Fujitsu's AI & Computing Technology Vision

FUJITSU

Our Purpose

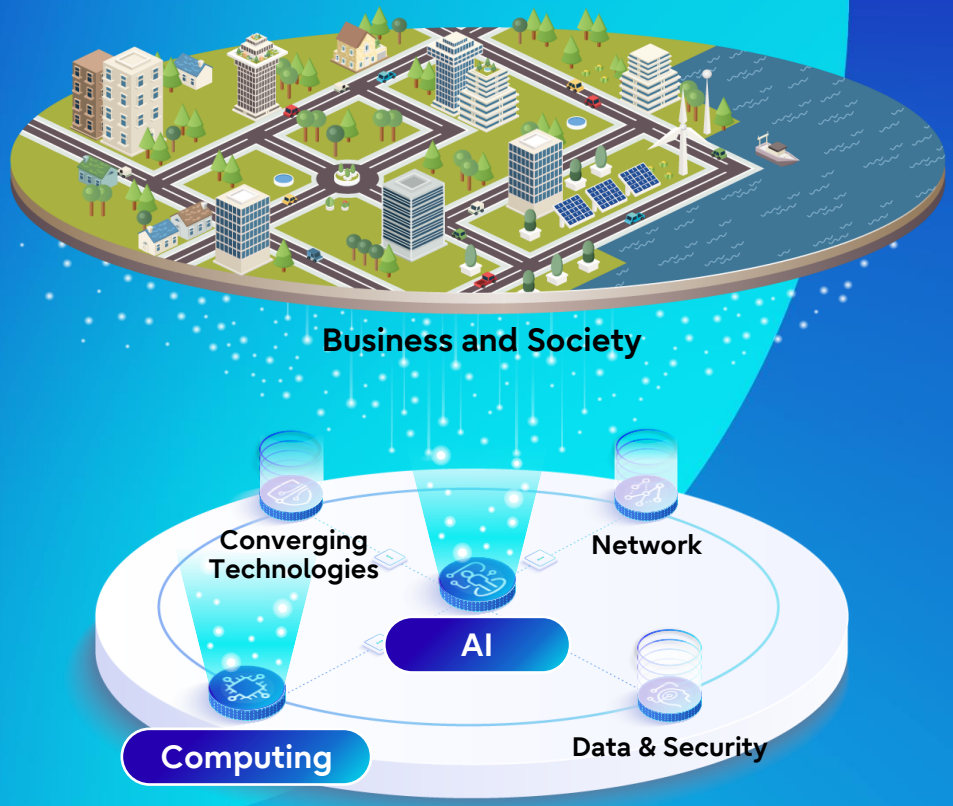
Make the world more sustainable by building trust in society through innovation

5 Key Technologies

Combining technologies to generate trusted quality data and deliver new value

AI & Computing

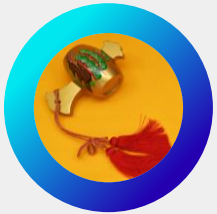
AI is evolving rapidly and requires significant computing power



Fujitsu's R&D on AI & Computing

FUJITSU

Fujitsu is engaged in R&D from hardware to software and platform to build a computing infrastructure that will advance AI and create new value



Cloud-Based AI Platform

Fujitsu Kozuchi - Fujitsu AI Platform

Next-Generation CPU

FUJITSU-MONAKA

System Software

Software Ecosystem for FUJITSU-MONAKA

arm Linaro

Open Source Community

AI Models

Generative AI with Fugaku

Research

Feasibility Studies on Next-Generation Supercomputing Infrastructures

Next-Generation CPU

FUJITSU-MONAKA

- **Fujitsu's brand new Arm-based CPU to be released in 2027**
  - Target for wide range of usage in the data center including AI and HPC, and contribute to the realization of carbon-neutral society

High-Performance

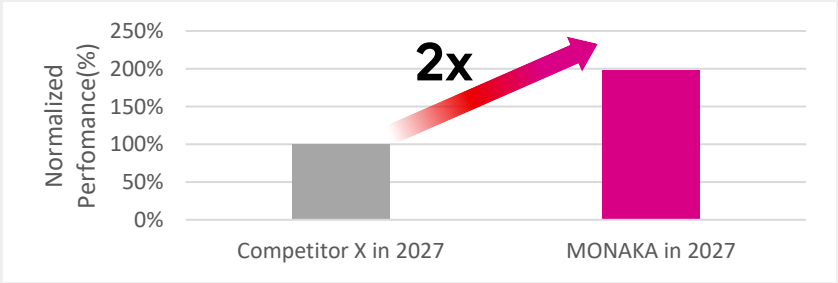
- Cloud native many-core design
  - 144 cores per socket
- High memory bandwidth
  - DDR5 12 channels

