Document 5

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The 2nd Visionary Council on the Moonshot Research and Development Program

Ideas Proposed from the Industry

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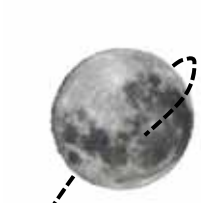
The Moonshot Research and Development Program
Attracting Expectations from the Industries

COCN

Wide-ranging ripple effects on society and industries. Collecting the wisdom of the world.

Goal



- The society where implementation of the results from researches and technologies have resolved the issues.
- The society where creation of new values fill people with feeling of great happiness.

> Achieved research results, and difficulty and novelty of the technologies.

- Consider involvement of more external experts from the industries
  => Currently, most of them are from government and academia sectors.
- Spin-outs and spin-offs from the programs should be accepted in the industries.
  => Improve continuous system to commercialize and implement them.
- Put the projects into global scale while maintaining geo-economical considerations.
- Consider more projects which place priority on humanistic and social approaches.
  => Maximized happiness, human resource education system, etc.
- In addition to major goals in the focused fields, set specific Moonshot goals. Seek themes from everyone to realize these goals.

COCN proposes the results from member surveys (46 in total)

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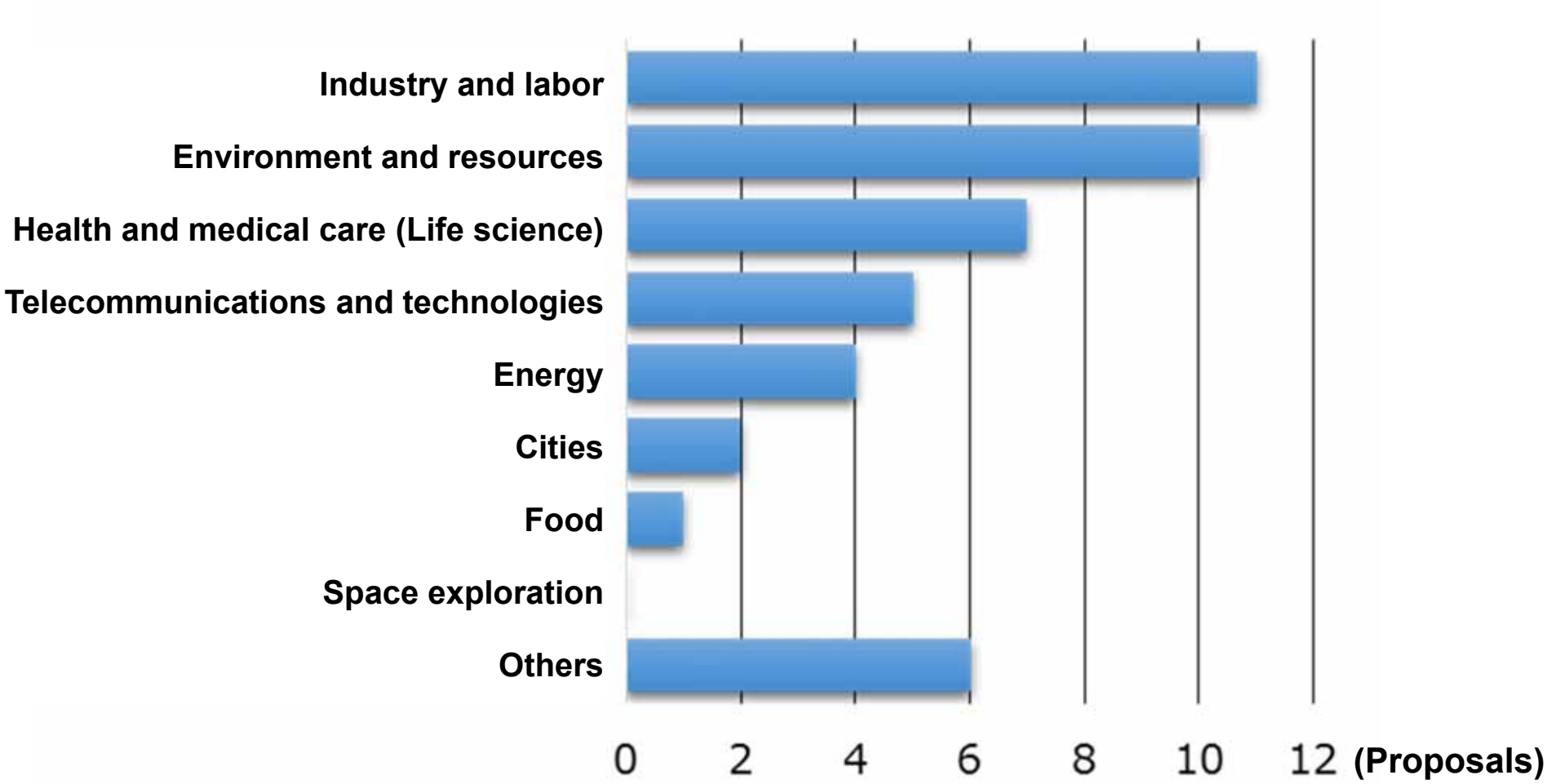
Proposal of Themes from Survey among COCN Members

