Crystal Bridge to the Future

1st Half Results of FY2009, ended March 31,2010

9th November, 2009

NIHON DEMPA KOGYO CO., LTD.

Contents

Ⅰ. 1st half results of FY2009, ended March 31,2010

Ⅱ. Correspond with the polarized needs

1. For mass products' needs

（1）Mobile communications

（2）Audio visual/Office automation

（3）Quartz crystal tuning fork

（4）Production shift to overseas factories

2. For high accuracy products' needs

（1）Fixed radio communications

（2）Automotive electronics

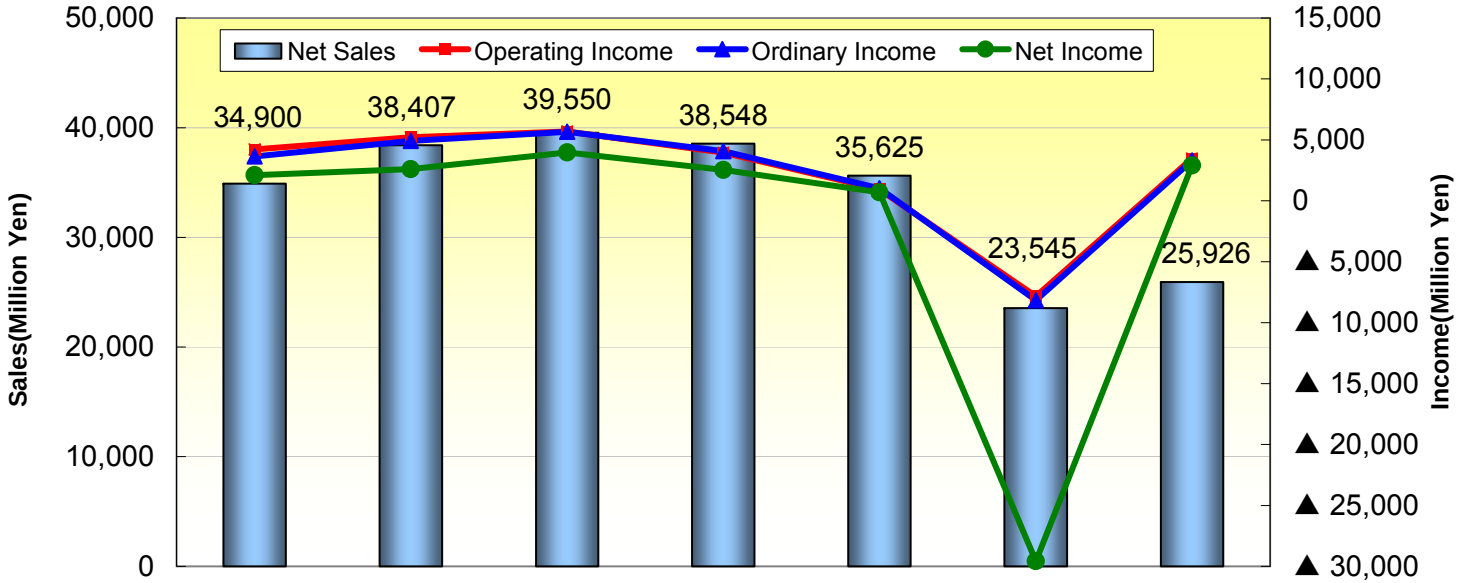
Ⅲ. New technologies & products

Ⅳ. Finally

Ⅰ. 1st half results of FY2009

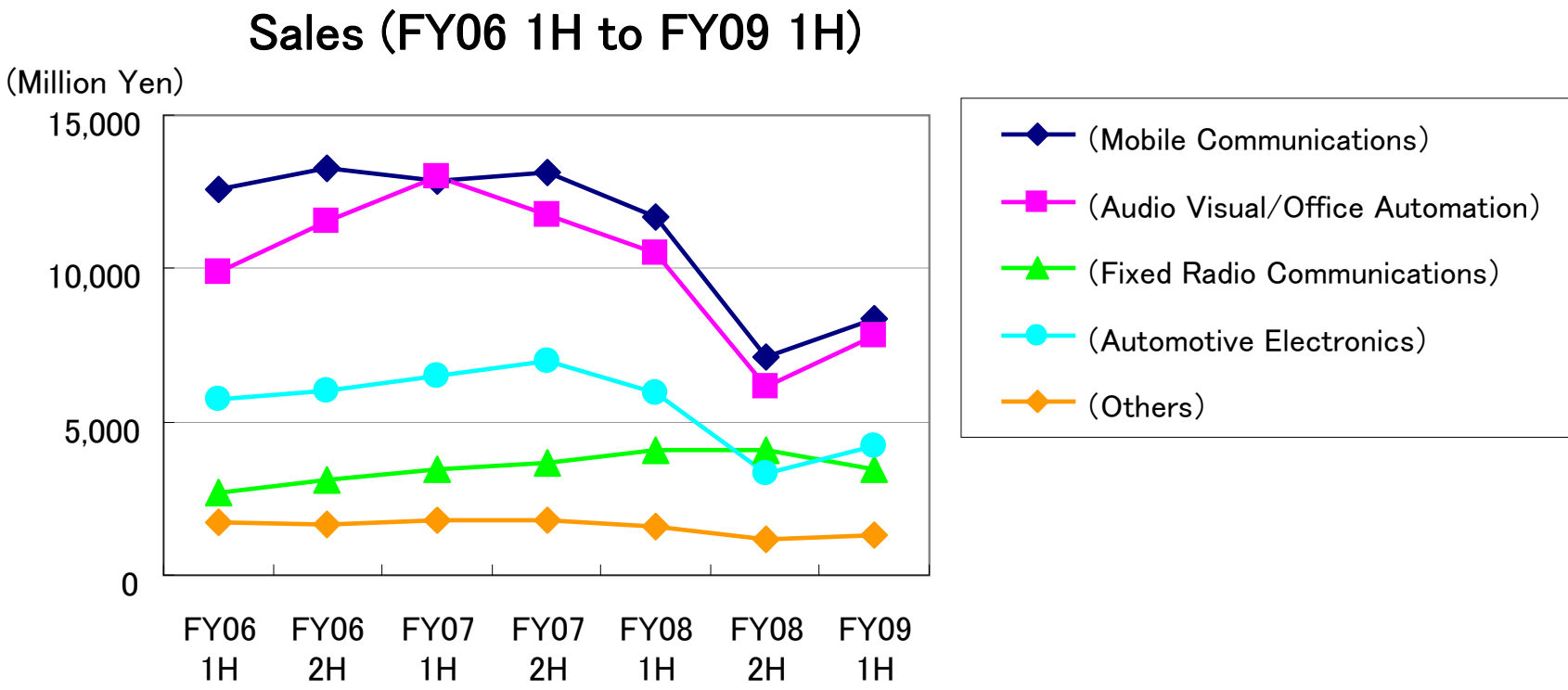
➢ **Points**:

1. **Sales rose 35% compared to 2nd half of FY2008 and returned to the 85% level of 1st half of FY2008.**
2. **On the other hand, sales price keeps falling and sales remain at the 70% level of 1st half of FY2008.**
3. **Returned to profit that includes special factors such as 3 billion yen reduction of unrealized loss incurred by inventory evaluation.**



	2006/1H	2006/2H	2007/1H	2007/2H	2008/1H	2008/2H	**2009/1H**
Net Sales	34,900	38,407	39,550	38,548	35,625	23,545	**25,926**
Operating Income	4,209	5,218	5,696	3,948	937	▲ 7,845	**3,489**
Ordinary Income	3,642	4,909	5,664	4,070	1,024	▲ 8,168	**3,308**
Net Income	2,107	2,609	3,962	2,542	698	▲ 29,571	**2,912**
Operating Income Ratio	12.1%	13.6%	14.4%	10.2%	2.6%	-33.3%	**13.5%**

