



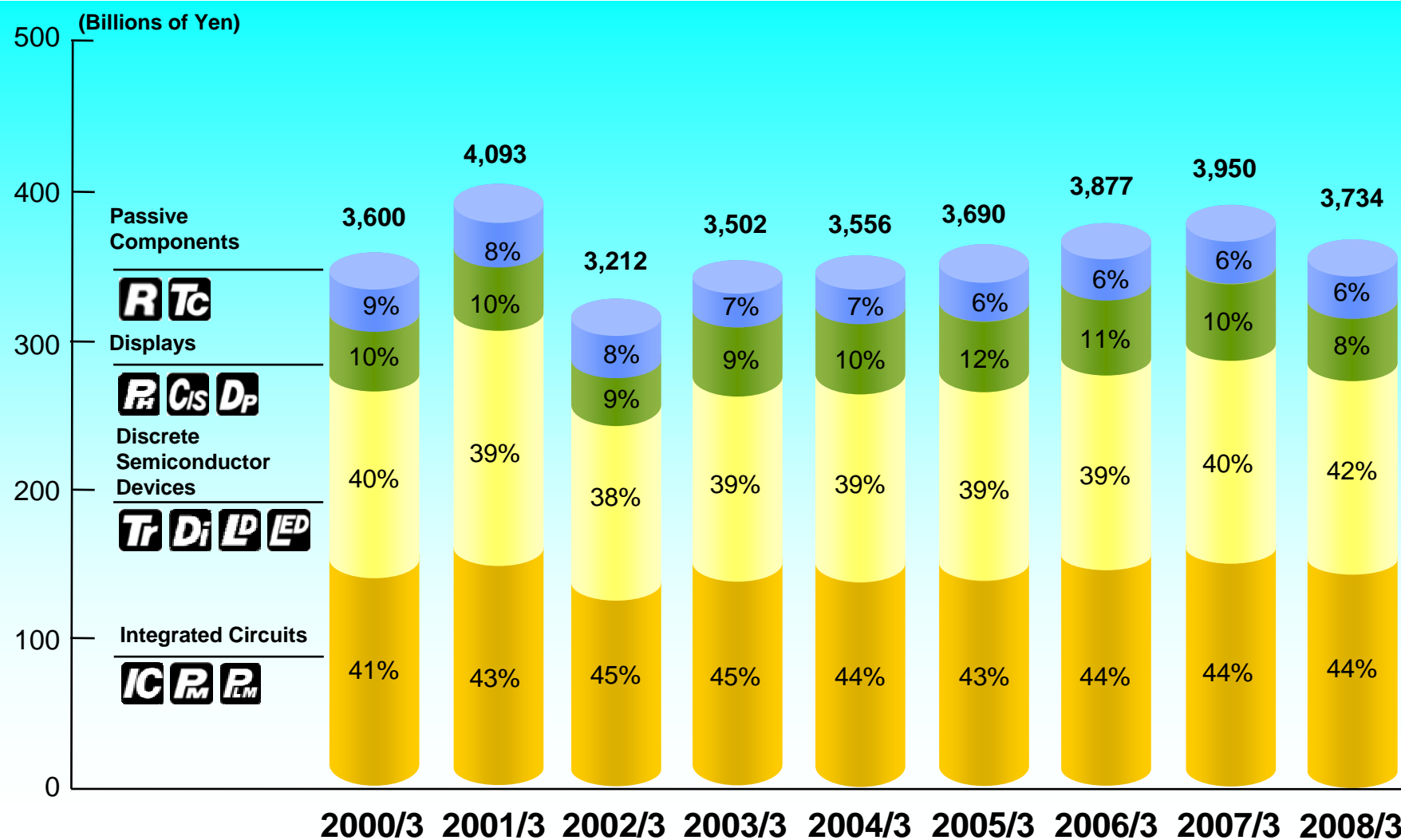
Expand with ROHM

Research and Development Headquarters.

