

Awareness of Business Environment

Amid the ever-increasing global population, aging societies, and advancing urbanization, the progression of global warming and the increase in traffic accidents are becoming serious social issues. In addition, people's values are diversifying and these issues are becoming more complex as a result of the digitalization of society and the advancements in intelligent robotics, as well as rising geopolitical risks. In addressing these emerging social issues, as in realizing a recycling-oriented society and an optimal energy balance, easing traffic congestion, and achieving decarbonization, there is a growing need to implement new mobility solutions in coordination with social infrastructure, including the evolution of IoT and AI technologies, vehicle electrification, automated driving, and connected driving, while also extending and applying these technologies, which have been cultivated in the mobility domain, to domains other than mobility.

Going forward, we will continue to pursue the resolution of social issues while accurately assessing and responding to risks that may have an impact on society and our business activities, as well as opportunities related to these various developments in society.

Forecasts of Future Society

Politics

- Tightening supply–demand situation for energy across the globe and the shift from low carbon to carbon free
 - Need for international cooperation to mitigate climate change in light of the urgent need to address global warming①
 - Necessity of promoting renewable energy and hydrogen usage①
 - Restrictions on power generated from fossil fuels and internal combustion engines①
- Establishment and expansion of laws to control adverse impacts on the environment and human rights throughout the entire supply chain①②
- Intensifying division and confrontation due to differences in political structures (trade, technologies, human rights, etc.)④
- Rising geopolitical risks①②③④

Economy

- Stagnant economies in advanced countries, rise in prominence of Global South, and global multi-polarization②③④
- Rise in nationalism due to growing regional disparities③④
- Establishment of economic blocs advantageous to individual countries and ongoing regional optimization④
- Expansion of ESG investment and acceleration of rulemaking for ESG information disclosure①②

Society

- Threat to the sustainability of society due to an increase in population, with the global population exceeding 8.5 billion people①②③④
- Aging populations around the world, declining workforces, growth in life expectancies②③④
- Urbanization in emerging countries, urban regeneration due to the shift to smart and compact devices, and an increase in logistics volumes③④
- Consumption behavior becoming more ethical and experience-based with a shift to the sharing economy①②
- Progression in the transition to labor offered by AI and robotics, and changes in work ethic and available free time②

Technology

- Integration of digital and physical domains due to the proliferation of IoT-related technologies (communications and other devices)②
- Productivity enhancement and value chain integration through the use of big data①②③
- Transition to the use phase of AI and quantum computer utilization and the versatile implementation of AI in manufacturing, finance, and services②③
- Accelerating shift to non-contact technology and full automation in various industries①②

Keywords for Social Changes by 2030

① Shift toward a carbon-free society and a circular economy
Changes in the powertrain mix (electric vehicles, internal combustion engine vehicles), energy savings, renewable energy, and resource recycling

② Diversification of people's values and consumption behavior
Diversifying consumption behavior and value systems
Evolution of IT communications × Automobiles

③ Emergence of social issues
Aging populations, uneven distribution of population, and congestion

④ Structural changes and instability within the international community
Political conflicts and geopolitical risks
Growth of new emerging markets