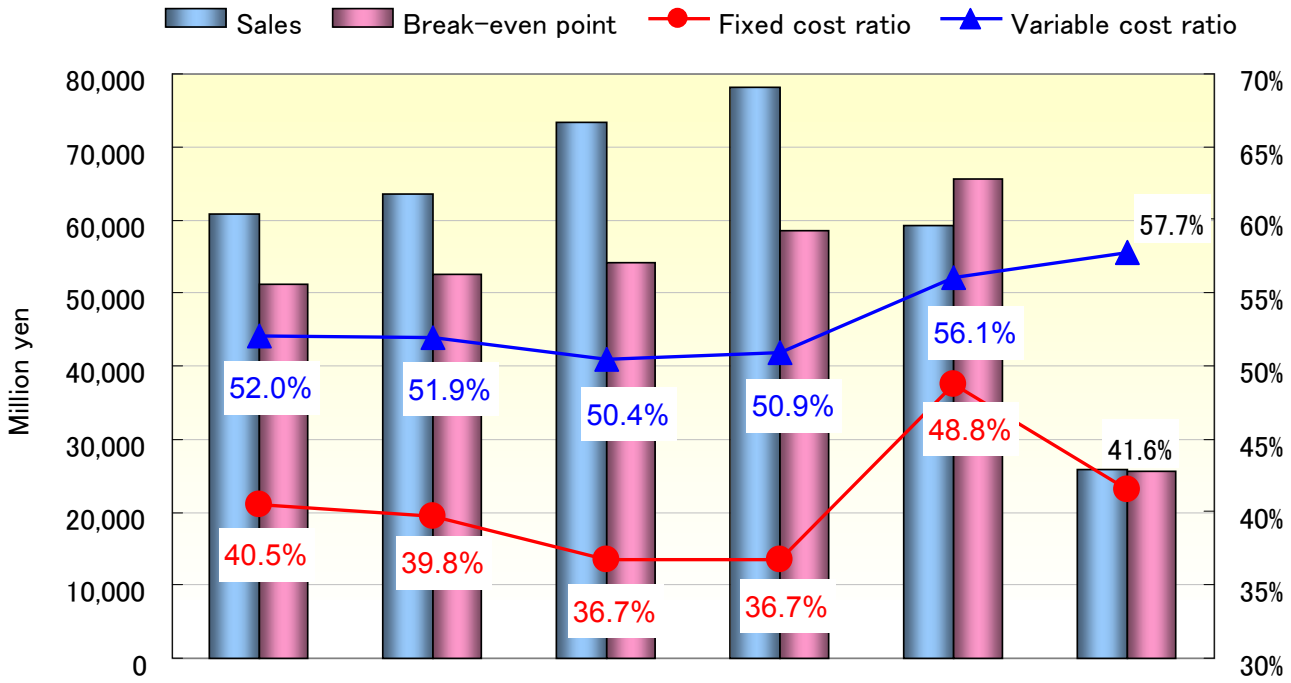
■Sales trend of main applications



Sales in Mobile Communications, Audio Visual/Office Automation and Automotive Electronics recovered at 1st half of FY2009

Ⅰ. 1st half results of FY2009

Lowered break-even point mainly by reduction of fixed cost such as depreciation.



	2005/3	2006/3	2007/3	2008/3	2009/3(*)	2009/9(*)
Sales	60,695	63,642	73,307	78,098	59,171	25,926
Variable cost ratio	52.0%	51.9%	50.4%	50.9%	56.1%	57.7%
Fixed cost	24,610	25,309	26,896	28,679	28,863	10,785
Fixed cost ratio	40.5%	39.8%	36.7%	36.7%	48.8%	41.6%
