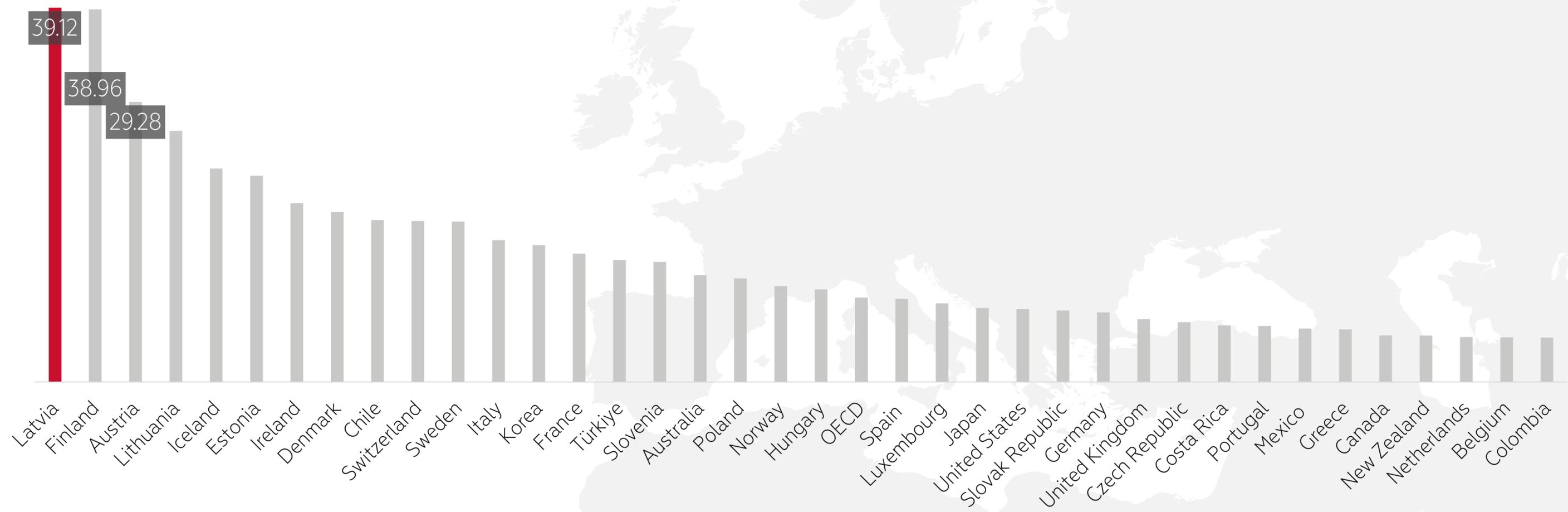
**Ingmārs Pūķis**

Viceprezidents

150 gadi



# Latvia leads mobile data consumption

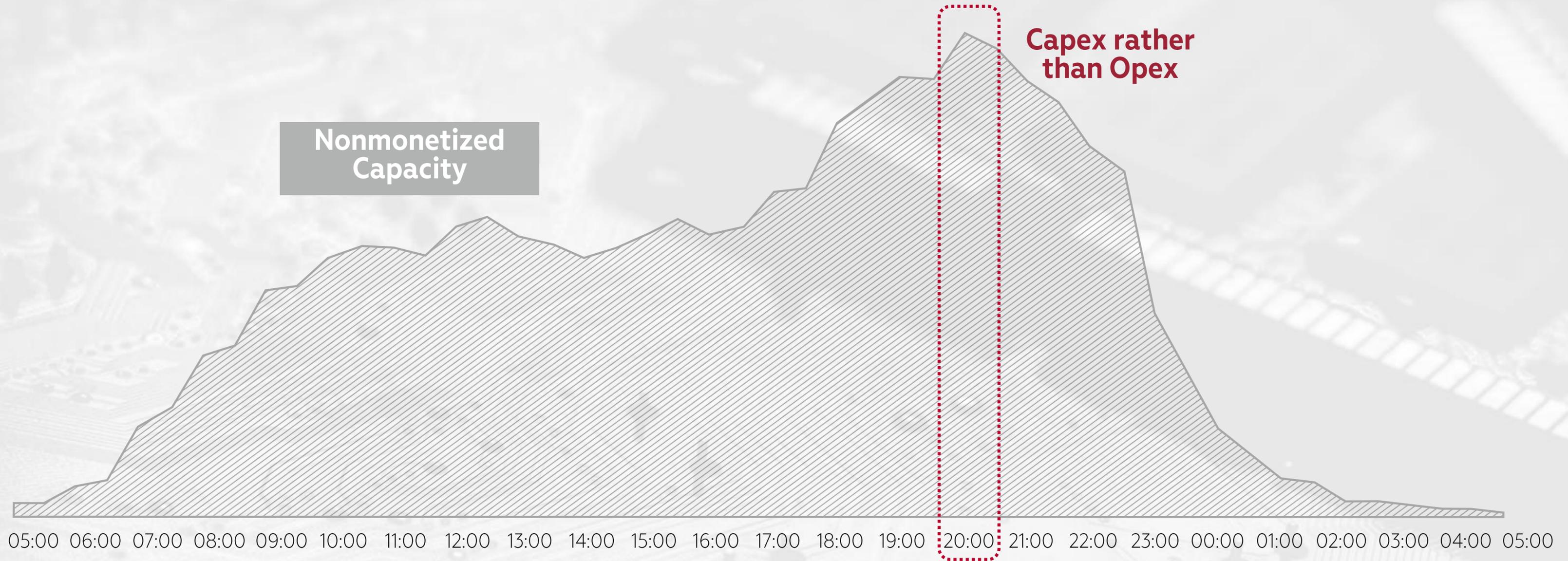


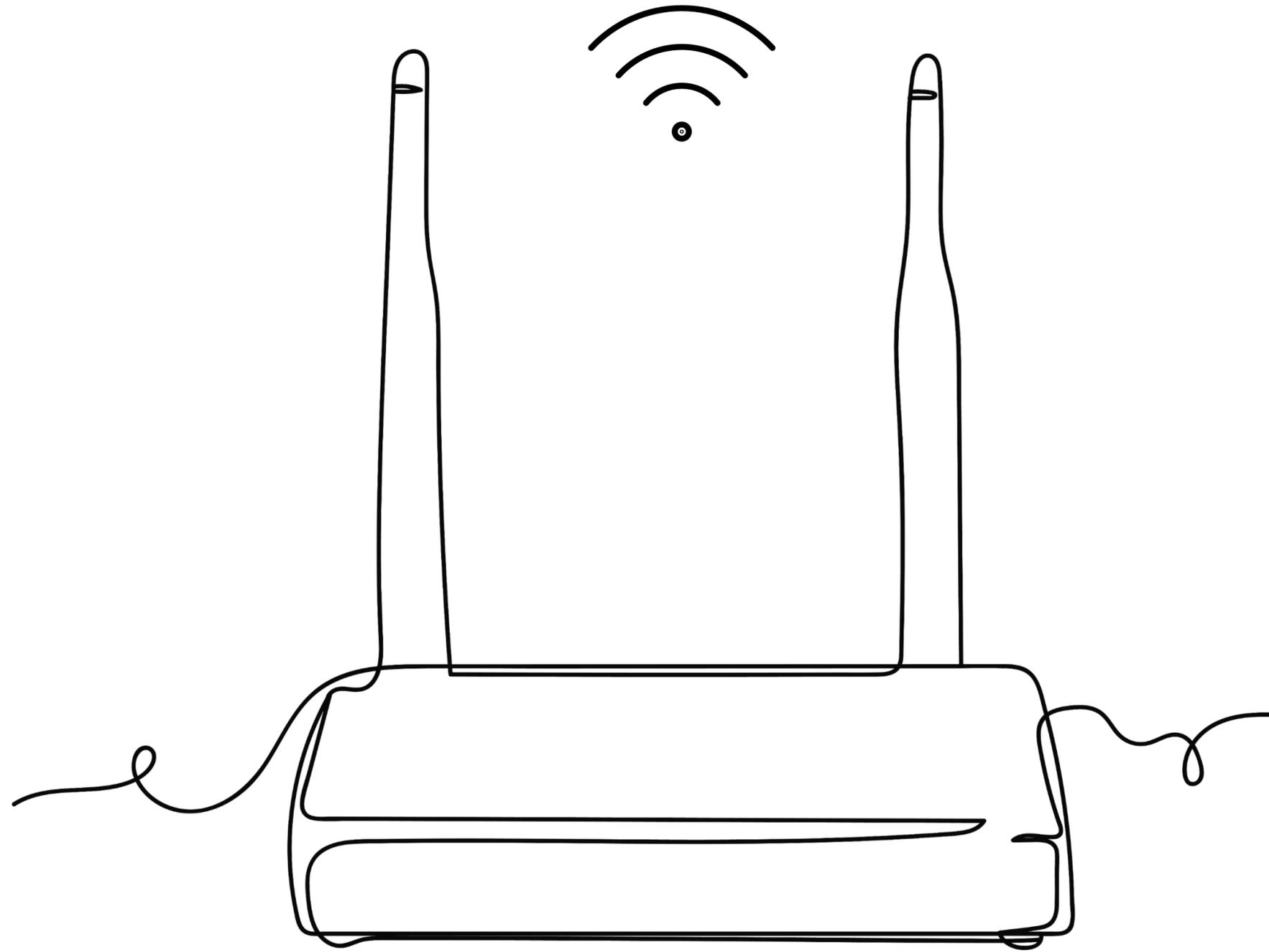
Mobile data usage per mobile broadband subscription per month, GB