FUJITSU-MONAKA

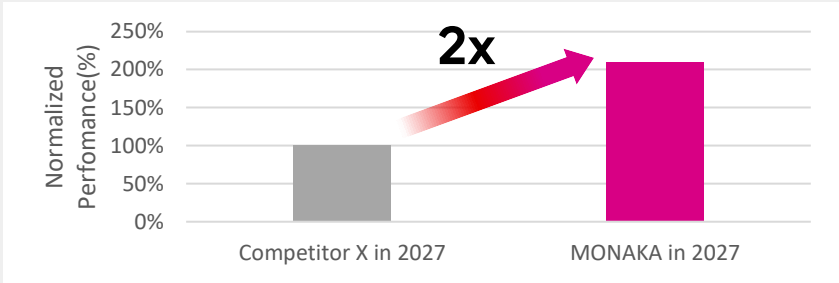
Energy-Efficient

- Leading-edge process technology
  - TSMC 2nm, 3D-chiplet
- Low voltage operation

Application Performance



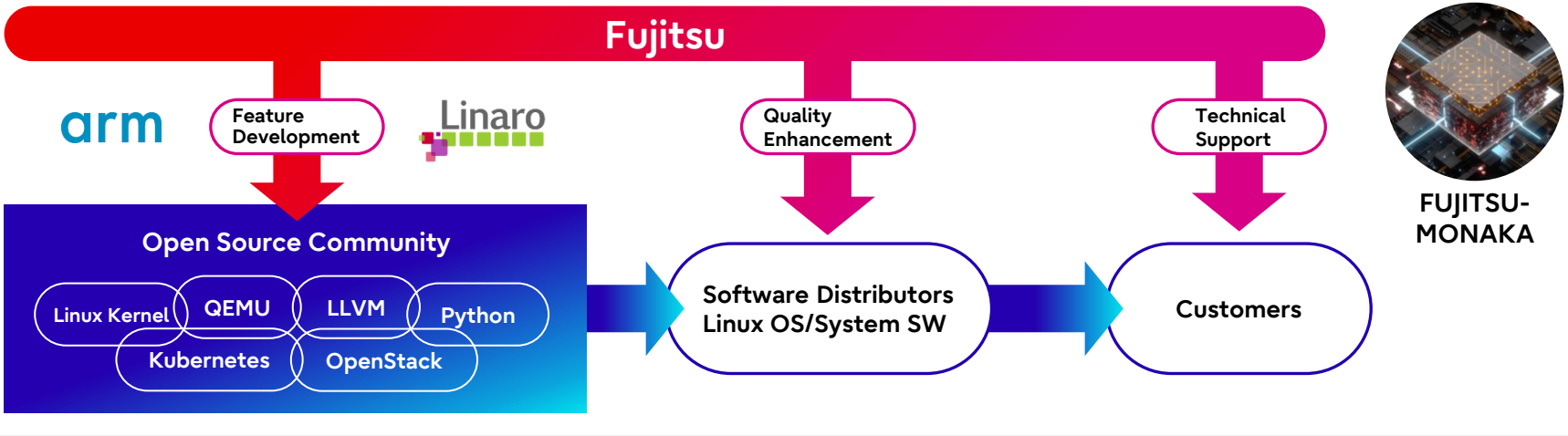
Performance per Watt



This presentation slide is based on results obtained from a project subsidized by the New Energy and Industrial Technology Development Organization (NEDO).

Software Ecosystem for FUJITSU-MONAKA

- **Fujitsu will develop and support standard software in corporation with Arm community**
  - Support major Linux distributions (e.g., RHEL, SUSE) and OSS
  - Enhance standard tools (Python/Java/LLVM) to bring FUJITSU-MONAKA performance to OSS and ISVs
  - Continue and expand OSS contributions cultivated through the development of the supercomputer Fugaku



Generative AI with Fugaku

FUJITSU

Joint R&D on large language models (LLMs) used as the core of generative AI

Objective Contribute to improving AI research in Japan by using the supercomputer Fugaku in academia and industry

Research Items

- LLMs based on Japanese data
- Technologies for efficient large-scale LLM training

Future Plans

Research results will be made public on such as Hugging Face, GitHub, and will also be used in our AI platform, Fujitsu Kozuchi.

