

Explore, Collaborate, Innovate

# Automotive Industry case studies

OI Council platform with  
NineSigma

# Case studies

Read more about our cases in the industry seeking open innovation transformation and enhancement

Overview on NineSigma case studies in the Automotive industry



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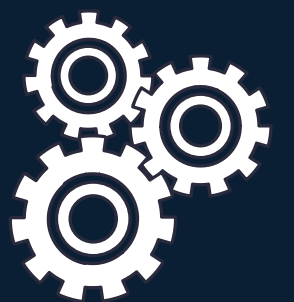
**01** Case 1: The Future Impact of Blockchain on the Automotive Industry

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**02** Case 2: The Future Impact of Quantum Computing in the Automotive Industry

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**03** Case 3: Mechanical component manufacturer



# Case 1: The Future Impact of Blockchain on the Automotive Industry

# Case Study 1: The Future Impact of Blockchain on the Automotive Industry

Research on the relationship between noteworthy technology trends and your business

- ① Provide the topic of research in automotive industry: Impact of blockchain in the automotive industry



- ② Survey questions

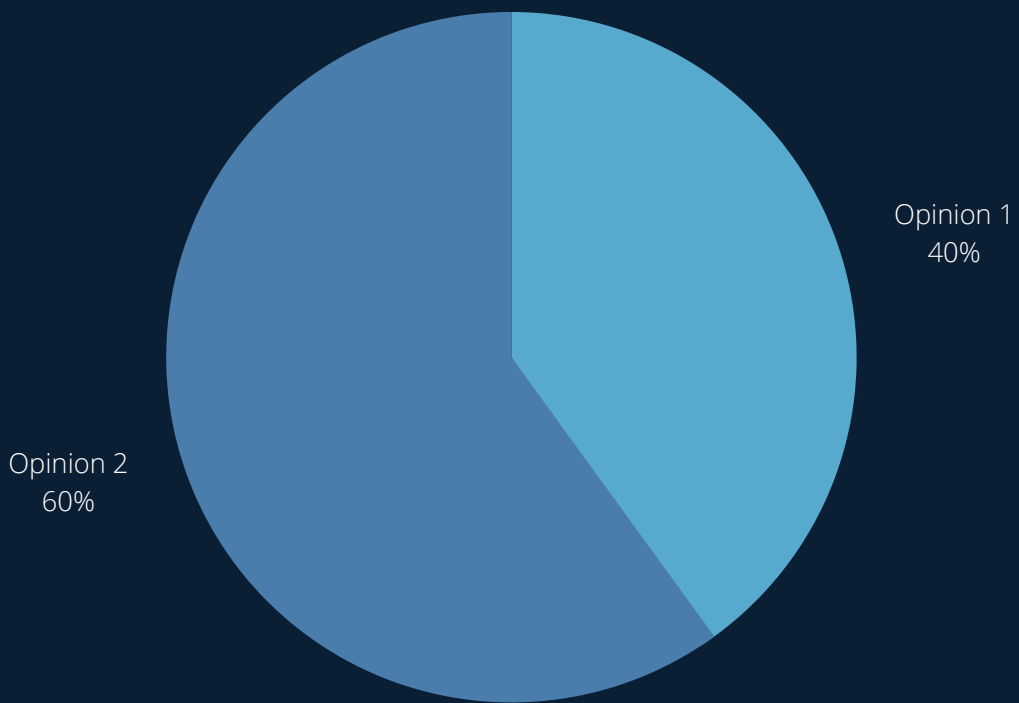
1. What expertise do you have on this topic?
2. Please describe the above expertise in detail.
3. Looking ahead 5-10 years, how do you think the development of blockchain technology will affect the automotive manufacturing business? (Optional)
  - Major changes in business structure are imminent.
  - There will be an impact, but there will be no pressure to change the business structure.
  - The impact is limited and does not require special attention.
  - Almost no impact.
4. Please provide specific reasons for your choice in Question 1.
5. Please provide examples of cutting-edge research related to this research theme.
6. Are there any blockchain technologies that the automotive industry should adopt ahead of other companies? If so, please describe it in detail.