Source: OECD, 2023

# Do megabytes have cost?

Network load throughout 24/7

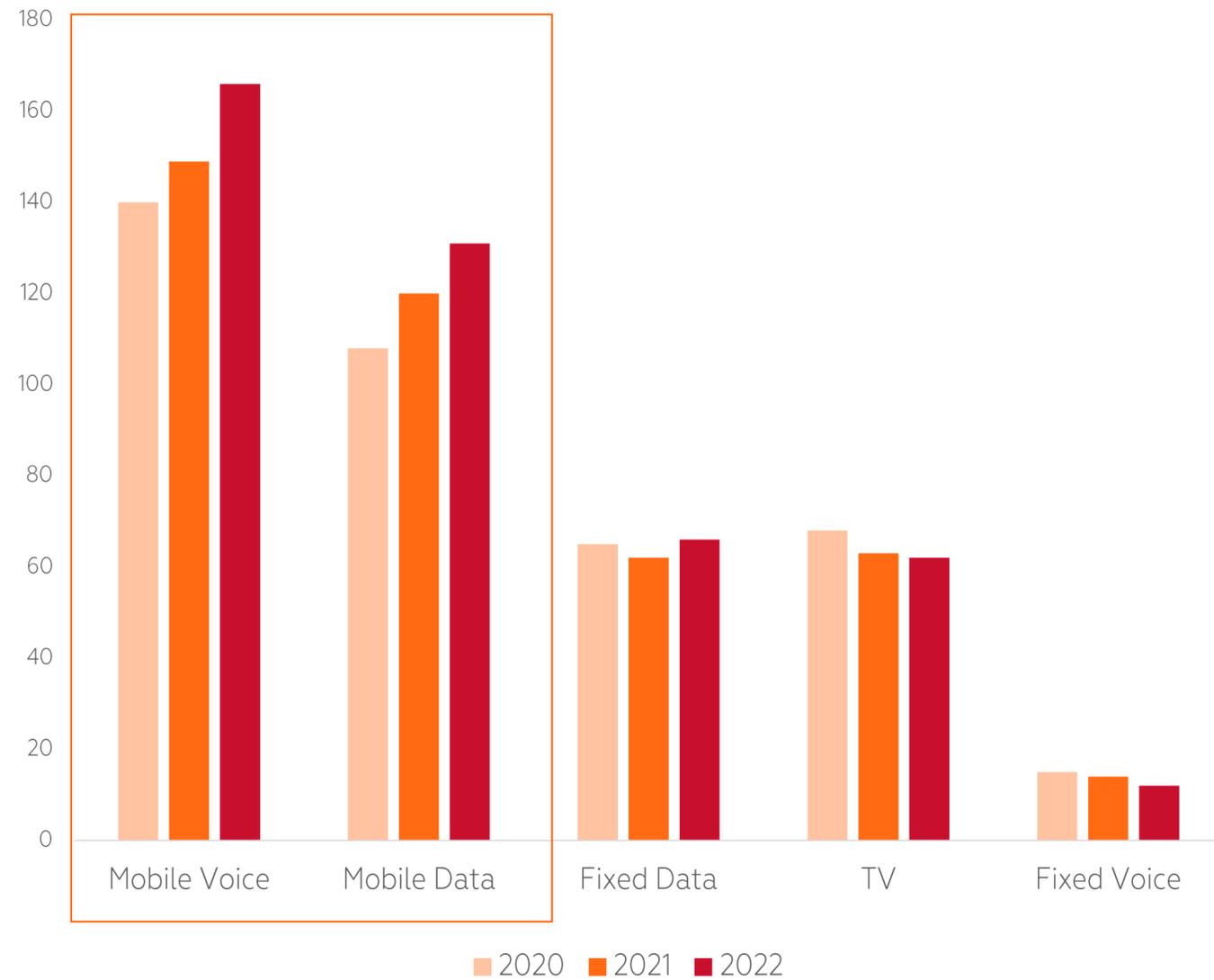




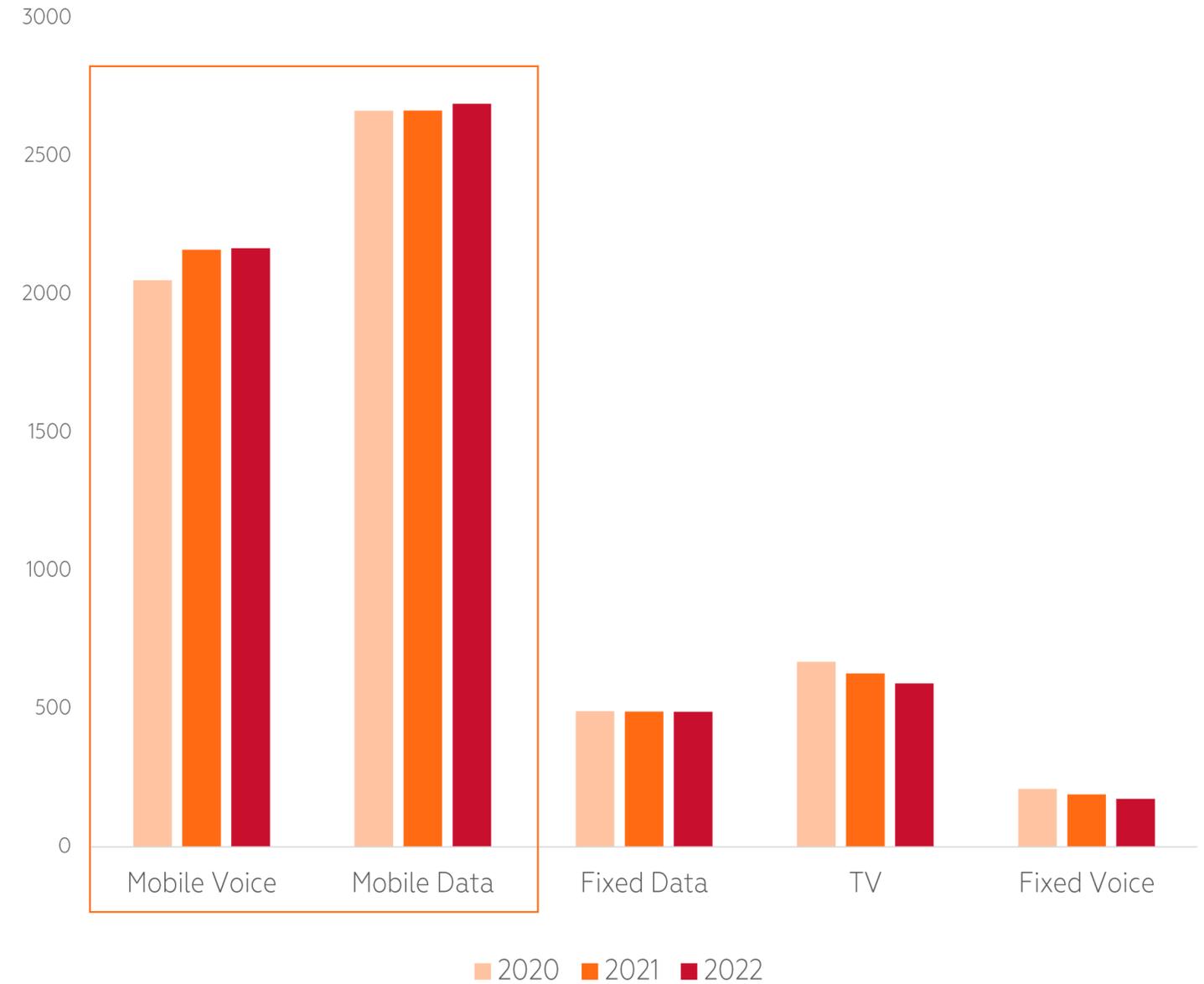
**Wifi is**  
**The Enemy**

# Mobile services have dominated the market for years

Revenue from electronic communications services (M)



Number of connections to electronic communications services at the end of the year (k)