Hugging Face GitHub

Fujitsu Kozuchi – Fujitsu AI Platform

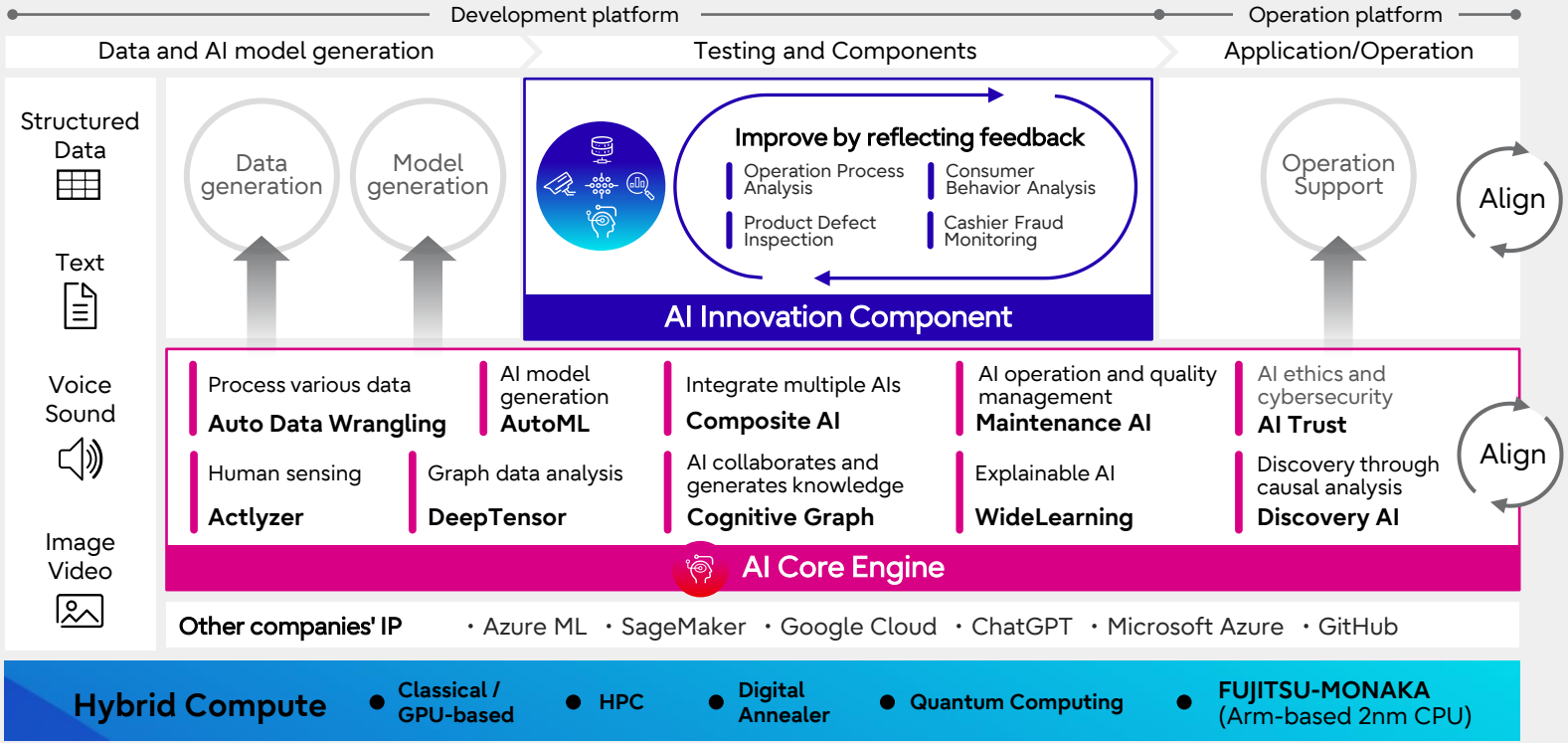
R&D Team Members

Tokyo Institute of Technology, Tohoku University, Fujitsu, RIKEN, CyberAgent, Nagoya University, and Kotoba Technologies

Cloud-Based AI Platform

Fujitsu Kozuchi (code name) – Fujitsu AI Platform

Provide customer value-driven AI Innovation Components that can be deployed in a variety of solutions
Enable customers to efficiently develop their business process by AI Core Engines and other technologies



Fujitsu IP
- AI Innovation Component
- AI Core Engine

Uvance platforms
- AI Innovation Component
- AI Core Engine

Advanced customers Start ups Partners
- AI Innovation Component
- AI Core Engine

Feasibility Studies on Next-Generation Supercomputing Infrastructures

- Fujitsu participates in feasibility studies on Japan's next-generation flagship system (FugakuNEXT) to be operational around 2030
- FugakuNEXT is expected to be a platform that accelerates data-intensive science by combining HPC, AI and data analytics for solving social issues

FugakuNEXT architectural concepts envisioned by Fujitsu

Performance

High performance in scientific computing and AI area

Ecosystem

Compatibility with existing ecosystem

Heterogeneous system

Heterogeneous systems connected by high bandwidth network

Fujitsu's challenges for the future

Contribution to the resolution of social issues

Continuous development of next-generation technology