TOPIO
NETWORKS

Supercharge Your Strategy and Innovation
With Carolus 5G Radar
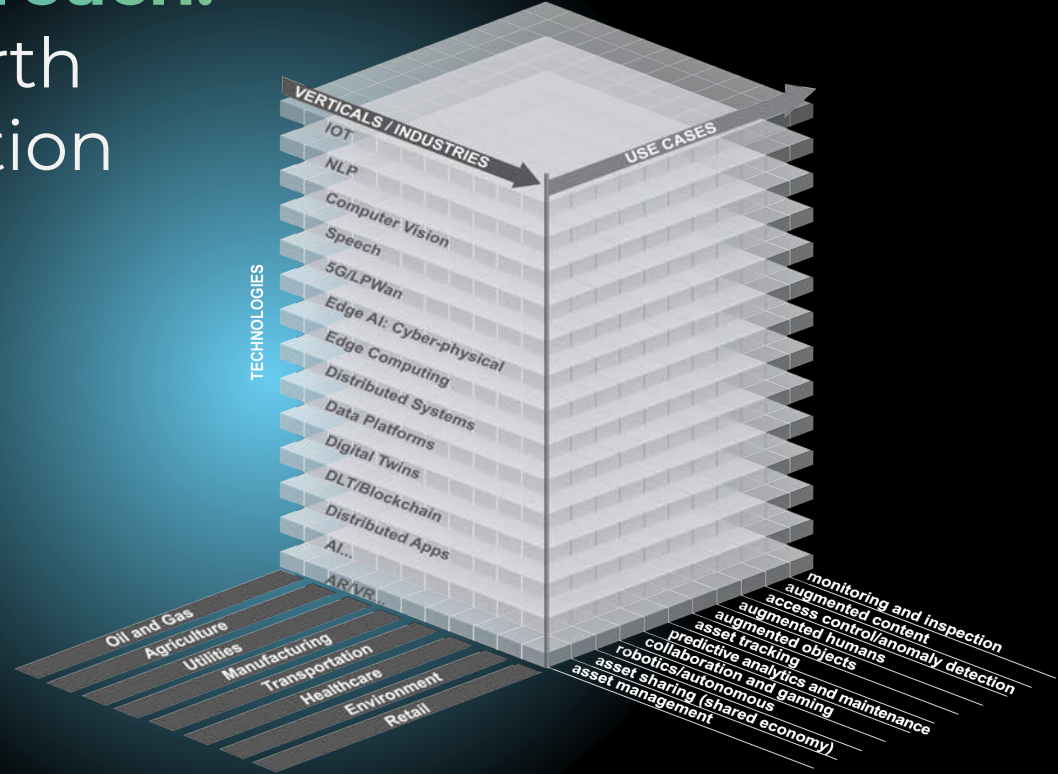
Carolus Radar
We help you master digital transformation

Our unique use cases methodology combined with our ability to drive real time and actionable insights is the best way to keep pace with the disrupting forces of the market by:

▶ **Shortening time to market**

▶ **Enabling better company innovation**

▶ **Understand "hype cycles" dependent on technology and business drivers**

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Topio Networks' Carolus
Technologies

- 5G

- Edge Computing

- Edge Devices / Wearables

- Edge AI

- Application Management

- Data Platform

- Artificial Intelligence

- Blockchain / DLT

- Computer Vision

- Audio Processing

- AR

- VR

- WAN

- PAN

Topio Networks' Carolus
Verticals

- **Retail**
- **Fintech**
- **Manufacturing**
- **Consumer**
- **Automotive**
- **Energy**
- **Transportation**

- **Education**
- **Government**
- **Smart City**
- **Agriculture**
- **Supply Chain**
- **Logistics**
- **Pharmaceutical**