NineSigma will gather expert opinions on the future relationship between your business domain and next-generation technologies and social trends to help you understand the future outlook

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Opinion 2:

The impact is significant and requires changes in business structure.



Opinion 1:

There will be an impact, but there will be no pressure to change the business structure.



Q. Assuming 5-10 years from now, to what extent do you think the development of blockchain technology will affect the automotive manufacturing industry?



"P2P transactions could become widespread for EV charging stations. Such transactions could be a game changer in EV charging."

Electronics (China)

"Blockchain's value is demonstrated in highly decentralized systems where trading partners change and trust needs to be built on the fly. The automotive industry is so integrated that the only possible scenarios are assumed to be supply chain tracking and advanced road transport systems."

Researcher,  
National Univ. (UK)

Blockchain brings traceability to the complex automotive supply chain. It enables improved reliability of parts and precise control of schedules. Some industries are already considering using this technology, so it is important to quickly incorporate examples from other industries.

Business school  
Directors (USA)

# Case 2: The Future Impact of Quantum Computing in the Automotive Industry

# Case Study 2: The Future Impact of Quantum Computing in the Automotive Industry

Research on the relationship between noteworthy technology trends and your business

- ① Provide the topic of research in automotive industry: **Impact of Quantum Computing in the Automotive Industry**



## ② Survey questions

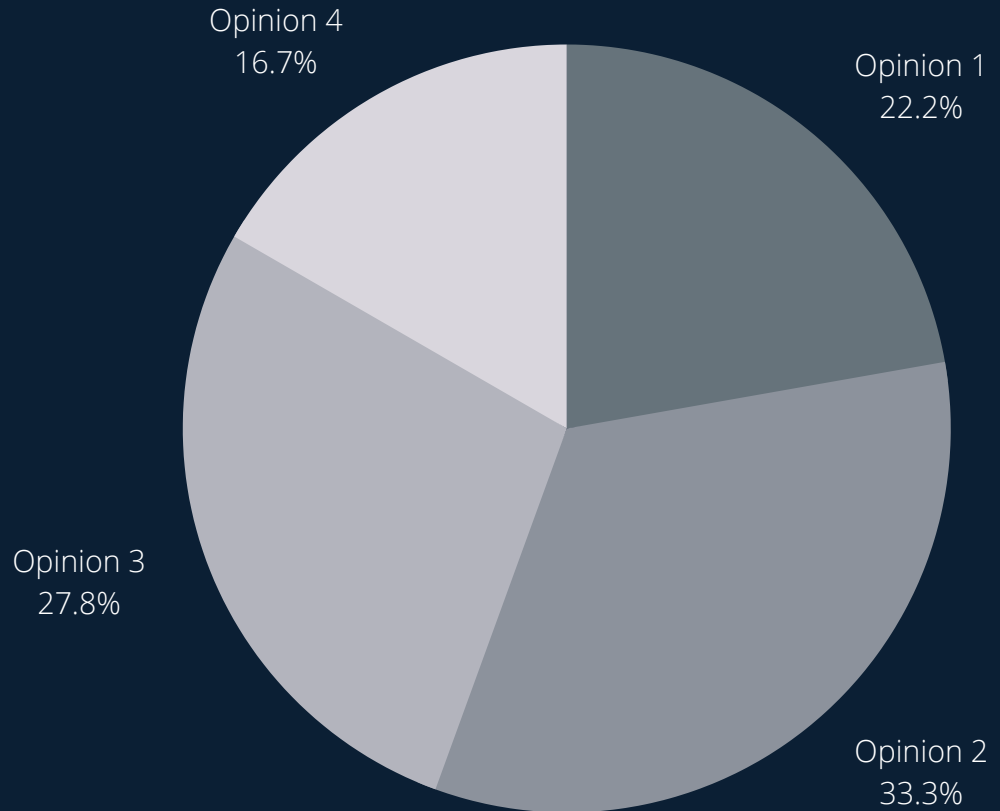
1. How much expertise do you have in this topic?
2. Please describe the above expertise in detail.
3. Which of the following do you consider to be the most important impact of developments in quantum computer technology on the automotive manufacturing business?
  - Accelerating the development of advanced materials
  - Realization of advanced automated driving technology
  - Optimization of logistics and supply chain
  - Establishment of a new business model related to automobiles
4. Please provide specific reasons for your choice in Question 3.
5. With regard to the impact you selected in question 3, what do you think is the current level of R&D?
6. With regard to the impact you selected in question 3, what do you think will be the trigger for the spread of quantum computer technology?
7. What specific examples do you consider to be the most advanced with respect to the impacts you selected in question 3?