Break-even point	51,305	52,672	54,280	58,445	65,689	25,525
Break-even point ratio	84.5%	82.8%	74.0%	74.8%	111.0%	98.5%

(*) Exclude unrealized loss on ending inventories as of March 09 & Sep 09.

Ⅱ. Correspond with the polarized needs

Flattening & digitalizing society

Inexpensive consumer terminal

Highly networked system

Price destruction at mass components

Component demand with high accuracy & advanced function

Everyone in the world can gain information !

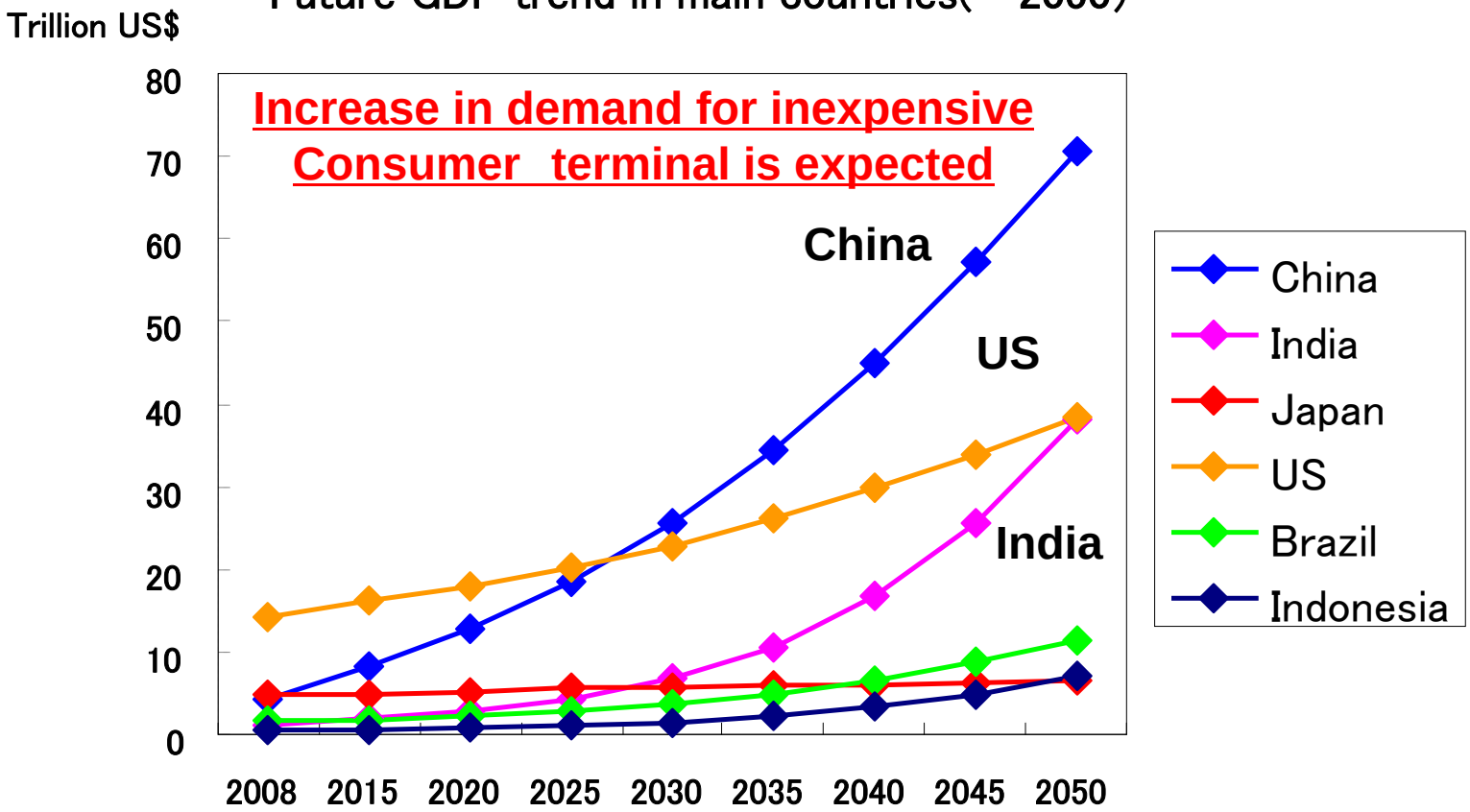
Correspond with the polarized needs!