- **Healthcare**
- **Defense**
- **Arch Eng. Constr.**
- **Real Estate**
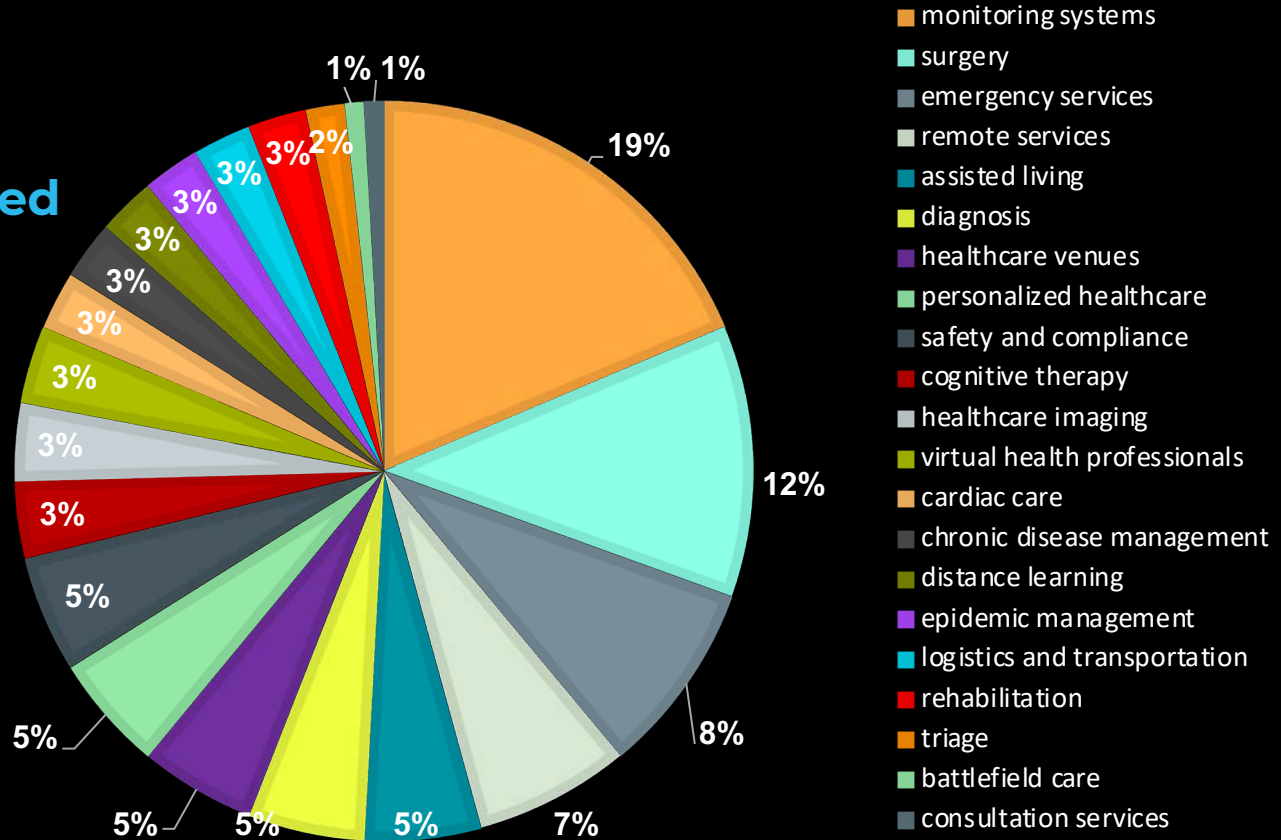- **Telco**
- **Natural Resources**
- **Aerospace**
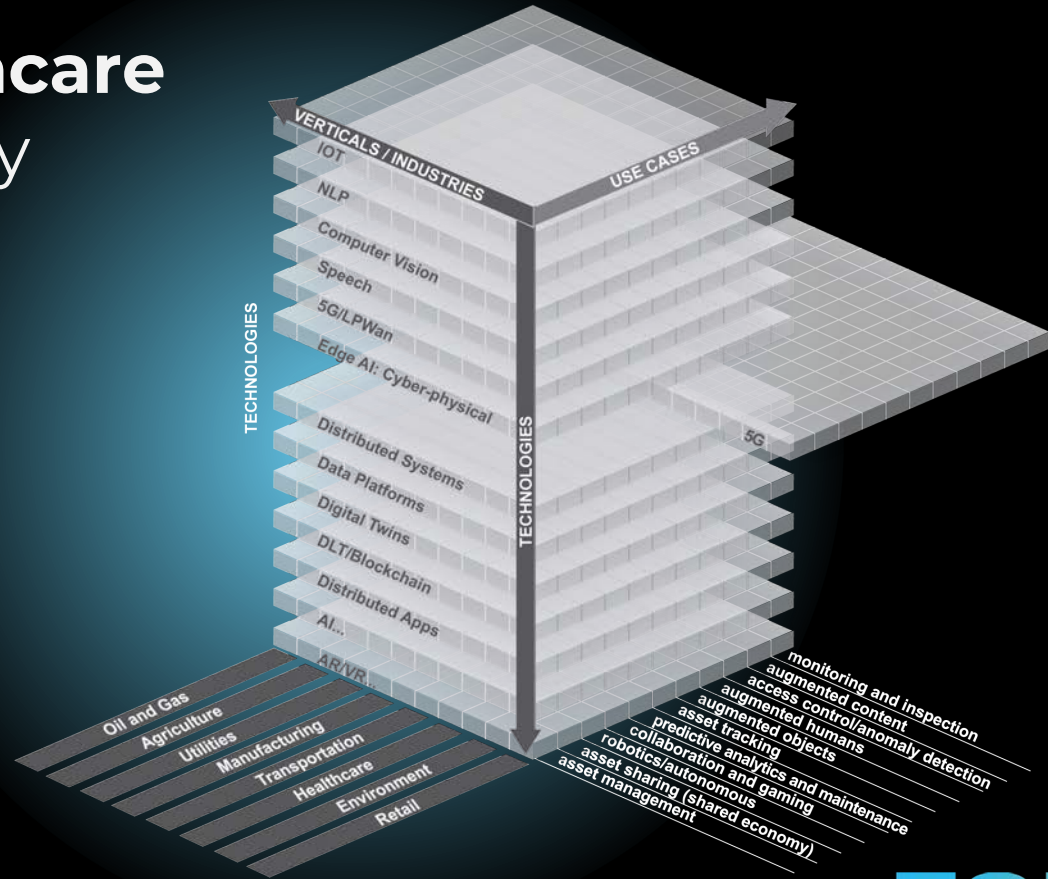
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Case Study:
Detail & Rank *150* 5G Healthcare Use Cases