Risks and Opportunities		Response Measures to Risks and Opportunities
① Shift toward a carbon-free society and a circular economy		
Risks	• Tightening and acceleration of environmental regulations on the automotive industry • Introduction and expansion of environmental taxation by the governments in each country and region • Increasing demand for the transition to carbon neutrality within the product production process	Regarding the risk of climate change, we believe there will be greater opportunities for us to popularize our long-cultivated technologies for fuel efficiency, low exhaust gas, and electrification around the world. Also, particularly in Europe, expectations are increasing with respect to initiatives for the creation of a recycling-based society. Through flexible cooperation and co-creation with other companies, we aim to accelerate the development of technologies for reducing CO ₂ emissions and realize the stable supply of such technologies on a global scale. At the same time, we will help reduce CO ₂ emissions across society through the development of new technologies such as those that generate and use hydrogen and the traceability technologies needed for resource recycling. With a view to achieving a carbon-free society and a circular economy, we will also strive to reduce and curtail CO ₂ emissions across our supply chain and promote resource recycling.
Opportunities	• Increasing needs for systems to respond to electrification and alternative fuels (e-fuel, hydrogen fuel, and biofuel) • Heightened expectations for new technologies that contribute to carbon neutrality and resource recycling (generation and use of hydrogen, traceability, etc.) • Growing demand for highly efficient production technologies that achieve solid energy-saving effects	
② Diversification of people's values and consumption behavior		
Risks	• Reduction in transportation as digital technologies proliferate and consumption patterns change • Intensifying competition due to the increasing entry of IT companies able to address diversifying values	By swiftly responding to diversifying needs such as automated driving and the provision of safe and comfortable vehicle interiors, we can increase the number of growth opportunities for DENSO. To respond to the risk of companies from other industries entering the automotive industry, we are collaborating with other companies both inside and outside the automotive industry to leverage our respective fields of expertise while also strengthening our unique technological and <i>Monozukuri</i> (manufacturing) capabilities. By doing so, we will invigorate our development activities in new domains with a sense of speed.
Opportunities	• Heightened awareness of “peace of mind,” leading to the diversification of technologies related to peace of mind and expansion in value systems (safety awareness, pursuit of comfort, privacy, disaster alerts, etc.) • Rising need for added value due to the accelerating shift to digital technologies and IT	
③ Emergence of social issues		
Risks	• Delays in developing and commercializing technologies in response to increasingly complex and intricate material issues (Materiality)	Alongside the proliferation of material goods, social issues such as aging societies, the depopulation of rural areas, overcrowding of urban areas, and traffic congestion have become more severe. To resolve these issues, we will accelerate the development of technologies that help prevent accidents and eliminate traffic congestion. By leveraging the know-how we have cultivated through our <i>Monozukuri</i> activities, including in-vehicle, automation, and IoT know-how, we will strive to constantly develop technologies and create businesses in the non-automotive domain that help keep people safe and work to expand these technologies and businesses across the globe.
Opportunities	• Expansion of businesses that contribute to the resolution of social issues (growing needs for automated driving, the prevention of traffic accidents, food safety, electrification to address labor shortages, etc.)	
④ Structural changes and instability within the international community		
Risks	• Rising threats toward DENSO's business management (military strikes, cyberattacks, etc.) • Revisions to business models (regulation response and supply chains) due to divisions between countries and regions	Against the backdrop of differences between political structures, the international community is becoming increasingly confrontational and factionalized in various fields, and we forecast that this will bring about dramatic change in our operating environment and increase business risks. To achieve stable business management under these circumstances, we are strengthening our governance and risk management systems so that we can respond flexibly to changes and risks.
Opportunities	• Progressing expansion of new markets and business partnerships with the aim of resolving social and environmental issues	

Social Changes as of 2030 and Key Initiatives for DENSO

We are narrowing down our forecasts of future society, revising them through PEST (political, economic, social, and technological) analysis, using social changes as of 2030 as a key theme. In accordance with this theme, we have analyzed risks and opportunities and identified key initiatives for DENSO moving forward. We will work to gain an accurate understanding of the outlook for the CASE revolution and changes in the mobility society, and thoroughly examine whether or not these changes will have an impact on the key initiatives of DENSO.

Key Initiatives for DENSO

Maximizing the Value of Green and Peace of Mind to Be Inspiring

The rapid changes in society that will occur going forward, such as changing values and behavior, present a significant opportunity for a company such as DENSO, which has continued to refine technologies and gain experience in the mobility domain. With the aim of reducing our environmental burden and realizing a society without traffic accidents, we will actively promote the creation of a better mobility society with a view to achieving the goals of “lasting vitality for the environment” and “safe, comfortable, and flexible mobility for all people.” Furthermore, we will leverage the technologies we have cultivated through semiconductors, software, other automotive products, systems development, and *Monozukuri* to offer peace of mind and safety not just in the mobility domain but to all people in society. By doing so, we will continue to create new value.

Green

Peace of Mind

Reinforcing the Corporate Foundation That Underpins Our Value Creation

To flexibly resolve social issues, which are becoming more complex and diverse, and increase corporate value, we need to strengthen our risk management and other governance frameworks with the goal of revising our organizational management framework and minimizing the impacts of risk. It is also important that we cultivate human resources able to enhance corporate value. In these ways, we will support the creation of high-quality value at faster speeds by reinforcing our management foundation.

Corporate Foundation