Source: [SPRK.gov.lv](http://SPRK.gov.lv), 2023

# 5G enables a new kind of mobile network



**1G**

Wireless calls



**2G**

SMS and calls inbound and roaming



**3G**

Internet in mobile phone



**4G**

Unlimited internet for home or office



**Speed**

**5G**



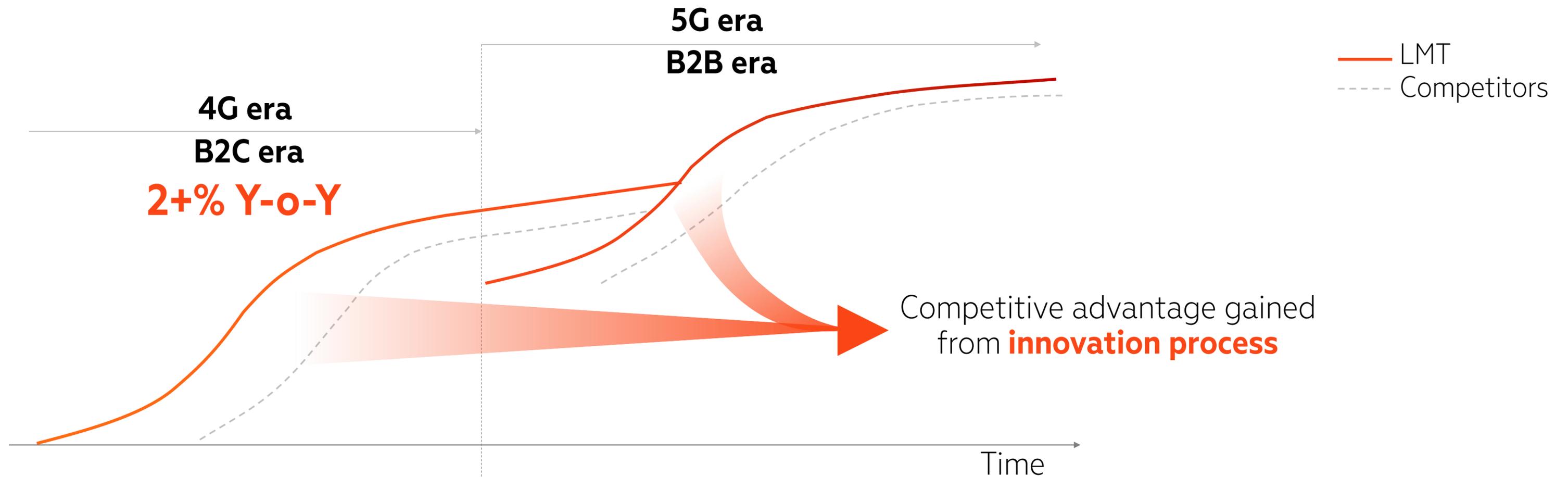
**Sensors**

**Industrial internet**  
Connected factories, cities, cars



**Reliability**

# Transition from 4G to 5G era opens up new business opportunities



- Network excellence
- Customer orientation skills for mass market

- Maintain leadership in terms of network coverage and quality
- Drive digital transformation of enterprise customers

LMT Telecommunications  
business



**1992**



A large, solid orange circle containing text.

LMT  
Telecommunications  
business

A smaller, solid orange circle containing text.

LMT  
Retail &  
Logistics

1992

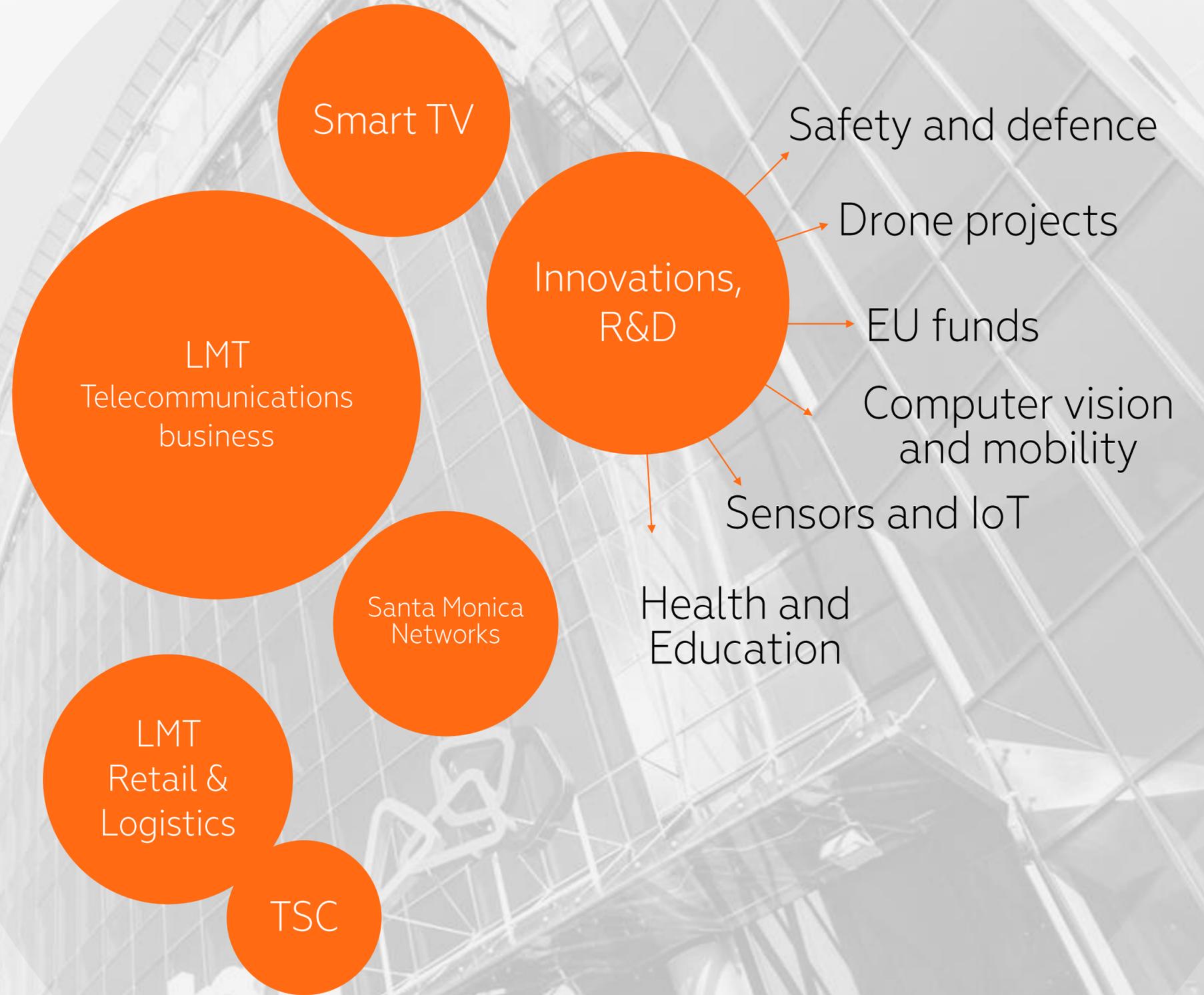
2000

A large, white, three-dimensional 'imt' logo is mounted on the facade of a modern glass skyscraper. The building's facade is composed of a grid of glass panels and metal frames, and the logo is positioned in the lower right quadrant of the image.

