



Section committee changing the world of Bioindustry by sound

Onkyo Corporation

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Social problems: Biotechnology production system / health care

Contents of activities: Use of sound to Biotechnology production system and health care area

Seeking for solutions of future social problems



Future social problems

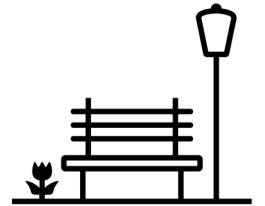
Biotechnology relation
Food industry
Environment area
Energy area
Road, bridge and railway
Vehicle and construction machine
Consumer support
Plant and animal
Call center and communication
Health care and medical care

Picking up social problems

Strengthening collaboration with local residents by collaborating with municipalities

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Changing the world by sound



Deepening and discovering technologies by industry-academia collaboration

Collaboration with each university and promotion of research for solving social problems
Seeds type research

Social implementation by collaboration with enterprises

Basic research with universities
Marketing for solving social problems by using technologies of enterprises
Startup

Targets

Biotechnology area

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Sound acoustic analysis technology

Visualization of heart sound / lung sound

Music food

PC / smartphone application

Structure analysis (Hammering test / nondestructive test)

Voice recognition

Noise visualization

Abnormal sound detection

Vibration analysis

Japanese sake

Cheese

Seafood

Soy sauce

Shiitake mushroom

Beer

Conservation of intestines condition

Body condition of animal

Remote diagnosis

Visualization of Heart sound / lung sound

Health management support application

Product for consumer

Musical instrument

High sound quality music application

IT device / PC AR/VR

Vehicle

Call center optimization

Minutes transcription

Rotation machine Fan

Highway

Illumination post

Railway

Engine Motor

Bulldozer

Traffic amount investigation

Landslide

Axle load

Abnormal sound detection

Construction site

Factory

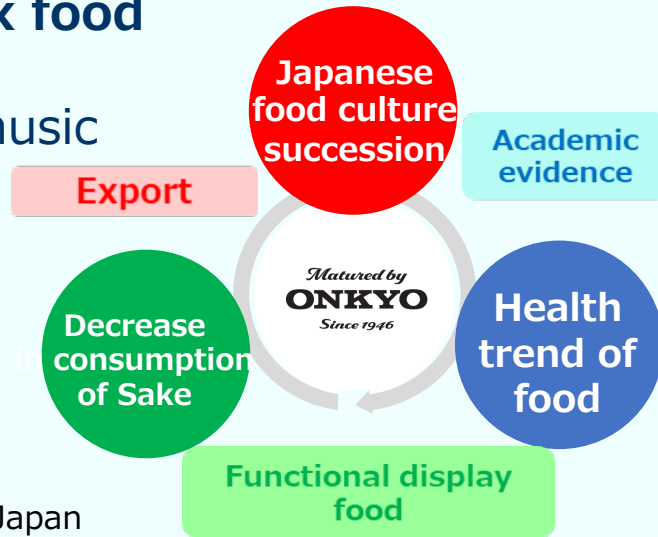
Targets (Biotechnology area)

1. Audio technology x food

Value creation of fermented food by music

Changing the world by sound

- Enjoying food x entertainment property of music
- Spreading to the world and lasting to the future
- Food culture and health culture of Japan



2. AI hospital / remote diagnosis

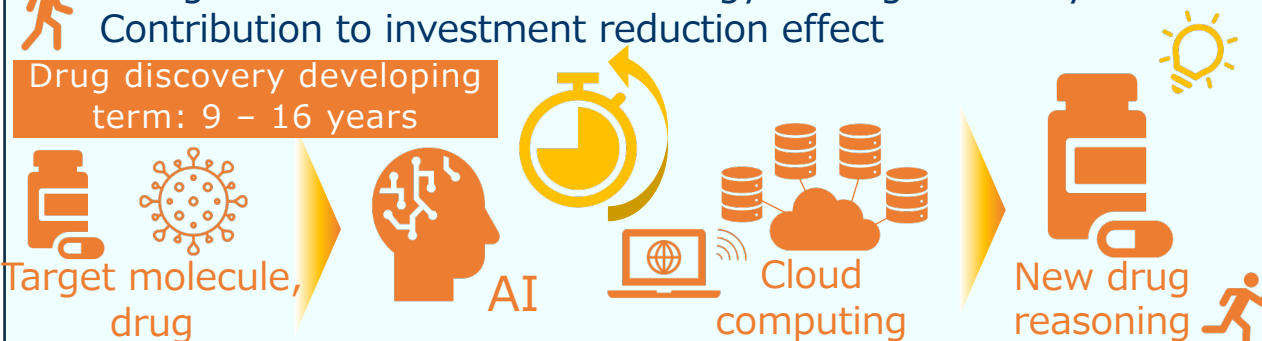
Burden of going to hospital for elderlies, handicapped people, and remote island residents
Finding disease opportunity loses when frequency going to hospital decreases



3. AI drug discovery

Using cultivated voice AI technology in drug discovery field
Contribution to investment reduction effect

Drug discovery developing term: 9 - 16 years



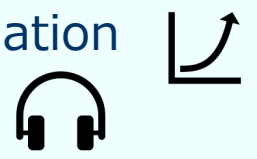
Greater time shortening by analysis with AI / cloud

4. Improvement and support of hearing loss

Increasing people suffering from hearing impairments in the world



Cause: increasing of elderly population
Music listening in loud volume by popularization of smartphone



Plan by 2025



Target		2023	2024	2025		
1	Audio technology x food	Technology	Research of yeast x mechanism			
		Market	10 companies performing fermented food	20 companies performing fermented food	30 companies performing fermented food	40 companies performing fermented food
2	AI hospital Remote diagnosis	Technology	Developing prototype (α)	Technology development support (prototype)	Technology development support (market release)	
		Market	Inviting partners	Contracting with partners		
3	AI drug discovery	Technology	Under developing element technology	Formulation of targets	Technology support (prototype)	Technology support (tooling)
		Market	Inviting partners	Contracting with partners		
4	Hearing loss treating, improving and supporting	Technology	Audible sound element technology	Basic research of hearing loss		
		Market	Selling hearing aid		Diversion of technology other than hearing aid	
			Inviting partners related hearing loss prevention	Contracting with partners		

Disclosing result by Osaka Expo