Gather different opinions from experts in this specific field regarding the technology it would like to incorporate it's application

3

**Opinion 4:**  
**Establishing a new business model  
for the automotive industry**

**Opinion 3:**  
**Optimization of  
manufacturing/logistics in the  
supply chain**



**Opinion 1:**  
**Accelerating development of  
advanced materials**

**Opinion 2:**  
**Establishment  
of advanced automated driving  
technology**

**Q. What do you think will be the most significant impact of quantum computing on the automotive manufacturing industry?**



Quantum computers can be used in the automotive design process to improve the minimization of aerodynamic drag and to develop environmentally adaptive materials. They can perform advanced calculations such as collision behavior and can also train various algorithms used to improve autonomous driving software.

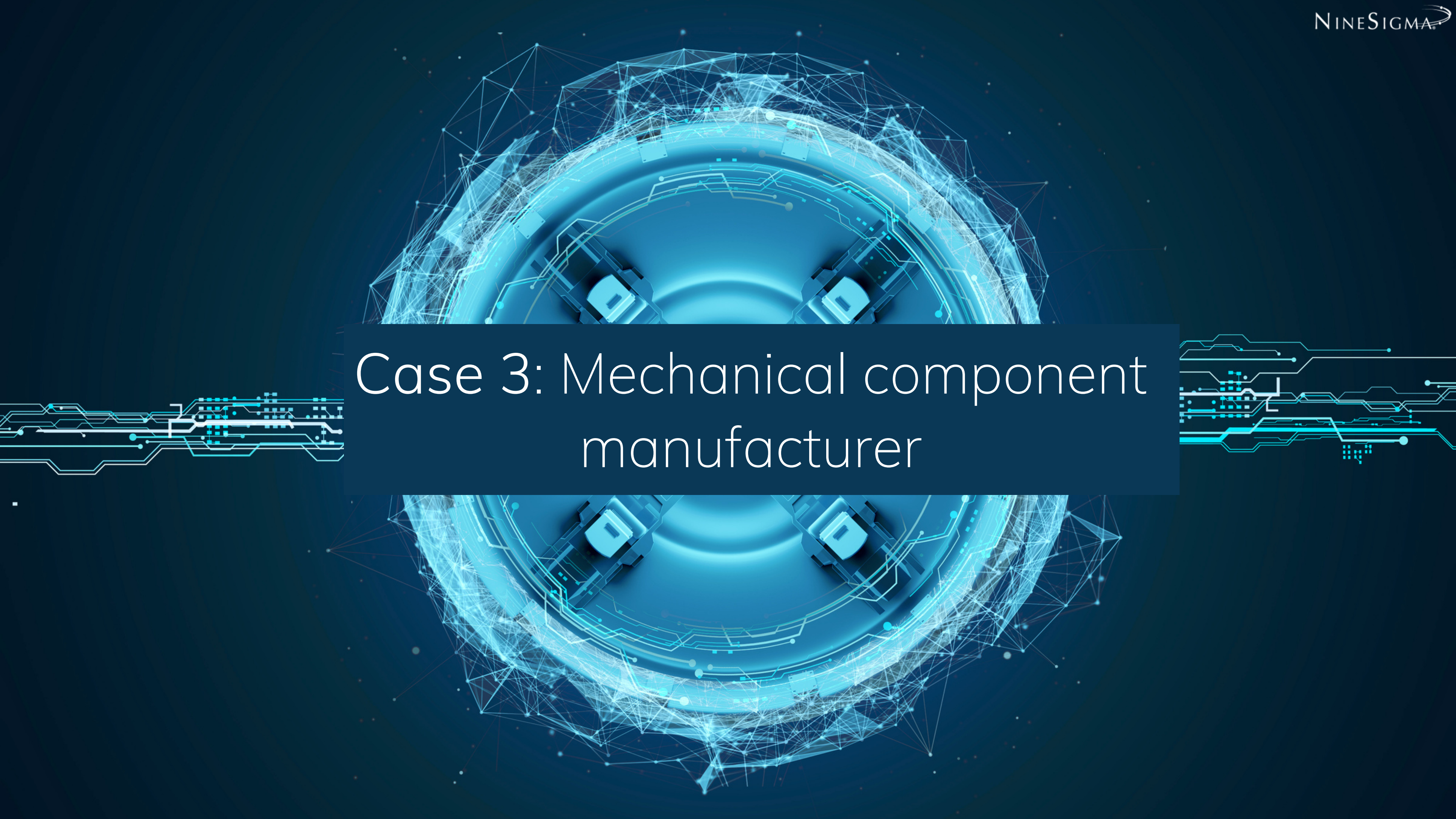
**Electronics / Senior (Israel)**  
**Accelerate materials  
development**