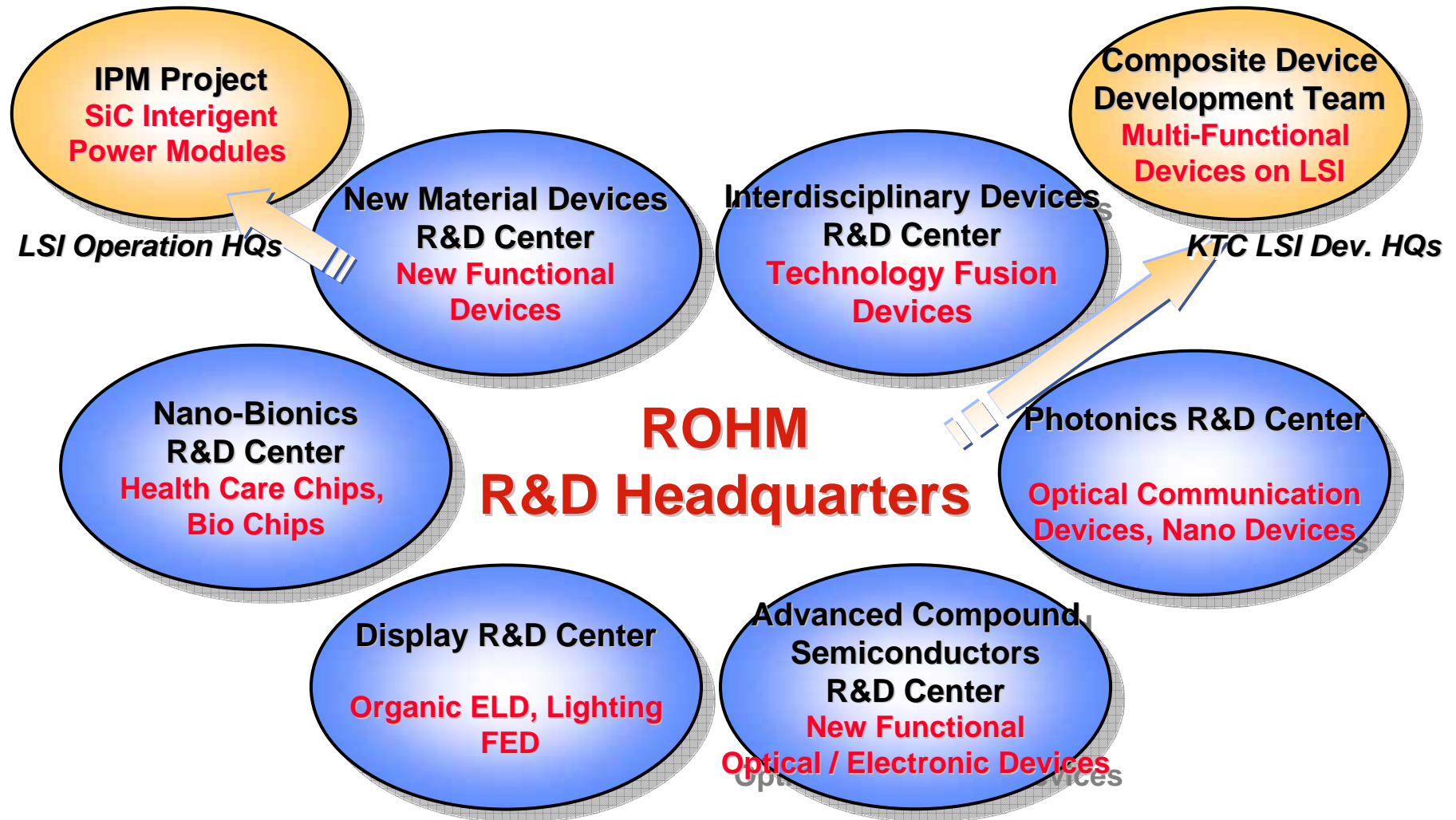
ROHM CO., LTD.