Support the growing information!

Ⅱ.1 For mass product' needs（Growing GDP in emerging countries）

■GDP in emerging countries such as China, India etc. will grow largely.

Future GDP trend in main countries(～2050)

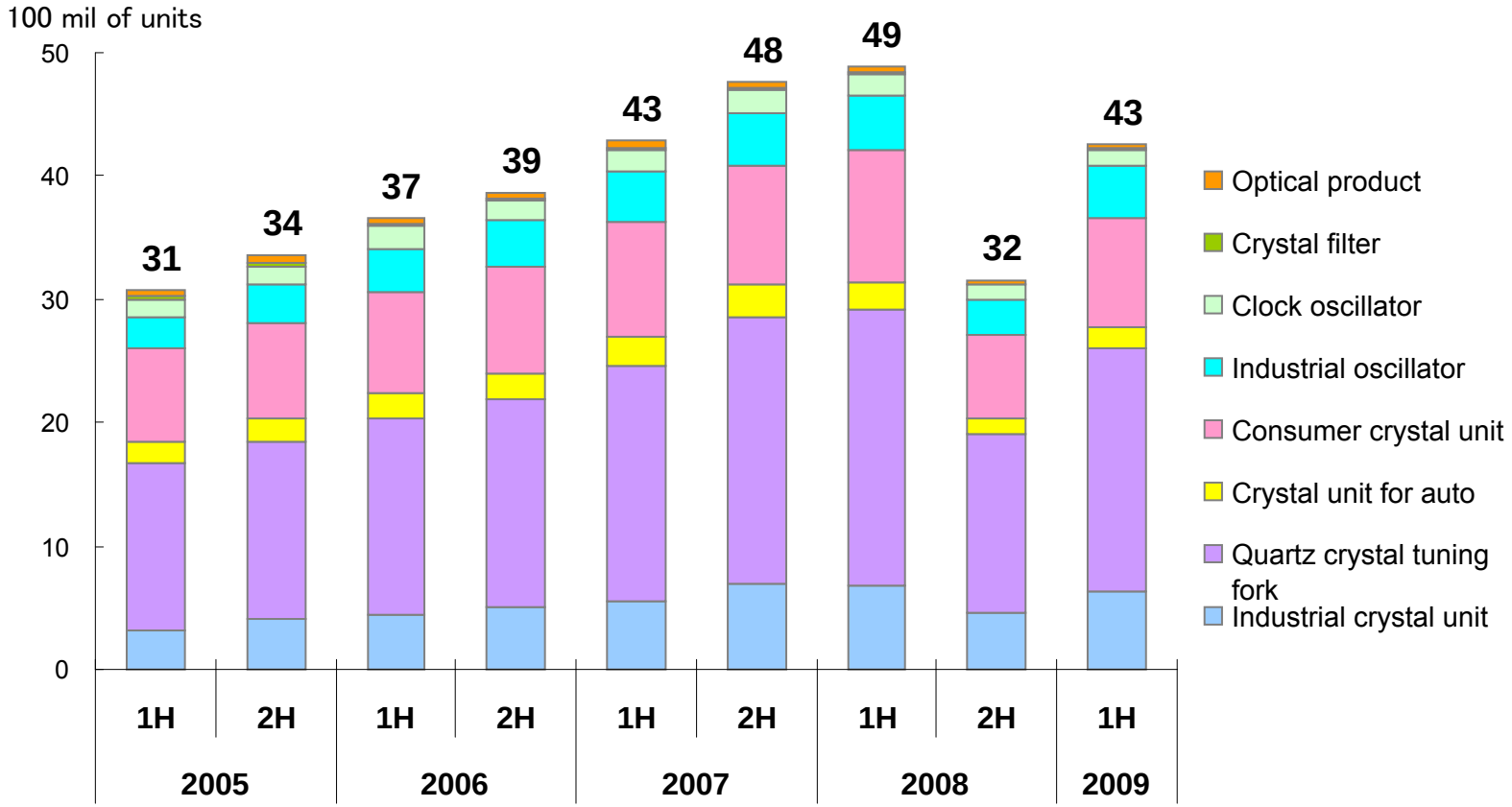


（Reference）2008(results) from IMF, estimate after 2008 from Goldman Sachs

Ⅱ.1 For mass products' needs（Volume of crystal products will grow）