## Member of international associations:



## Certificates:

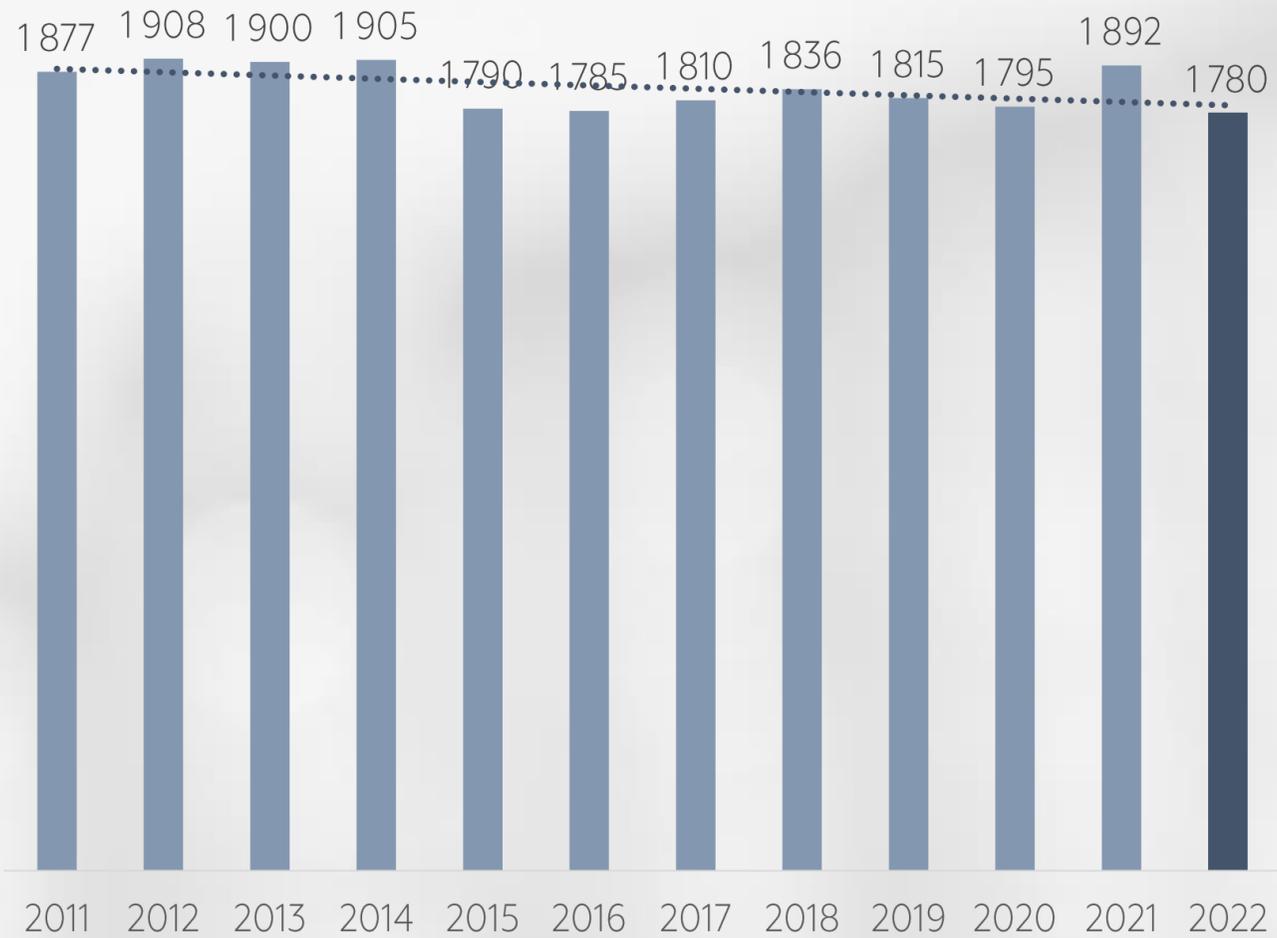


1992

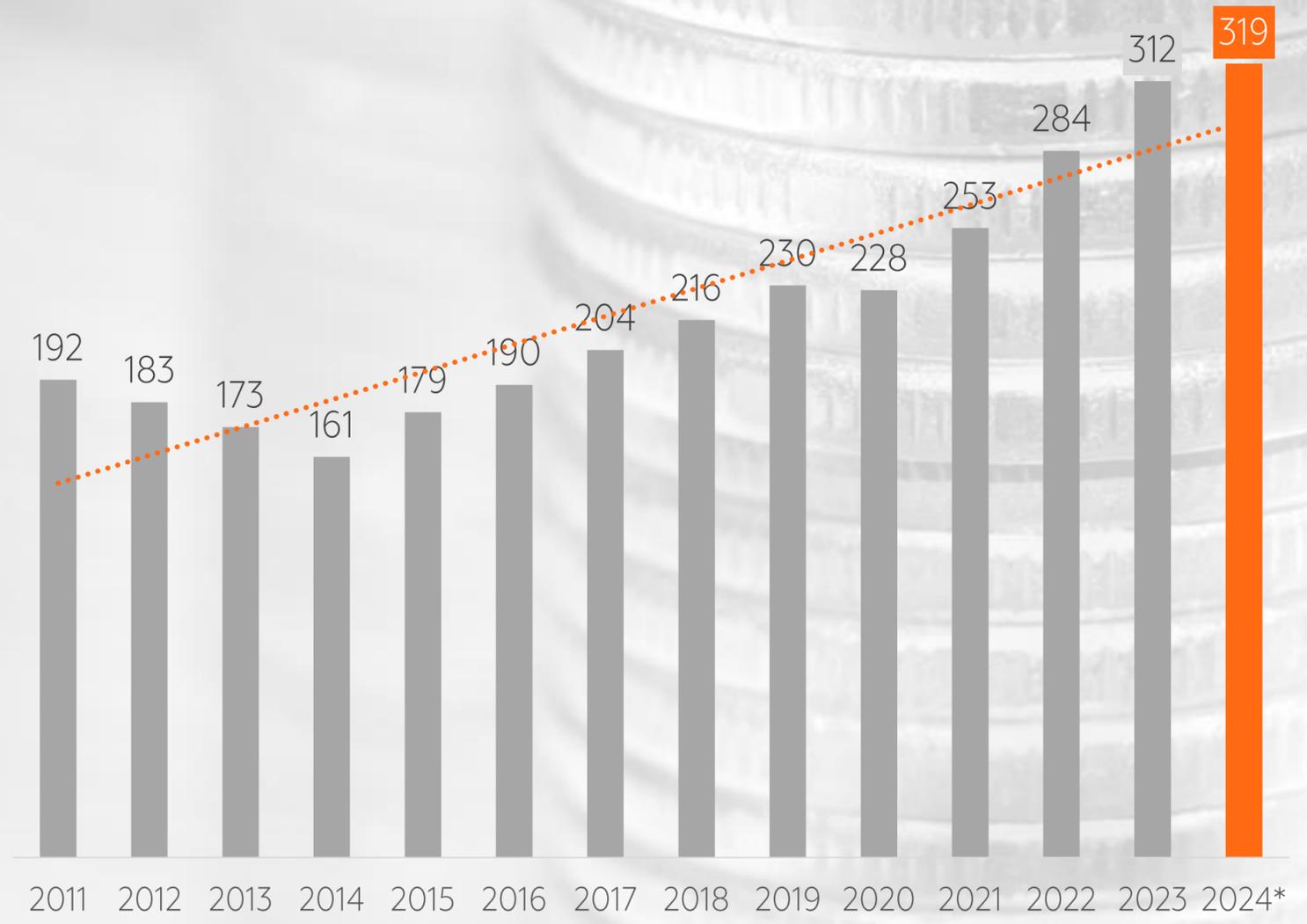
2000

Today

### Global revenues of telecommunication companies worldwide, B\$ 2011-2022



### LMT Group revenue, M€ 2011-2024

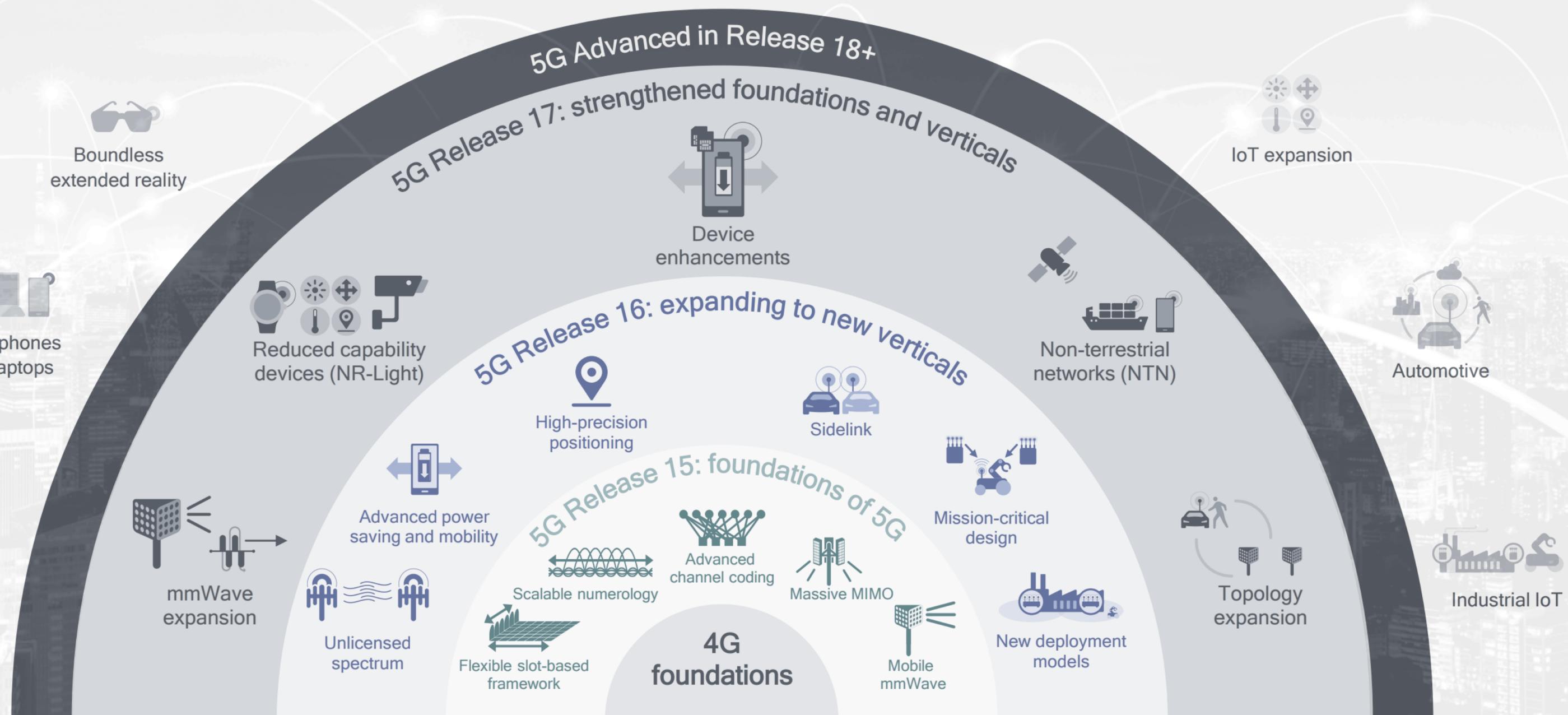


Source: <https://inform.tmforum.org/>

# Transformation from 4G to 5G

Mobile broadband services are improved

New verticals are enabled



Source: Qualcomm, 2022

# LMT 5G test sites

5G Sea Network

Ādaži  
5G defence

RSU Health tech,  
VT/AR/XR

5G EMC Lab

VEFRESH  
Smart City

Bikernieki 5G  
mobility

333  
Drone testbed

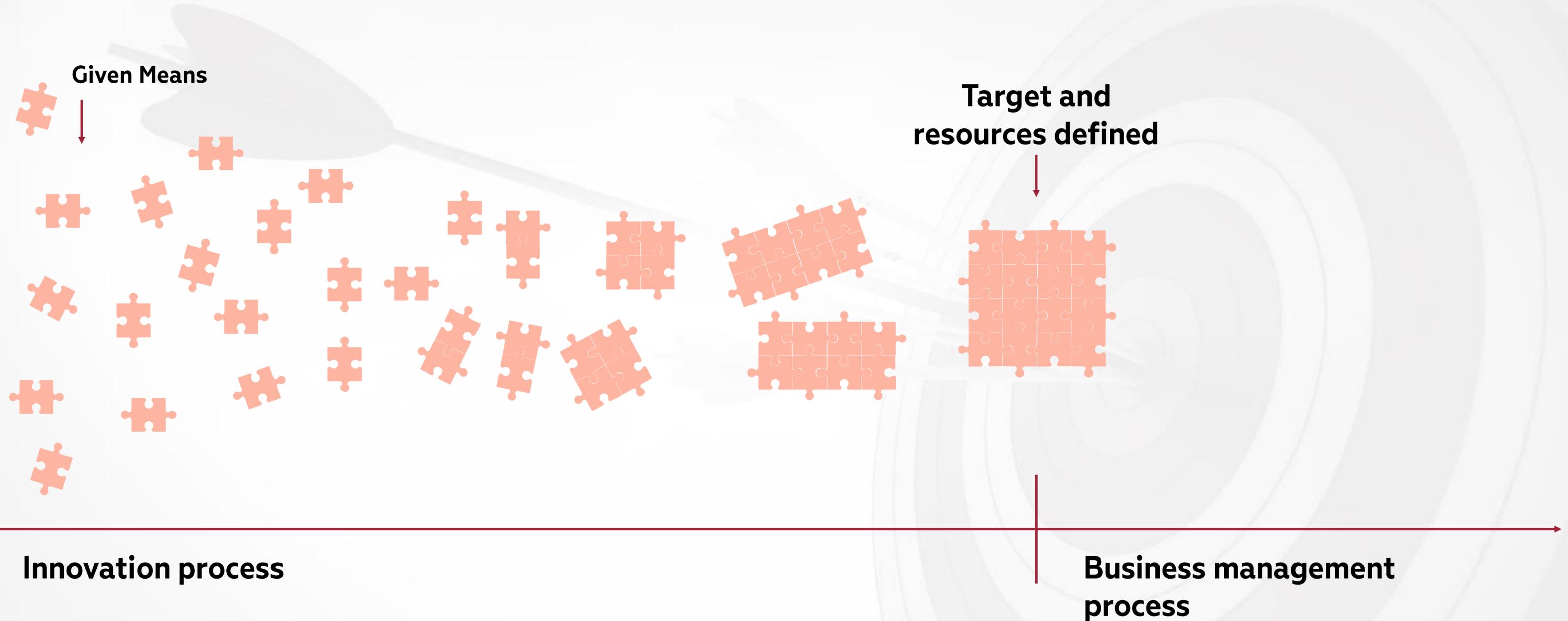
RTU  
IoT, ML/AI, 5G/6G,  
Microchips, OpenRAN

LU / LU MII  
quantum technologies/  
big data

# How to define the goal of innovation?

## Entrepreneurial Thinking (Effectual)

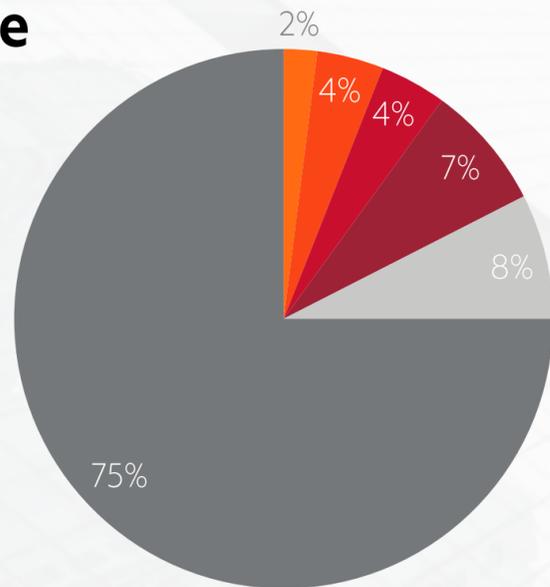
Imagining a possible new end using a given set of means



# In Europe and the US, research and development is funded by large companies

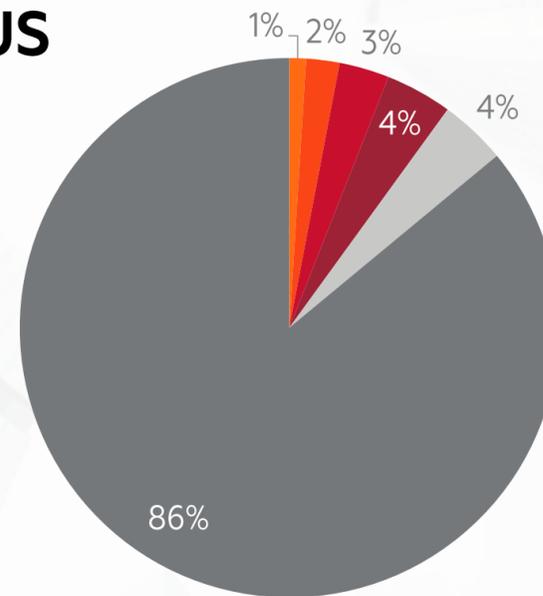