Sales by Product Category (Consolidated)



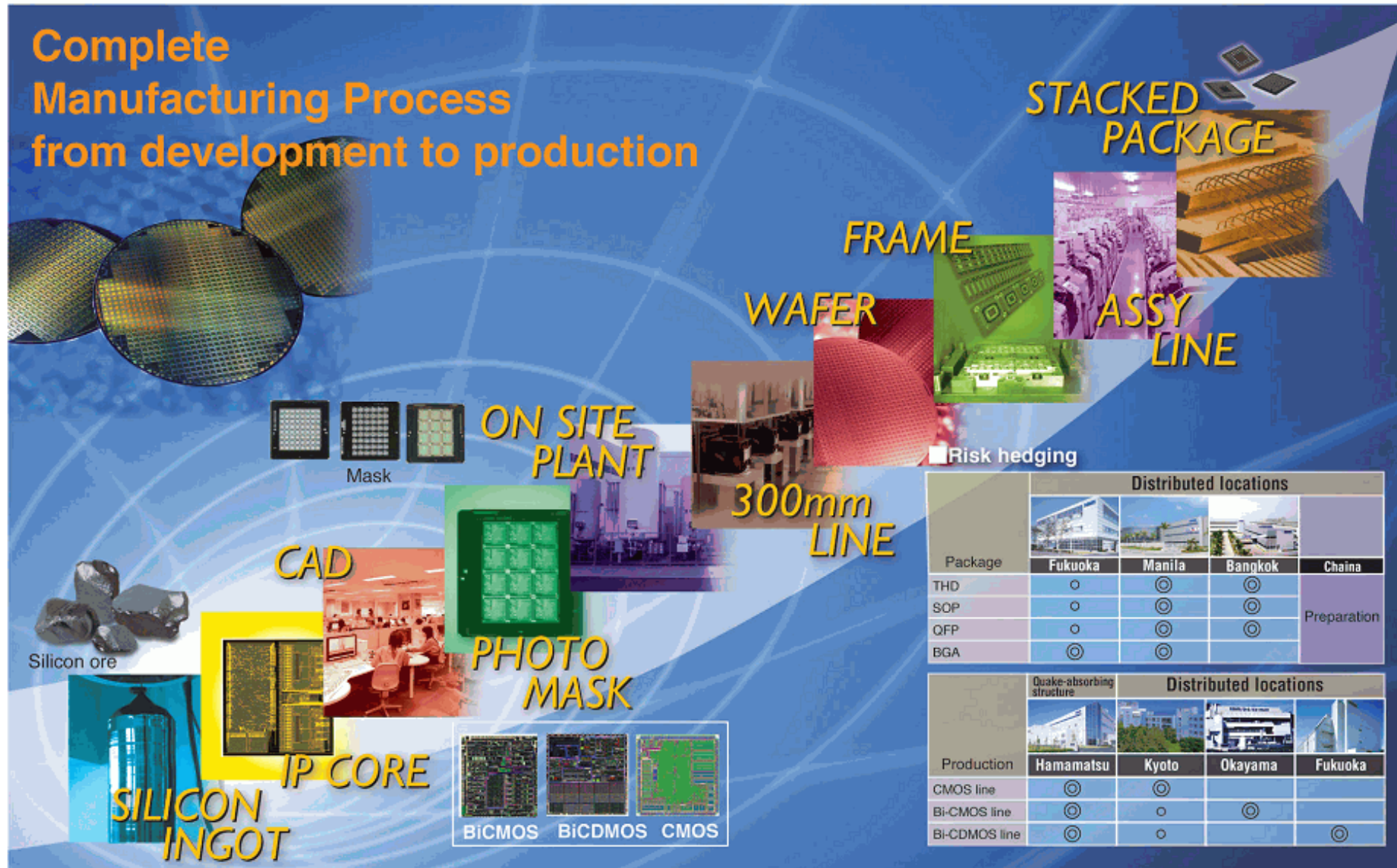
R&D Headquarters



ROHM'S development system, combining high quality and stable supply.

ROHM
SEMICONDUCTOR

**Complete
Manufacturing Process
from development to production**



Differentiation using new technology

Innovation produces profit!