Semi-annual trend of the production volume of crystal products(100 mil units)

The volume will grow steadily



**"We consider the QIAJ data do not reflect the overall SAW device trend since QIAJ only includes SAW devices whose board material is quartz crystal (In fact, the major material is Lithium niobate). Thus we excluded "SAW devices" .

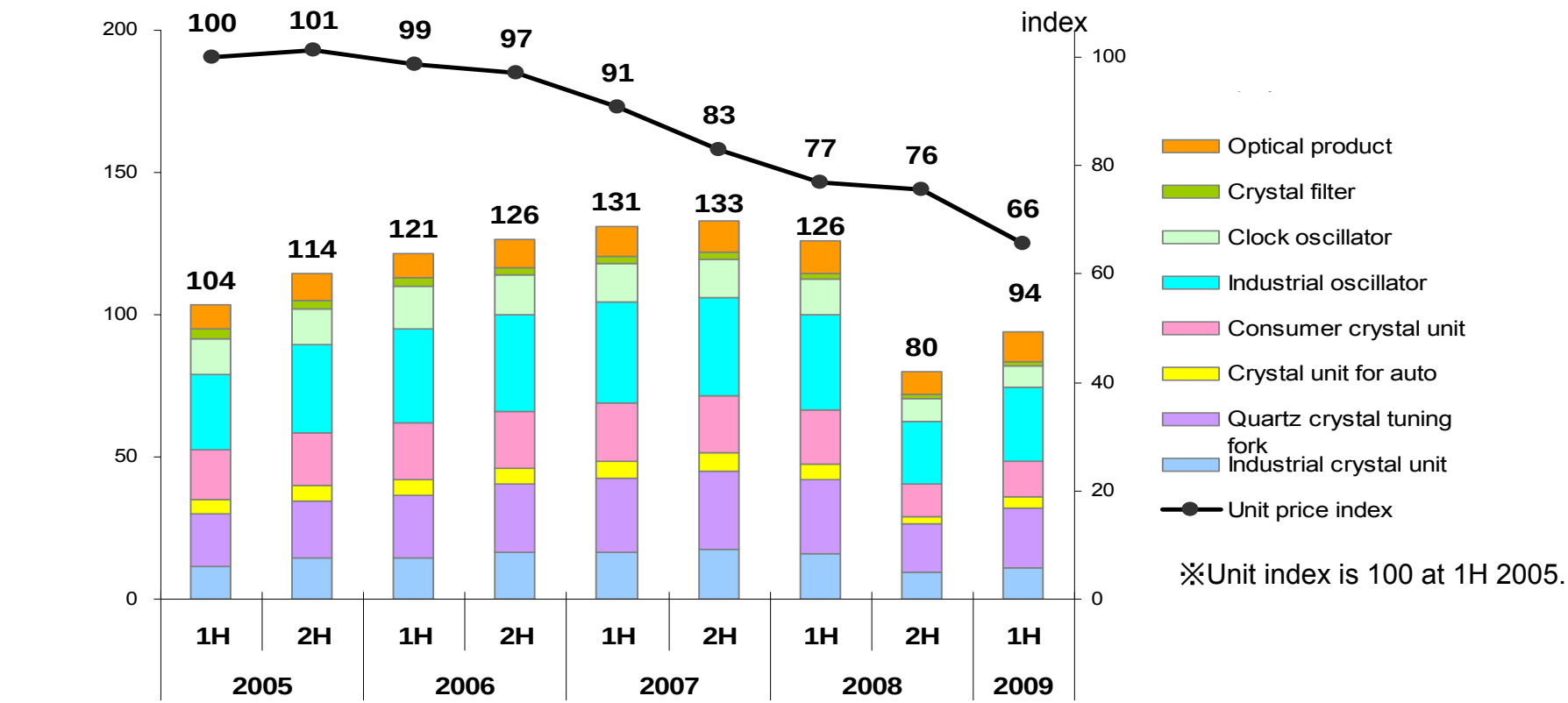
* SAW and OUT-OUT are not included.