46 proposals from 46 member companies (companies were allowed to make multiple proposals)



* Others includes:
Human resources development, joy of living, mobility, quantum biology, investment, and religion.

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Example of Proposed Themes (1/3)

Industry and Labor

Expanding the Ability of Humans

Attempt has been started to apply technologies to compensate for various declines in capacity associated with aging. However, technologies are being developed in individual fields; no large investment has been made in an integrated manner. We contribute to improve humans' quality of life by conducting research and development on the technologies to expand human abilities in a cross-sectoral manner.

With help of ICT, install the missing skills like apps; from expanding human knowledge and memories, to social skills such as professional skills and communication skills in interpersonal services. By doing so, create an environment where people, regardless of their age or skill, can engage in rewarding work, originating from the minds of workers.

Robotics

Robots suiting the geographical condition at time of disasters, who act in place of humans in forms that match the body shape of and the care required for individual person at the site of life saving or nursing care. They are equipped with standardized drive circuits and manufactured by 3D printer or the like devices.

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Example of Proposed Themes (2/3)

Environment and Resources

Weather Control

Control the atmospheric environment on the earth that is causing storm and flood damage. While currently it is limited to cyber simulation, we develop technologies to act on the atmosphere to control its state and realize disaster prevention measures.

Develop a plant system that recovers and stores energy by busting typhoons and hurricanes in their early stages.

Marine Communication

For the development of resources such as methane hydrate in Japan's exclusive economic zone, implement the communication under the sea where it is called the last digital divide, to promote the development of the ocean frontier.

Decarburization in Steel Making

Decarburization is a global consensus. On the other hand, iron, like energy, is an important material that supports modern society; it is difficult to seek substitutes in terms of quantity and quality. In steelmaking, we contribute to the realization of a decarburized society by implementing decarburized method in place of the current method of reduction using a large amount of coal.

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Example of Proposed Themes (3/3)

Health and Medical Care (Life Science)

Multidrug-resistant Bacteria

Infections by the pathogen once appeared to be wiped out by the antibiotic. However, drug-resistant bacteria have been increasing due to bacterial mutation and activity of plasmids. While developing new antibiotics, we develop innovative measures to counter resistant bacteria, to release people from fear of multidrug-resistant bacteria.

Gene Design

Development and social implementation of highly efficient biomaterial production technology by safe gene design which realize the biomedical design and its utilization by genome editing, the maintenance of environment and health utilizing microorganisms, and the medical innovation by repair of organs and human bodies.

Omniscient and Omnipotent AI Physician

Due to declining population, declining birthrate and aging population, the shortage of healthcare workers for the number of people who need healthcare has become serious issue. In addition, there are regional disparities, such as some regions lacking access to adequate medical care, and having differences in level of available medical technology.
=> The combination of quantum IoT which integrates quantum sensing, quantum computation and quantum communication, and artificial intelligence robot that has been trained with advanced medical information, realizes an innovative fully automatic medical system "Omniscient and Omnipotent AI Physician".