ROHM
SEMICONDUCTOR

From “MORE MOORE” to
“MORE THAN MOORE”



Individual electronic parts
+
LSI

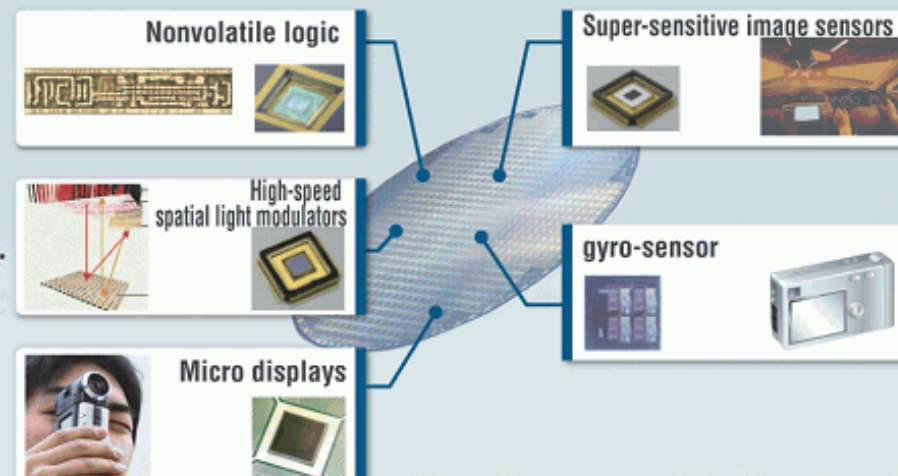


Integrate electronic parts
into a silicon (Si) module.
(Modularize devices.)

Integrate MEMS element devices into a LSI IP core.

Establishment of the Composite Devices Development Team

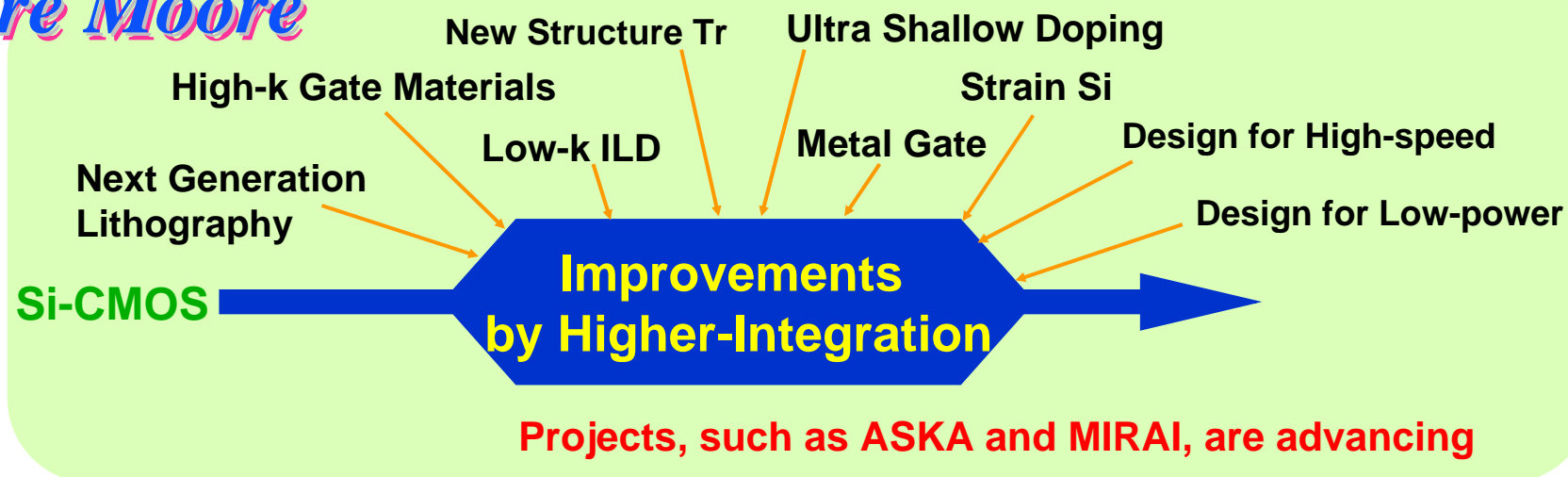
- Super-sensitive image sensors ensuring visibility even in star light.
- Micro displays promoting personalization of images.
- High-speed spatial light modulators for T-Byte class holographic memories.
- Amplifier-built-in monolithic type gyrotor.
- Nonvolatile logics implementing new power-saving technology.