One of the challenges in current self-driving cars is to calculate all the data needed for safe driving. A quantum computer can analyze all the data (hazard prediction, routes, movements of other vehicles, etc.) in much less time than before.

**IT / Software / Senior(Greece)**  
**Advanced Automated  
Driving**

Quantum computers are expected to revolutionize automobile manufacturing and supply chain optimization because they can efficiently solve difficult optimization problems such as the QUBO problem, which is an NP-hard problem.

**National Laboratories (USA)**  
**Manufacturing / Logistics  
Optimization**



# Case 3: Mechanical component manufacturer

# Case study 3: Mechanical component manufacturer

Research on finding new ways to utilize a strong production technology in order to increase factory utilization

①

## CLIENT SEEKING SOLUTIONS FOR TECHNOLOGY APPLICATION

- There is an urgent need to find new ways to utilize the client's strong production technology in order to increase factory utilization as factory utilization has become low over the years.
- Since the development of electrification, the automotive industry has been impacted, which had an effect on the manufacturing process that is leading demand to decrease.

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## TECHNOLOGY USED BY OUR CLIENT

- An Industrial firm with innovative surface treatment technology developed in-house.

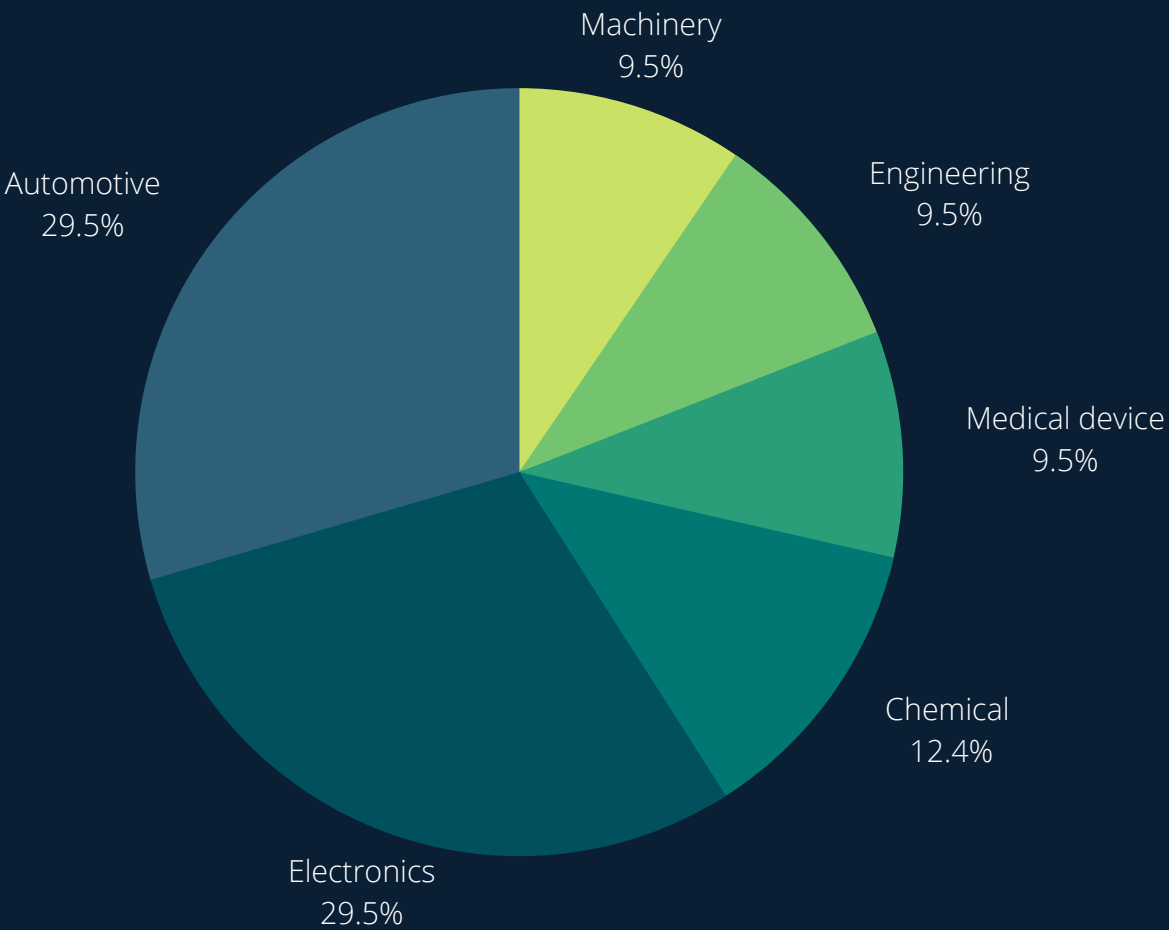
## NINESIGMA'S ROLE

- The characteristics of the company's innovative surface treatment technology were presented to NineSigma's OI Council platform, where managers from leading companies coming from a variety of industries were asked for ideas on how to utilize the technology.