（Reference) QIAJ : Quartz Crystal Industry Association of Japan

Ⅱ.1 For mass products' needs（Value of crystal products grows slowly ）

Trend of the production value of crystal devices (billion yen) & unit price (index)

Growth of the production value is struggling due to price decrease



※Unit index is 100 at 1H 2005.

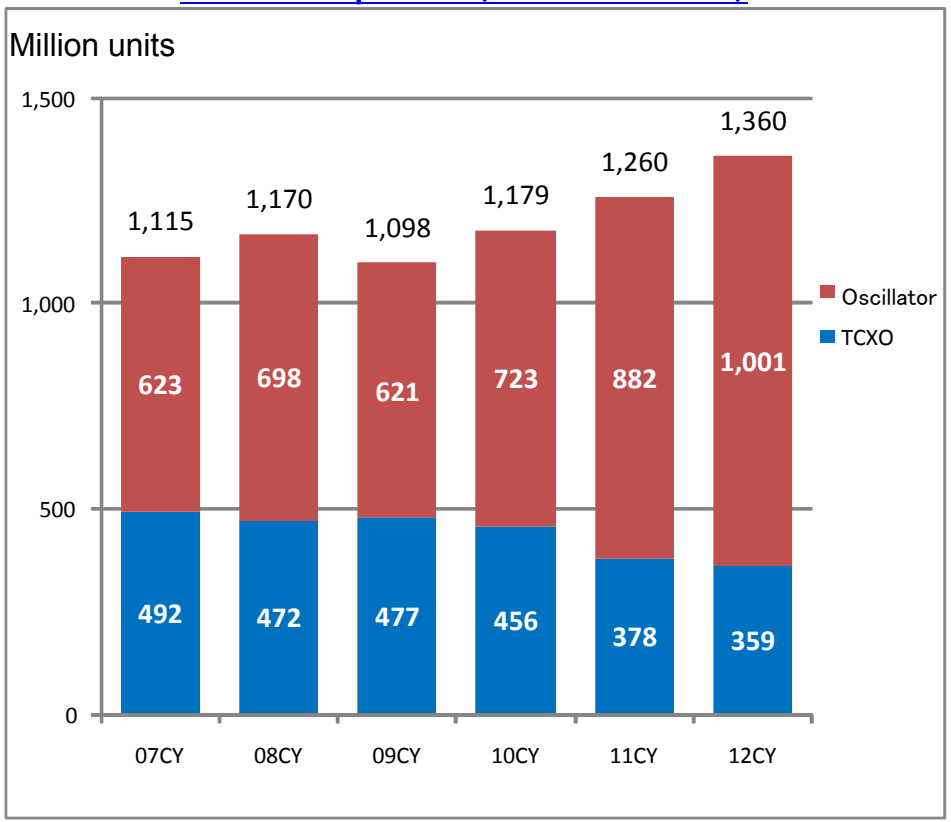
**"We consider the QIAJ data do not reflect the overall SAW device trend since QIAJ only includes SAW devices whose board material is quartz crystal (In fact, the major material is Lithium niobate). Thus we excluded "SAW devices" .

* SAW and OUT-OUT are not included.

（Reference) QIAJ : Quartz Crystal Industry Association of Japan

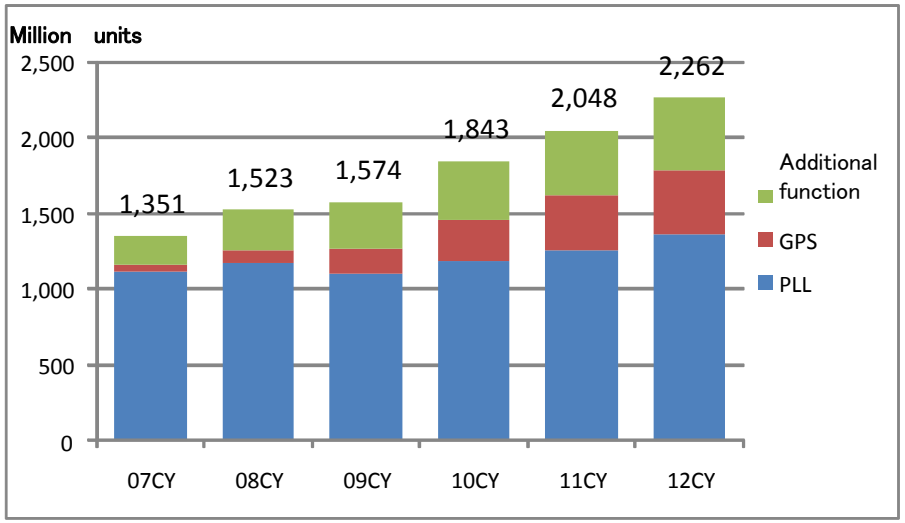
Ⅱ.1(1) Mobile Communications（Growing GPS・smart phone）