Create new added-value by
incorporating core technology into LSIs.

The strategic direction of semiconductor devices

More Moore



+

More than Moore



The composite device by different field technical fusion

➤ Si tech. +
New materials / different field tech. ➡ *Composite Devices !*

Electron/Photo/Force/Thermo/Bio/... Fusion, Integration

Display / Luminescence
(LCD, EL, LD, LED)
+ LSI

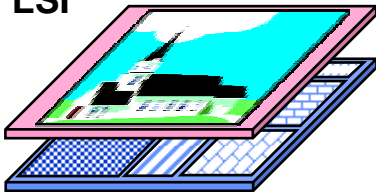
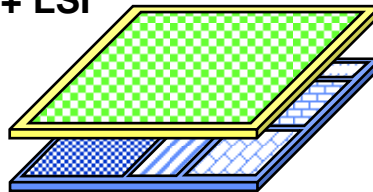
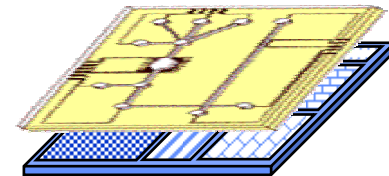


Photo acceptance unit
(PD, CCD, CMOS I.C.)
+ LSI



MEMS/Biochemical
(Sensor, Actuator, ...)
+ LSI



➤ Signal transfer media

Electron

Diversification

Photon
Vital reaction

Optical integrated circuit

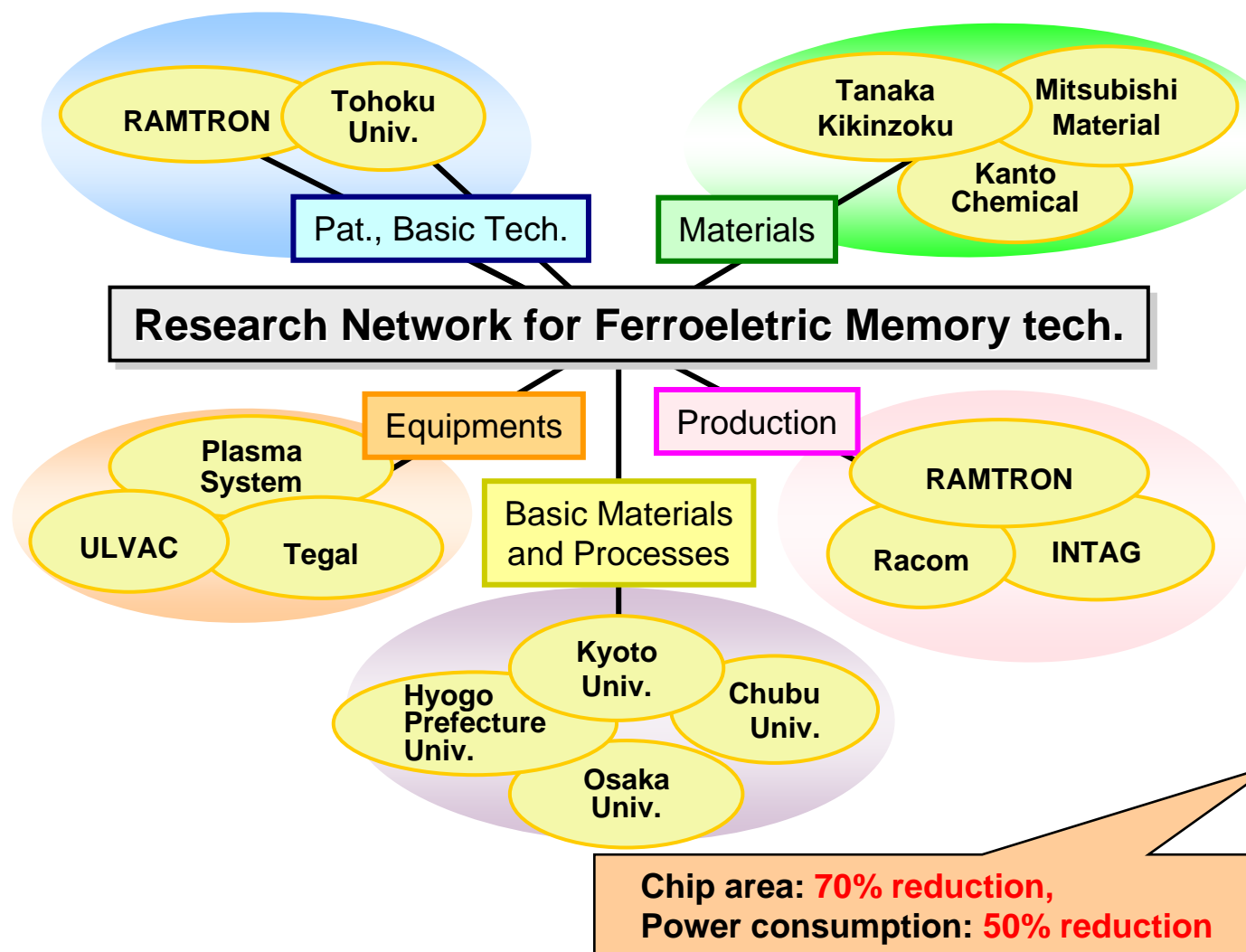
Biochip

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Example for TOP DOWN Type Collaboration



FeRAM

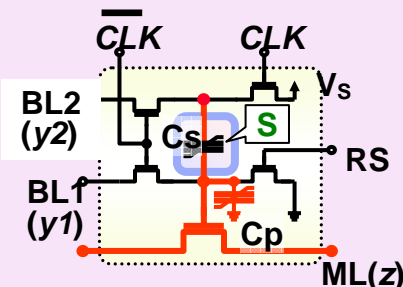
✓ Features of FeRAM

- Production level
- Non-volatile
- Limited read cycle (actually unlimited)
- High speed (<50ns)
- Ultra low power