- NineSigma conducted additional interviews to determine other factors such as the market size, competitive advantages, and cost requirements of the application ideas.



SUBMISSION PROCESS

In two weeks, 39 ideas were submitted from electrical equipment, automotive, chemical, engineering experts, industrial machinery, and medical equipment.



WHERE CAN THIS BE UTILIZED?

Opinion 1: surface treatment of terminations, joints, connectors, etc., used inside accessories for industrial machinery"

Opinion 2: effective removal of deposits after masking procedures for "X" in electrical equipment industry."

Q. Do you think this technology can be further exploited in it's application to the medical device fields?



"We think it can be applied to the hospital's "X" system. I think it can be applied to the outside of the equipment because the system is sensitive to "X". The current "X" method is not reliable and its effectiveness is limited from a hygiene standpoint, so I think your method can be applied. However, the condition is that there are no side effects. I think it is possible to start from about "X" hospitals + "X" centers "X" facilities and expand to various regions.

Once the information is collected, the client decides to take the right next steps to implement the actions to their technology.

# Connect with us

## Contribute to open innovation

-> **Embark on** a dedicated cloud-based environment to feature your innovation challenges

### Open Innovation Council

-> Get quick insights or test ideas from a curated network of industry professionals

### Technology & Expert Search

-> Find solutions, partners & expertise to address pressing technology gaps

WE MAKE **INNOVATION** HAPPEN.  
WE FIND. WE CONNECT.

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