Volume of crystal products used for PLL of mobile phone (NDK estimate)



Reference：NDK

Volume of crystal devices used for mobile phone additional functions (NDK estimate)



Reference：NDK

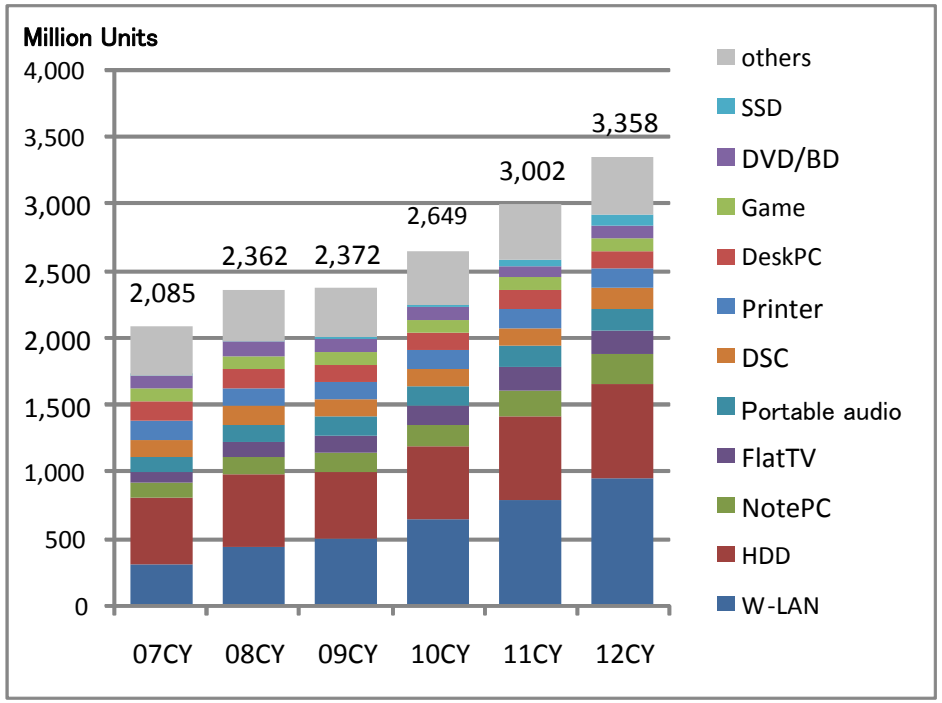
＜Trend in mobile phone hand sets＞

＊Increase in inexpensive hand set promotes oscillator use at PLL part and demand for TCXO will decrease

＊Oscillator for additional functions such as TCXO for GPS, smart phone, etc will increase

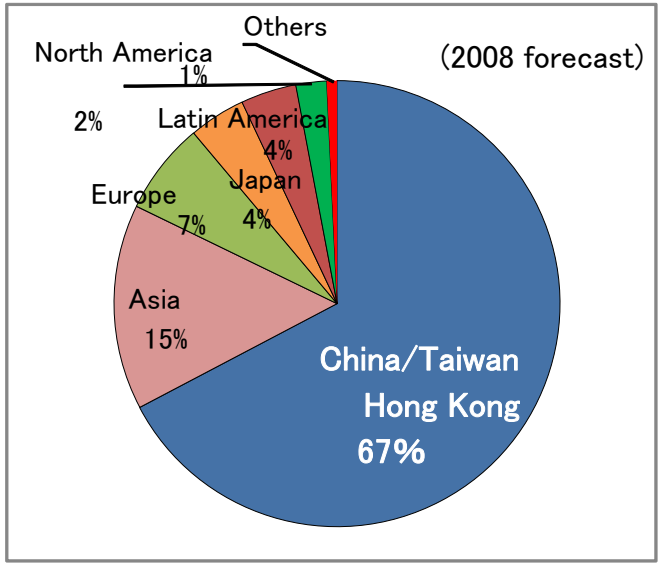
Ⅱ.1(2) Audio Visual/Office Automation（Target the growing use/area）

Production volume of Audio Visual/Office Automation (NDK estimate)