The amount of investment of companies in R&D depending on the number of employees in the company

## Europe



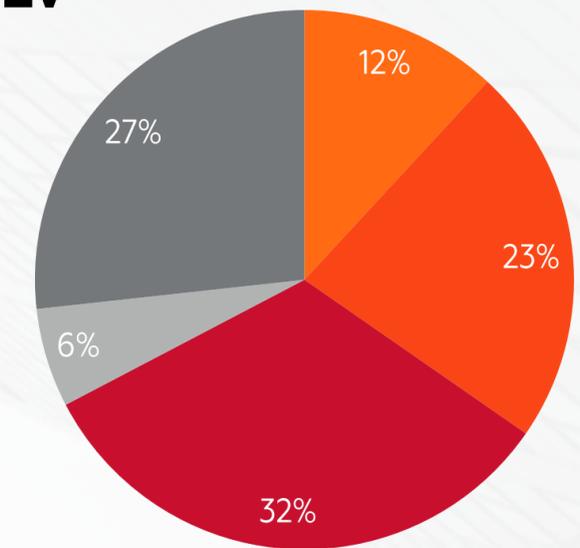
0-19 20-49 50-99 100-249 250-499 >500

## US



0-19 20-49 50-99 100-249 250-499 >500

## LV



1-9 10-49 50-249 250-499 >500

Source: [europa.eu](http://europa.eu), 2022

Source: [nces.nsf.gov](http://nces.nsf.gov), 2020

Source: [stats.oecd.org](http://stats.oecd.org), 2022

# US model

Investments in research and development



Federal funding for R&D

*Planned in 2023*

# 0.76%

of GDP

Source:

<https://www.statista.com>

## Top universities

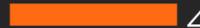
*2022, spending on R&D, billion \$*

- |                                 |            |
|---------------------------------|------------|
| 1. Johns Hopkins University     | <b>3.2</b> |
| 2. University of California, SF | <b>1.7</b> |
| 3. University of Michigan       | <b>1.6</b> |
| 4. University of Pennsylvania   | <b>1.6</b> |
| 5. University of Washington     | <b>1.5</b> |

Source: [universitybusiness.com](https://universitybusiness.com)