*The first in the world
mass production
success*

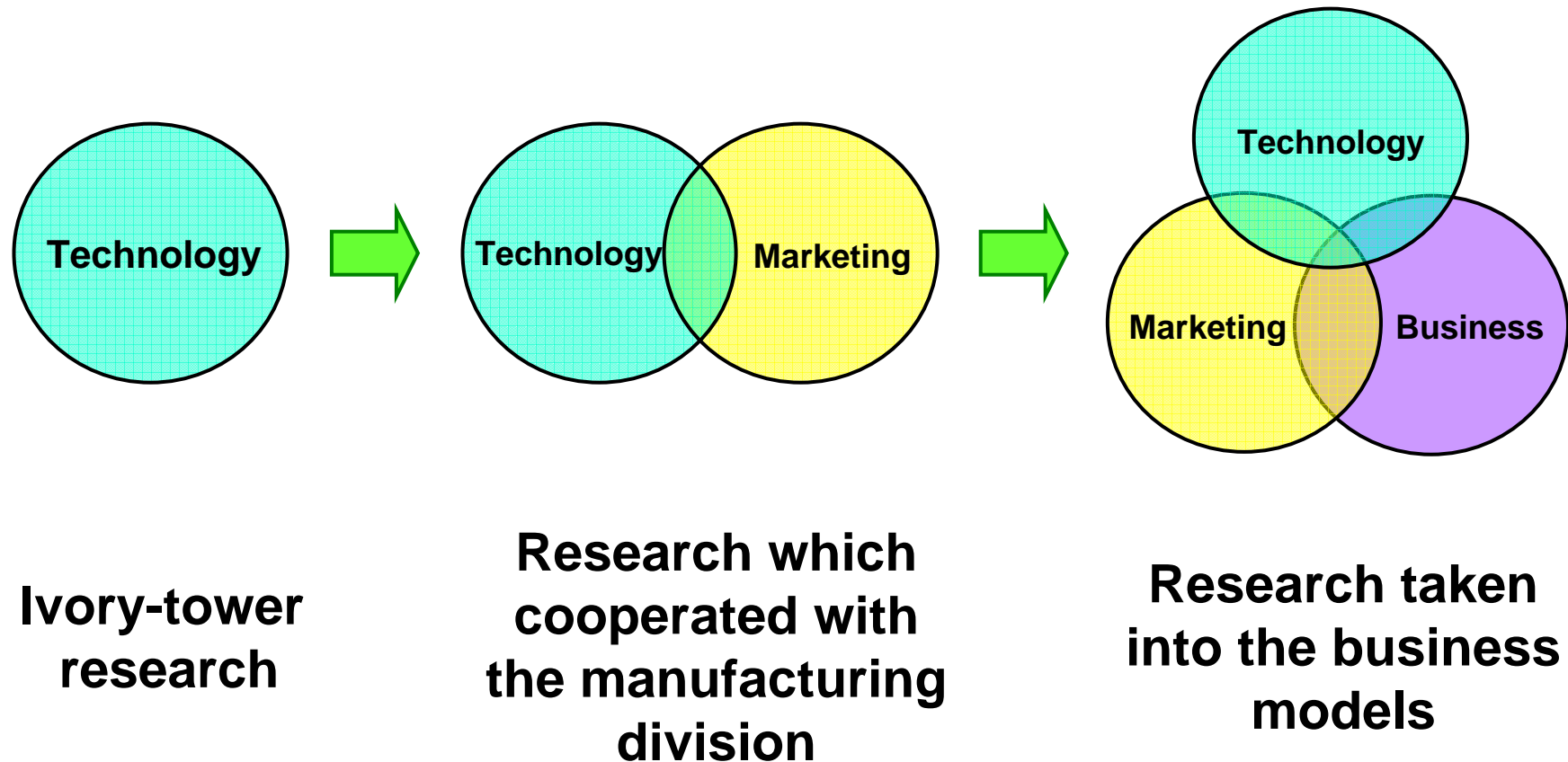
Circuit merged logic and storage functions

Ferroelectric-based functional pass-gate



Changes of R&D Organization

From the beginning of R&D process



Academia-Industry Partnership

Ritsumeikan University

ROHM Plaza

(from April 2000)



(Biwako Kusatsu campus, Shiga)

**Next generation VLSI
development**

Doshisha University

ROHM Plaza

(from September 2003)



(Kyotanabe campus, Kyoto)

**Raising future leaders of
multimedia software**

Kyoto University

ROHM Plaza

(from May 2005)



(Katsura campus, Kyoto)

**Comprehensive industry-
university alliance**

Exhibitions catering to students

Events and exhibitions are held
introducing ROHM technology and
manufacturing via panels and demos.



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TSINGHUA-ROHM ELECTRONIC ENGINEERING HALL



TSINGHUA-ROHM ELECTRONIC ENGINEERING HALL

Plans call for TSINGHUA-ROHM ELECTRONIC ENGINEERING HALL to be constructed on Tsinghua University's campus, to which the well-equipped research and development facility will bring such features as an international exchange center dedicated to promoting international collaboration between industry and academia, clean room space for the development of semiconductor devices, space for advanced LSI study and research, space for joint research by Tsinghua University and ROHM, and a 300-seat hall for academic presentations.



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R&D inclusive agreement between ROHM and Kyoto Univ.



R&D theme

■ **R&D of advanced technology for devices with new function and high performance**

- R&D of wide gap semiconductor: SiC
- Research of post MOSFET function memory

■ **New generation technology development for future optical devices**

- Development of optical device using photonic crystal
- R&D of ZnO system compound semiconductor
- R&D of GaN system compound semiconductor
- Development of electrode material for compound semiconductor device

The style of new strategic industry-university cooperation

(Cross-industrial association inclusive industry-university fusion alliance)