Use Case	Business Lines	Topio Networks Use Cases Type	Readiness Level
5g smart diabetes systems	chronic disease management	monitoring and inspection	Early Market
5G-enabled hospitals	healthcare venues	command and control	Early Market
aged care trackers	monitoring systems	Augmented humans	Wide Adoption
ambient assisted living	assisted living	command and control	Wide Adoption
ar-assisted surgery	surgery	Augmented Objects	Trials
battlefield medical care	battlefield healthcare	command and control	Proof of Concepts
bedless hospitals	healthcare venues	command and control	Early Market
behavioral recognition	monitoring systems	Augmented humans	Early Market
cardiovascular monitoring	monitoring systems	Augmented humans	Proof of Concepts
care robots	assisted living	robotics/autonomous	Early Market
cbt-based desensitization therapies	cognitive therapy	Augmented humans	Trials
cbt-based distraction therapies	cognitive therapy	Augmented humans	Trials
clinical data management	personalized healthcare	monitoring and inspection	Wide Adoption
clinical decision support	remote services	predictive analytics	Wide Adoption
computer-assisted surgery	surgery	Augmented Objects	Early Market

Case Study: 5G Healthcare
Use Case by Business Line

Healthcare Business Lines Involved With 5G

- monitoring systems
- surgery
- emergency services
- remote services
- assisted living
- diagnosis
- healthcare venues
- personalized healthcare
- safety and compliance
- cognitive therapy
- healthcare imaging
- virtual health professionals
- cardiac care
- chronic disease management
- distance learning
- epidemic management
- logistics and transportation
- rehabilitation
- triage
- battlefield care
- consultation services

19%
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3%
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3%
3%
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1% 1%

Case Study: 5G Healthcare
Readiness Level by Business Lines

ASSISTED LIVING

| Proof of Concepts	Trials	Early Market	Wide Adoption
		care robots	ambient assisted living services
		multi-service companion robots	long-term elder-care
		home-based coordinated care management	independent living
Proof of Concepts	Trials	Early Market	Wide Adoption

EMERGENCY SERVICES

Proof of Concepts	Trials	Early Market	Wide Adoption
			connected ambulance
		critical emergency operations	emergency medical services
drone-based emergency response		public safety operations	emergency service response
zero-visibility environment management	drone-based emergency response	real time emergency care	emergency treatment
Proof of Concepts	Trials	Early Market	Wide Adoption