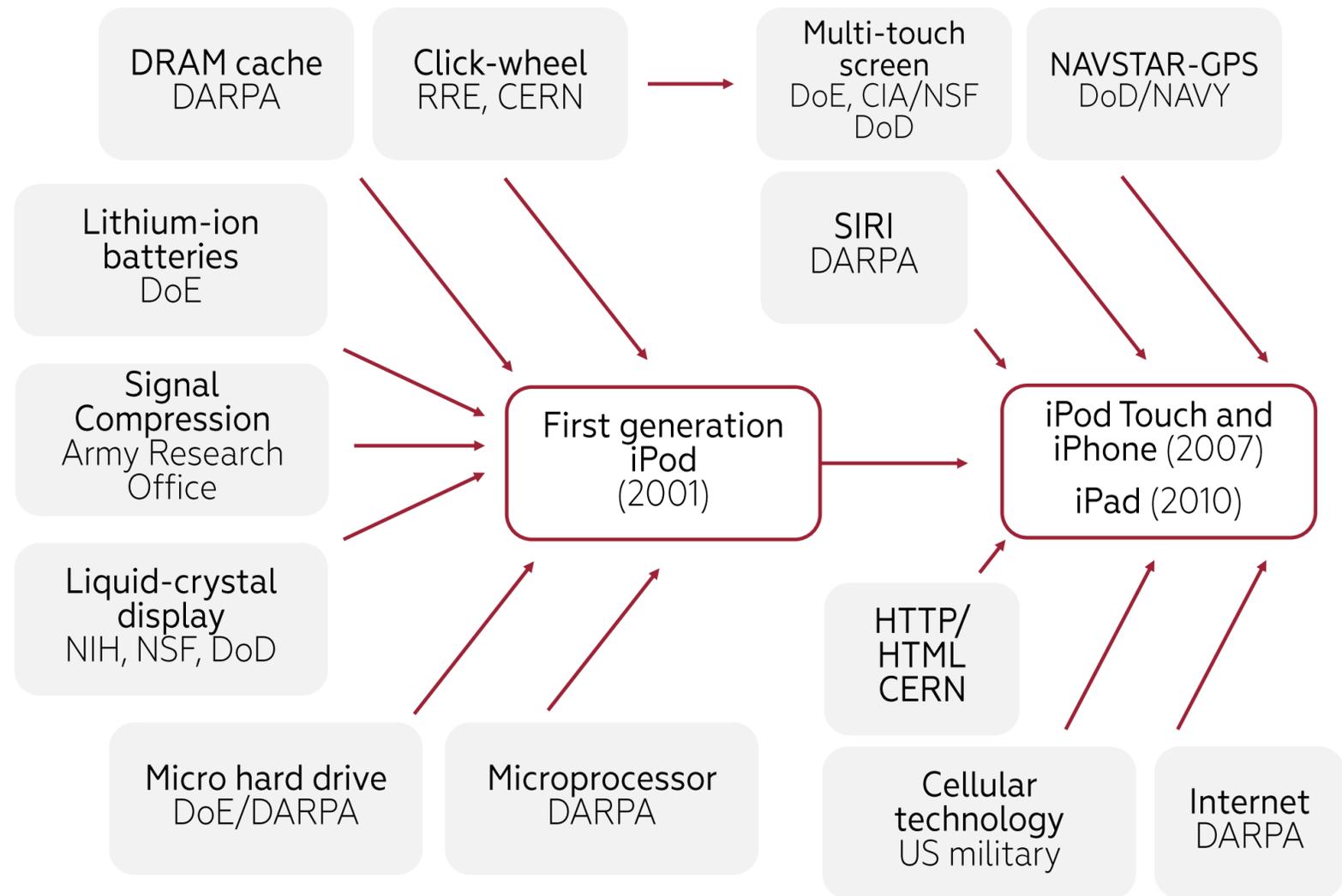
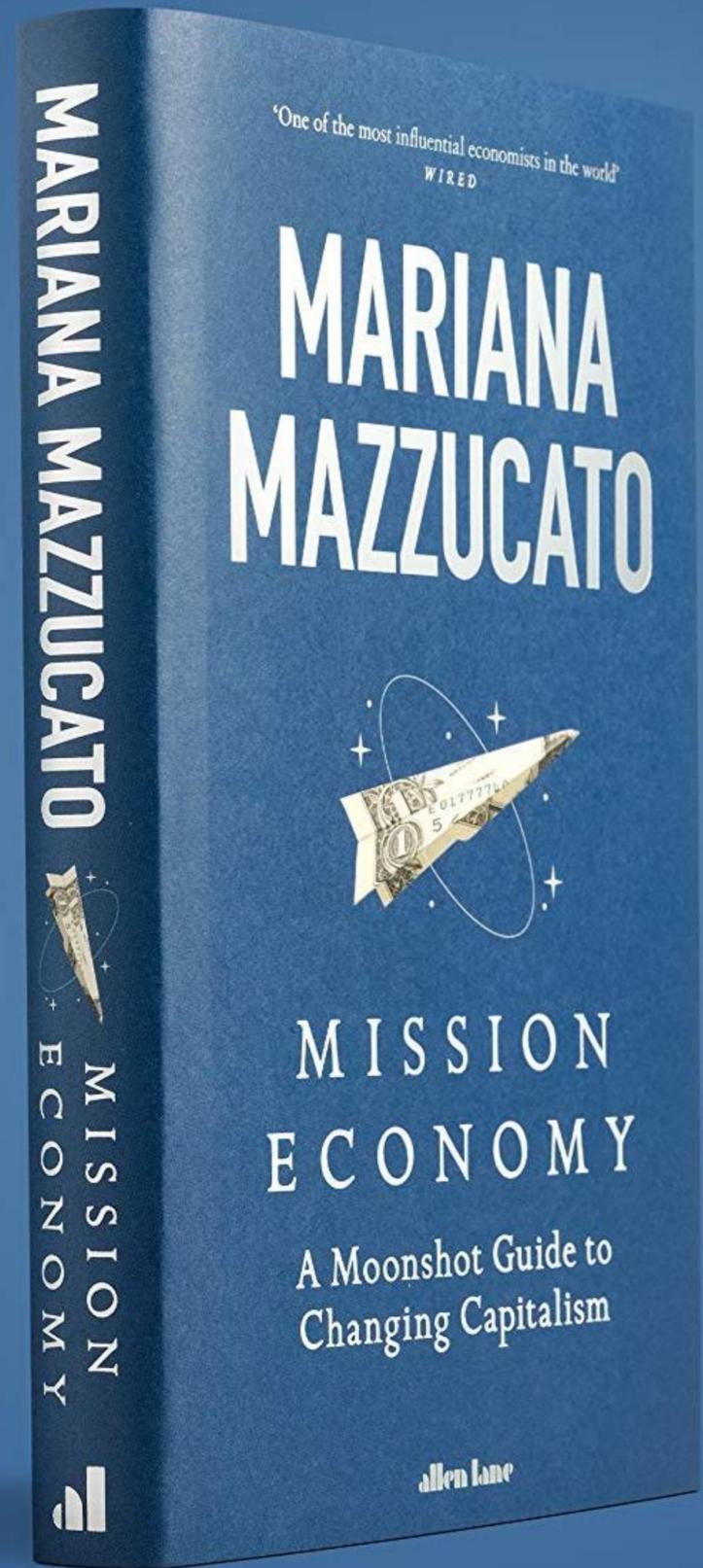
## Top companies

*2022, billion \$*

	R&D expenses	% of turnover
 <b>amazon</b>	 <b>73.2</b>	 14%
 <b>Alphabet</b>	 <b>39.5</b>	 14%
 <b>Meta</b>	 <b>35.3</b>	 30%
 <b>Apple</b>	 <b>27.7</b>	 7%
 <b>Microsoft</b>	 <b>26.6</b>	 13%
 <b>NVIDIA</b>	 <b>7.3</b>	 27%
 <b>BROADCOM</b>	 <b>4.9</b>	 14%
 <b>TESLA</b>	 <b>3.1</b>	 4%
 <b>PEPSICO</b>	 <b>0.8</b>	 1%

Source: [visualcapitalist.com](https://visualcapitalist.com)

# What makes the iPhone so smart?



Source: Mazzucato (2013), p. 109, Fig. 13

## Successful missions 1990-2020



«We want to join  
the EU!»



«We want to join the  
NATO!»

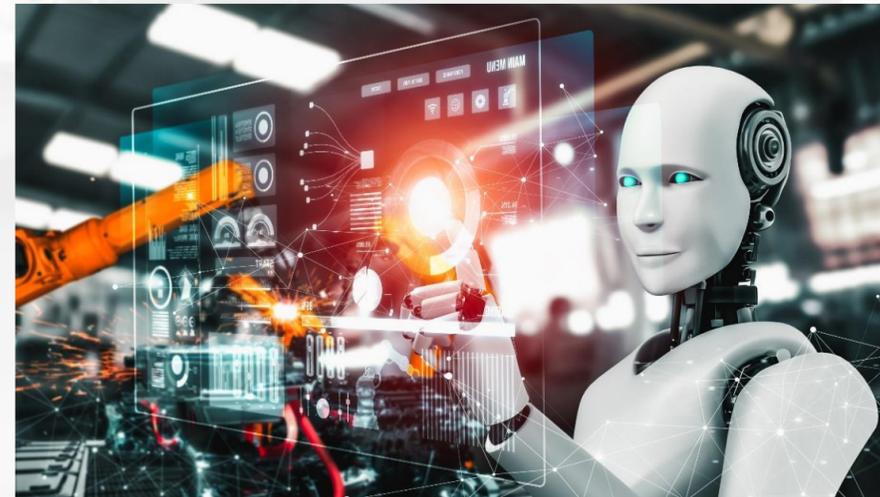


«We want to join the  
EUROZONE!»

# Missions for the development



**Energy  
independence**



**Science and technology  
intensive education and  
production**



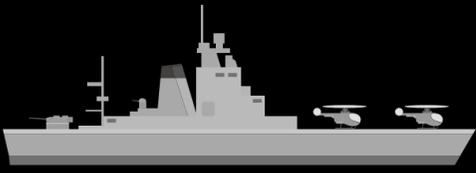
**Modernization of  
defense capabilities**



# First 5G military Test-bed in Europe



# Baltic Sea Riga Bay Coastline



## Training Area Facilities

- FIBUA training site system
- Artillery/Small arms firing range system
- Tactical close air-support training area
- Naval Gunfire Support training (in future)
- Different and extreme terrain conditions

## Military Training Area



## Military Camp Kadaga

50 km

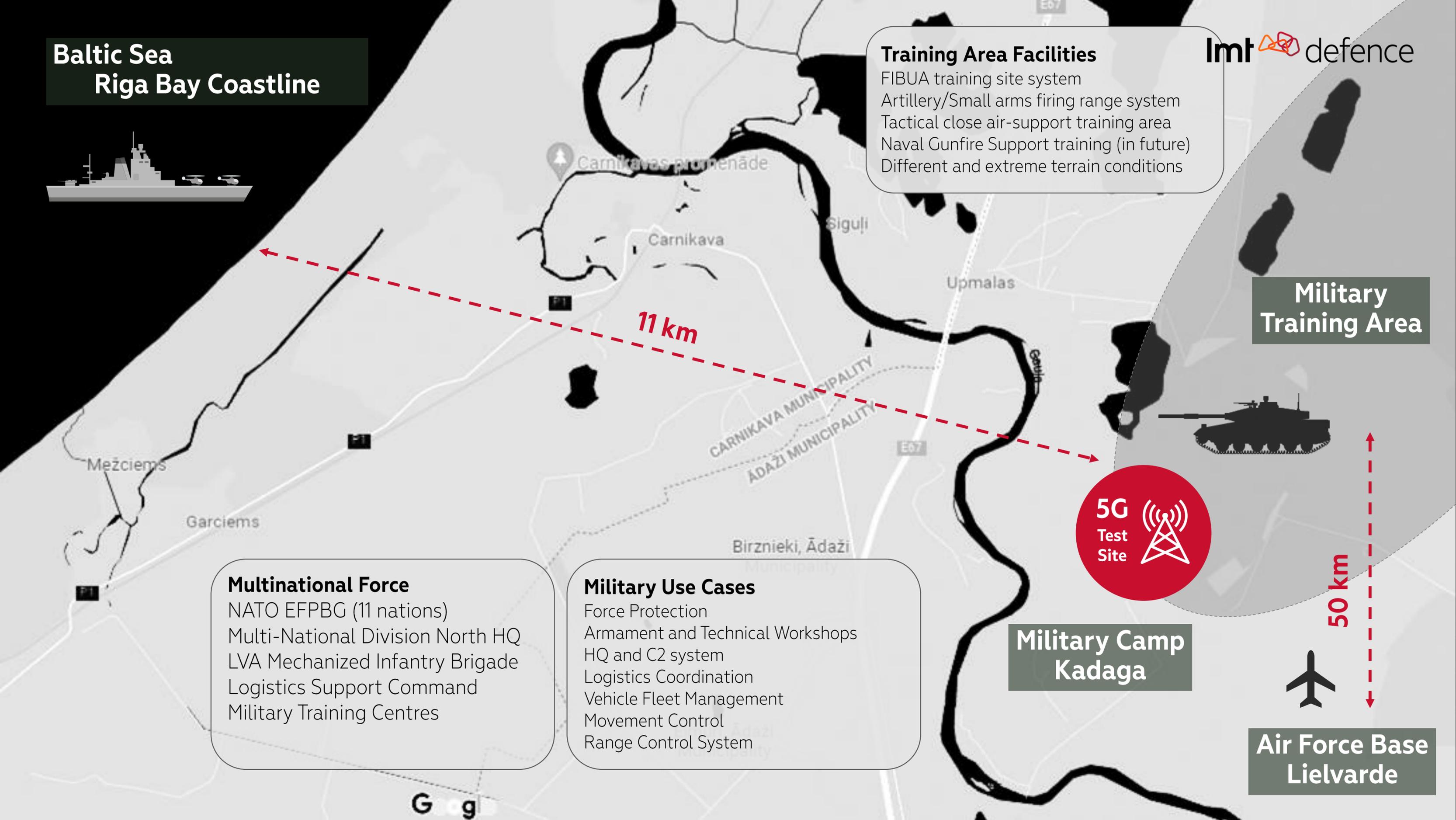
## Air Force Base Lielvarde



11 km

**Multinational Force**  
NATO EFPBG (11 nations)  
Multi-National Division North HQ  
LVA Mechanized Infantry Brigade  
Logistics Support Command  
Military Training Centres

**Military Use Cases**  
Force Protection  
Armament and Technical Workshops  
HQ and C2 system  
Logistics Coordination  
Vehicle Fleet Management  
Movement Control  
Range Control System



# NATO experiment in context of MDO

From 23.10.2023 to 25.10.2023



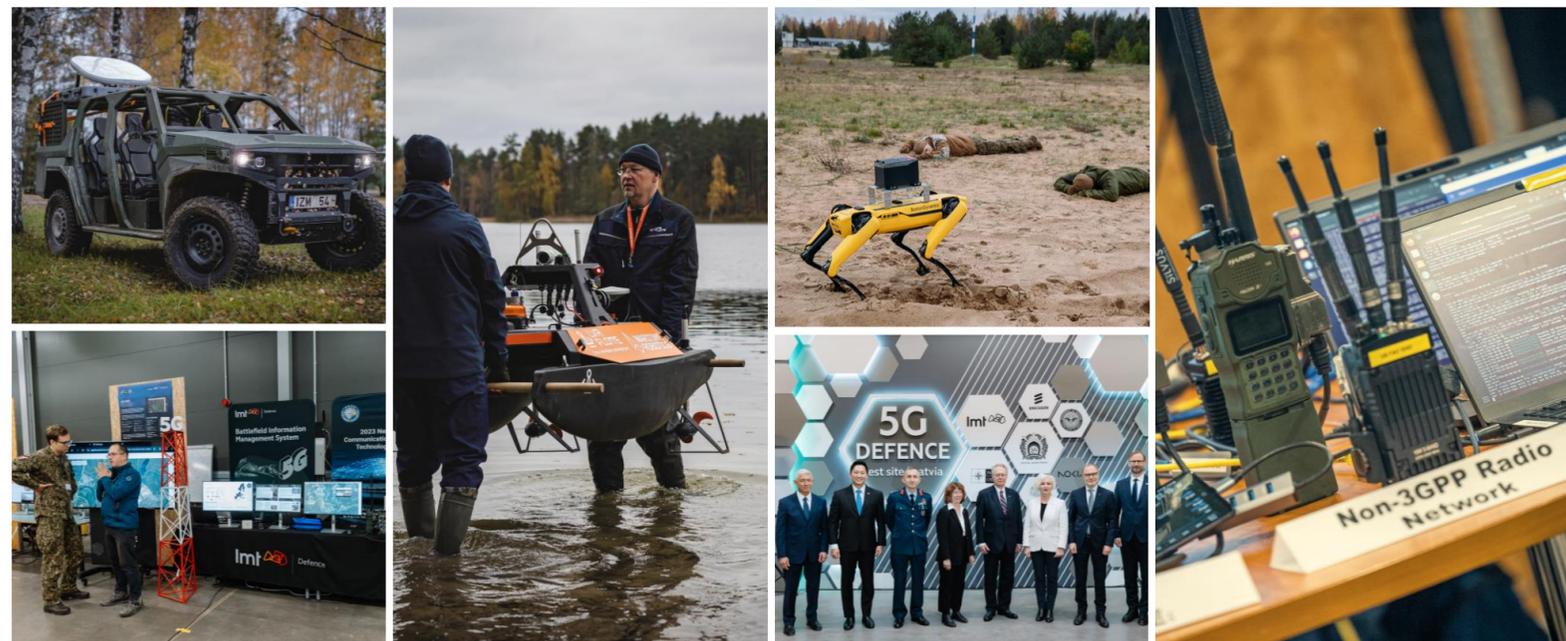
# NATO ACT 2023 and MILCOM 2023



IEEE MILCOM IEEE Military Communications Conference  
30 October - 3 November 2023 // Boston, MA, USA  
Communications Supporting Military Operations in a Contested Environment



# NATO ACT event 2023 in Ādaži Military 5G Test site



# US DoD principal director of «Future G» visiting Ādaži on 24.10.2023





Big Bird  
«Ship to Drone»

2 x 5G bubbles  
«Ship to Ship»

LMT 5G SA  
«ship to shore»

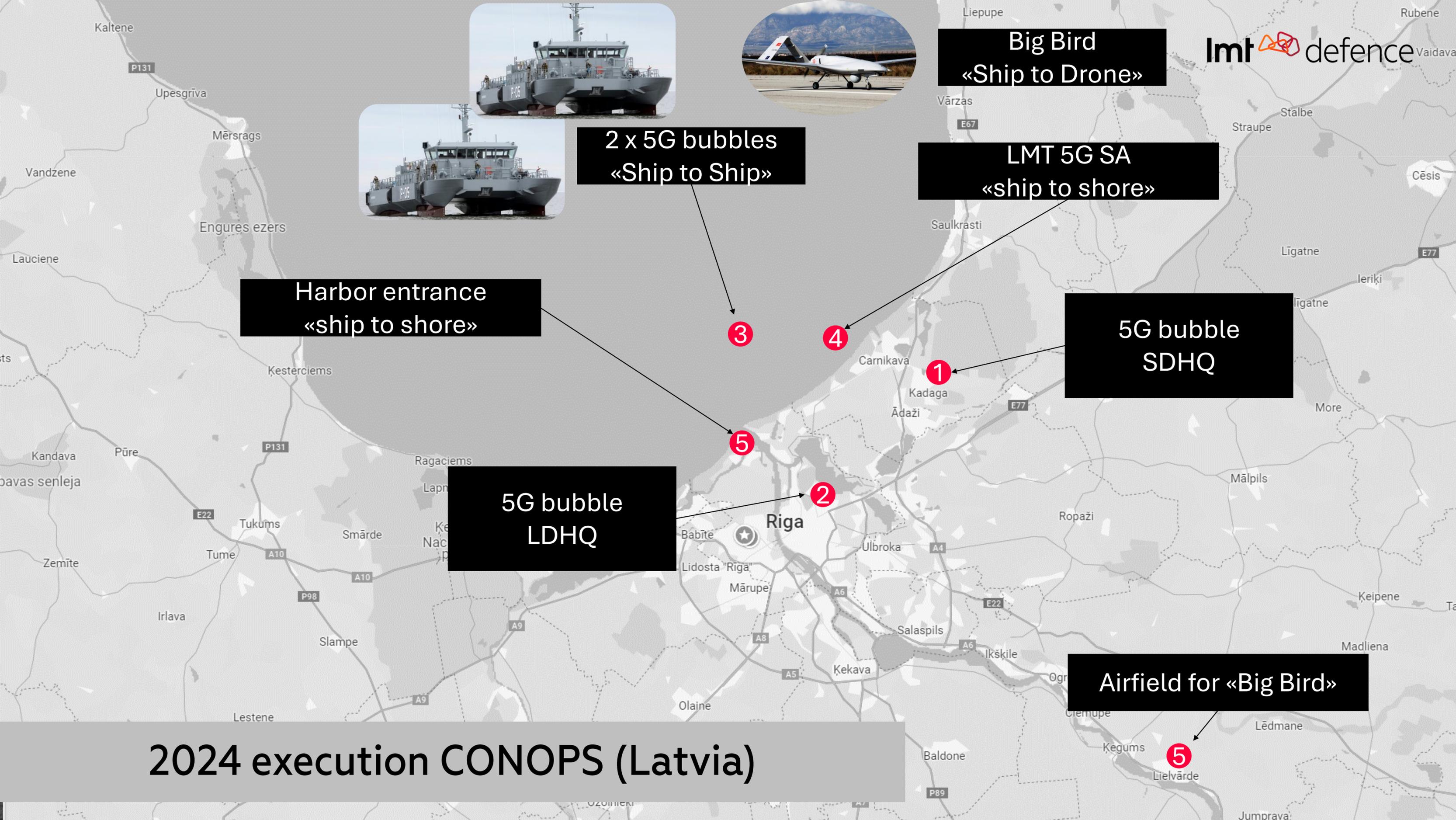
Harbor entrance  
«ship to shore»