Case Study: 5G Healthcare
Use Case by Type

Distribution of 5G Healthcare By Use Case Type
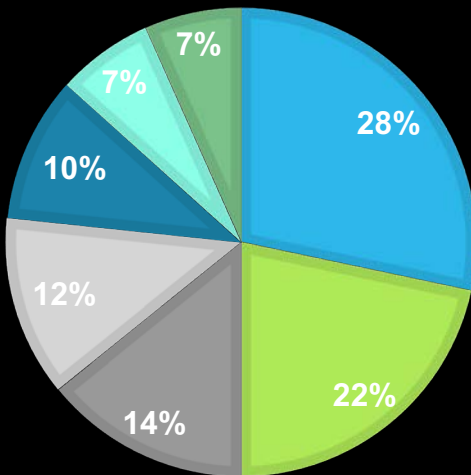
- augmented humans
- command and control
- predictive analytics
- robotics/autonomous
- collaboration and gaming
- augmented objects
- monitoring and inspection

Case Study: 5G Healthcare
Sourcing Products & Projects by Use Case

Command and Control Use Cases		Rank
ambient assisted living	assisted living	Wide Adoption
long-term elder-care	assisted living	Wide Adoption
independent living	assisted living	Wide Adoption
connected ambulance	emergency services	Wide Adoption
emergency medical services	emergency services	Wide Adoption
emergency service response	emergency services	Wide Adoption
emergency treatment	emergency services	Wide Adoption
remote emergency medical response	emergency services	Wide Adoption
remote healthcare centers	healthcare venues	Wide Adoption
telemedicine centers	healthcare venues	Wide Adoption
intrahospital monitoring	healthcare venues	Wide Adoption
smart hospitals	healthcare venues	Early Market
critical emergency operations	emergency services	Early Market
home-based coordinated care management	assisted living	Early Market
public safety operations	emergency services	Early Market
real time emergency care	emergency services	Early Market
5G-enabled hospitals	healthcare venues	Early Market
bedless hospitals	healthcare venues	Early Market
rehabilitation therapy	rehabilitation	Early Market
remote surgeon	surgery	Early Market
real-time surgical procedures	surgery	Early Market
virtual care clinics	virtual healthcare professionals	Early Market
drone-based emergency response	emergency services	Trials
smart transportation	logistics and transportation	Trials
wearable cardioverter-defibrillator	monitoring systems	Proof of Concepts
battlefield medical care	battlefield healthcare	Proof of Concepts

Companies in Ambient Assisted Living

Cerner	https://www.topionetworks.com/companies/cerner-corporation-3e122f809e597c100000068b
CVS Health	https://www.topionetworks.com/companies/cvs-health-53154fc700c003055301b233
MicroShield 360	
Walgreens	https://www.topionetworks.com/companies/walgreens-3e122f809e597c1000000058
Honeywell	https://www.topionetworks.com/companies/honeywell-international-3e122f809e597c1000000f9e
ABB Group	https://www.topionetworks.com/companies/abb-5571e958ace980dc5500ba1b
LANTRONIX INC	https://www.topionetworks.com/companies/lantronix-593ab31178e0022d37b7fbd0
Coordinated Care Inc	
Koninklijke Philips NV	
Moxie.one	
Sony	https://www.topionetworks.com/companies/sony-3e122f809e597c1000000233
Signify Health	
Assisted Living Technologies	
iRobot	https://www.topionetworks.com/companies/irobot-3e122f809e597c10003a6c65
Siemens	https://www.topionetworks.com/companies/siemens-531edf5bf01ff50453037fdd
Verizon	https://www.topionetworks.com/companies/verizon-3e122f809e597c10000003e4
Intuition Robotics	https://www.topionetworks.com/companies/intuition-robotics-58aaccdb2033d420e1000012
Blue Frog Robotics	https://www.topionetworks.com/companies/blue-frog-robotics-570f32ce2453d6b4e0000003
Aeolus Robotics	https://www.topionetworks.com/companies/aeolus-robotics-5a729ff4105eb50e6d1eb8a7
Luvozo	
Samsung	https://www.topionetworks.com/companies/samsung-50575c9a9029a86e0e01116e

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User Case Level Map
Choose: · One Technology x all use case types x all industries   · One Vertical x all use case type x all technologies   · One Use Case Type x all Technologies x all verticals   Includes 2 hours of analyst advisory per quarter
Company & Project Level Data
Market Fit Analysis (add on)
Market Fit Analyst (stand alone)

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Contact **Topio Networks**

Simon Cunnigham – **CEO Nonvoice**
simonb@nonvoice.com

www.topionetworks.com

2930 Domingo Ave #244
Berkeley, CA 94705