5G bubble  
SDHQ

5G bubble  
LDHQ

Airfield for «Big Bird»

# 2024 execution CONOPS (Latvia)

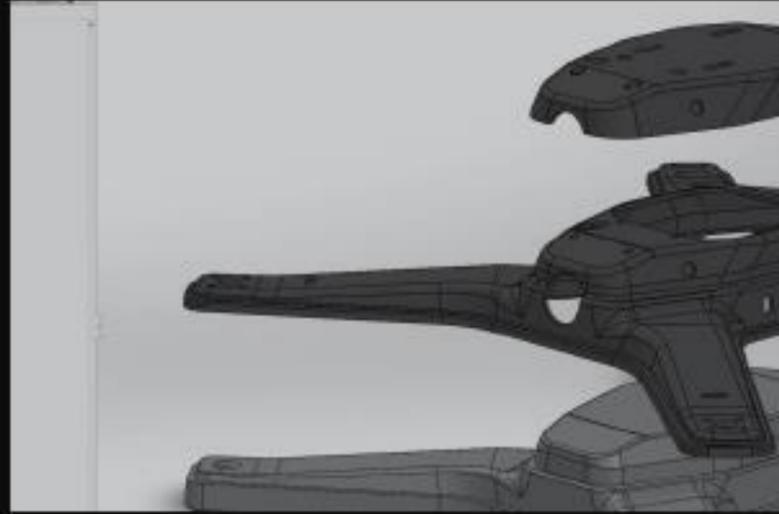


# Strategy – 5G defence use case development





Digitālie risinājumi



Hardware produkti &  
inženierija



Sakari



R&D



Industriālās partnerības



Elektronikas serviss



# Support to Ukraine

- Supporting Ukraine's digitalization efforts
- Cooperation with NGO's supporting UAV development for UA Armed Forces (Aerorazvydka)
- Support to and cooperation with SOF and GUR



Aerorazvydka

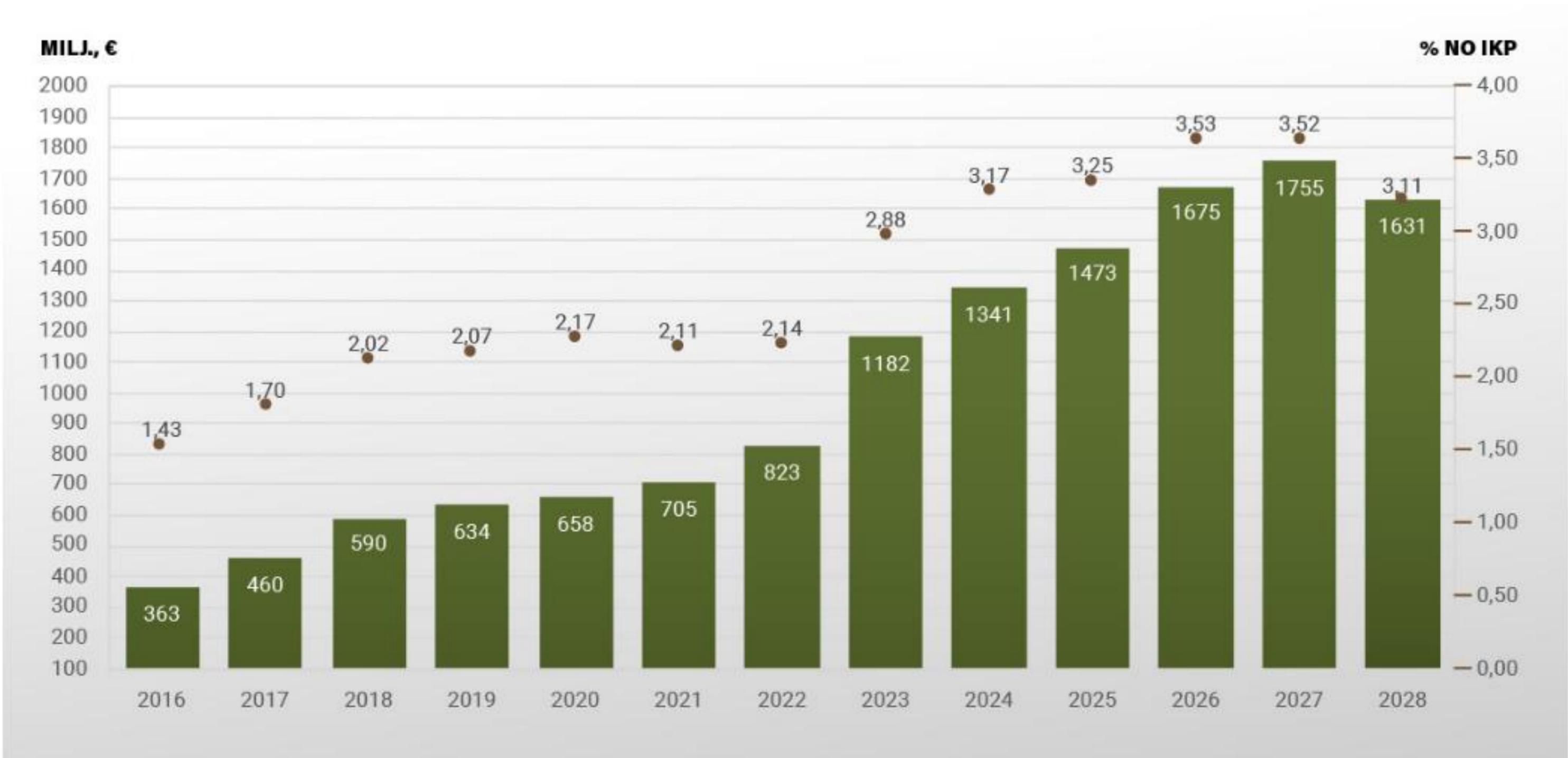


UA Special Operation Forces



Main Directorate of Intelligence





2024. gada aizsardzības budžets ir plānots **1 128 380 620 euro** jeb **2.4%** apmērā no IKP. Aizsardzības budžets 2027. gadā pieaugs līdz 3 % no IKP.

## **AIZSARDZĪBAS MINISTRIJAS BUDŽETA PRIORITĀTES**



### **Pilnveidot NBS kaujas spējas:**

- vidēja rādiusa pretgaisa aizsardzību
- krasta aizsardzību
- tālās darbības raķešu artilērijas sistēmas



### **Turpināt ieviest valsts aizsardzības dienestu un pilnveidot NBS rezervistu sistēmu**



### **Attīstīt infrastruktūru, tostarp militāro poligonu «Sēlija»**



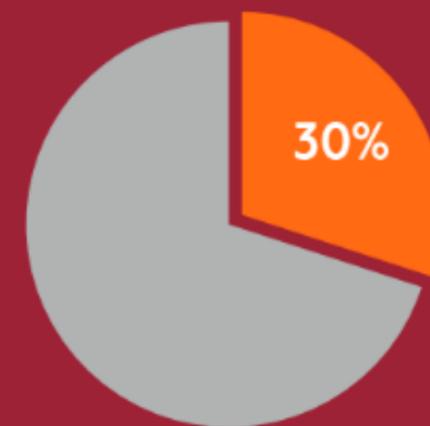
### **Attīstīt visaptverošas valsts aizsardzības sistēmu**

\*papildu aizsardzības budžetam ārpus fiskālās telpas ieplānots 74. resorā "Gadskārtējā valsts budžeta izpildes procesā pārdalāmais finansējums" 200 milj. euro.

# Security of Supply & Latvian defence industry

## Ministry of Defence Security of Supply Policy

National Defence Concept since 2016 foresees involvement of local companies in the equipment production and maintenance cycles in order to ensure continuity of supplies in the event of crisis







Ministry of Defence  
Republic of Latvia

## State Defence Corporation

State Defence Corporation, LLC (SDC) (SIA "Valsts aizsardzības korporācija") is a limited liability company whose aim is to support long-term development of national military industry in Latvia.

Strategic mission of SDC is to manage state defence industry investments and coordinate the development of Latvia's military production policies vital for the growth of national military industry and sustainability of supply chains.

## Latvijas un citu valstu kopīgais munīcijas ražošanas projekts no EK saņem 41 miljonu eiro

Dalīties:    

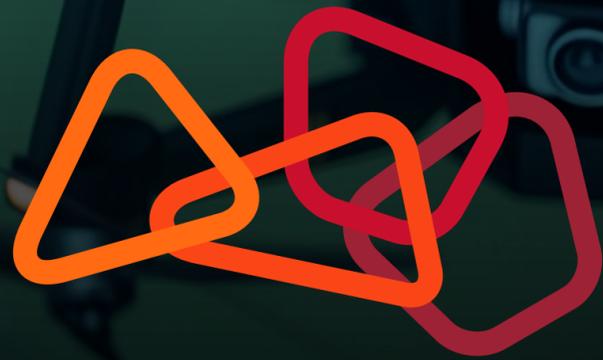


Francijas munīcijas fabrika

Foto: AFP, LIONEL BONAVENTURE



imt



THINK - DO