Reference：EMI data, JP Morgan, Fuji chimera research, Navian

Production area of Audio Visual/Office Automation



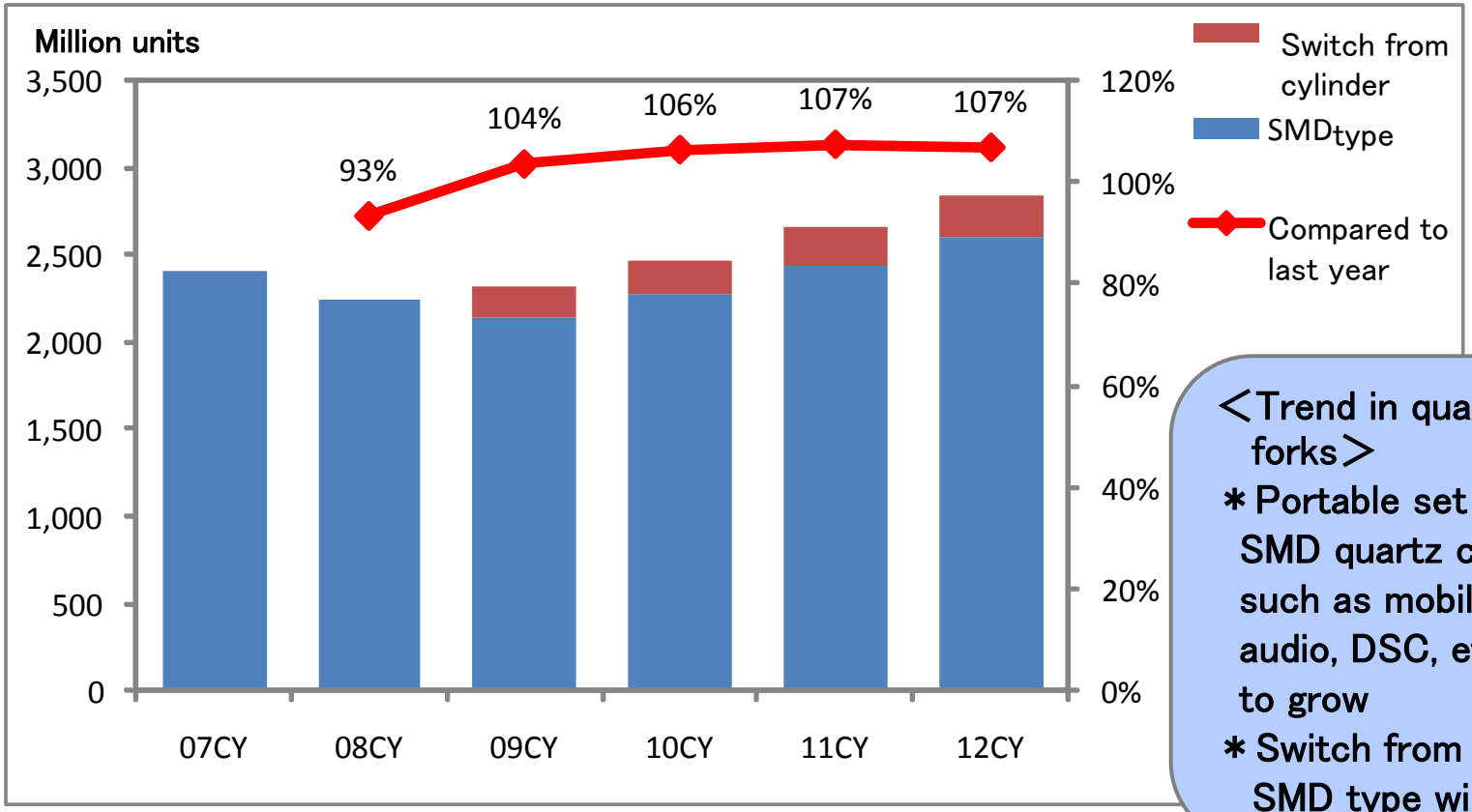
Reference：Fuji chimera research

＜Trend in set devices＞
＊Growth remains unchanged through FY08 to FY09 but expected to grow in the medium run
＊67% of the production are in China area in 2008

Ⅱ.1(3) Quartz crystal tuning fork

Market trend in quartz crystal tuning fork (SMD) (NDK estimate)

Reference：NDK



＜Trend in quartz crystal tuning forks＞

＊Portable set devices using SMD quartz crystal tuning fork such as mobile phone, portable audio, DSC, etc are expected to grow

＊Switch from cylinder type to SMD type will continue

Ⅱ.1(4) Production shift to overseas factories

■Production of mass products shift to Suzhou and Malaysia

Overseas factories

- Utilize inexpensive labor power
- Reduce the influence of exchange fluctuations

The labor cost between Suzhou and Malaysia tends to diminish

Production for recovering orders will be shifted to overseas factories

Influence on operating profit

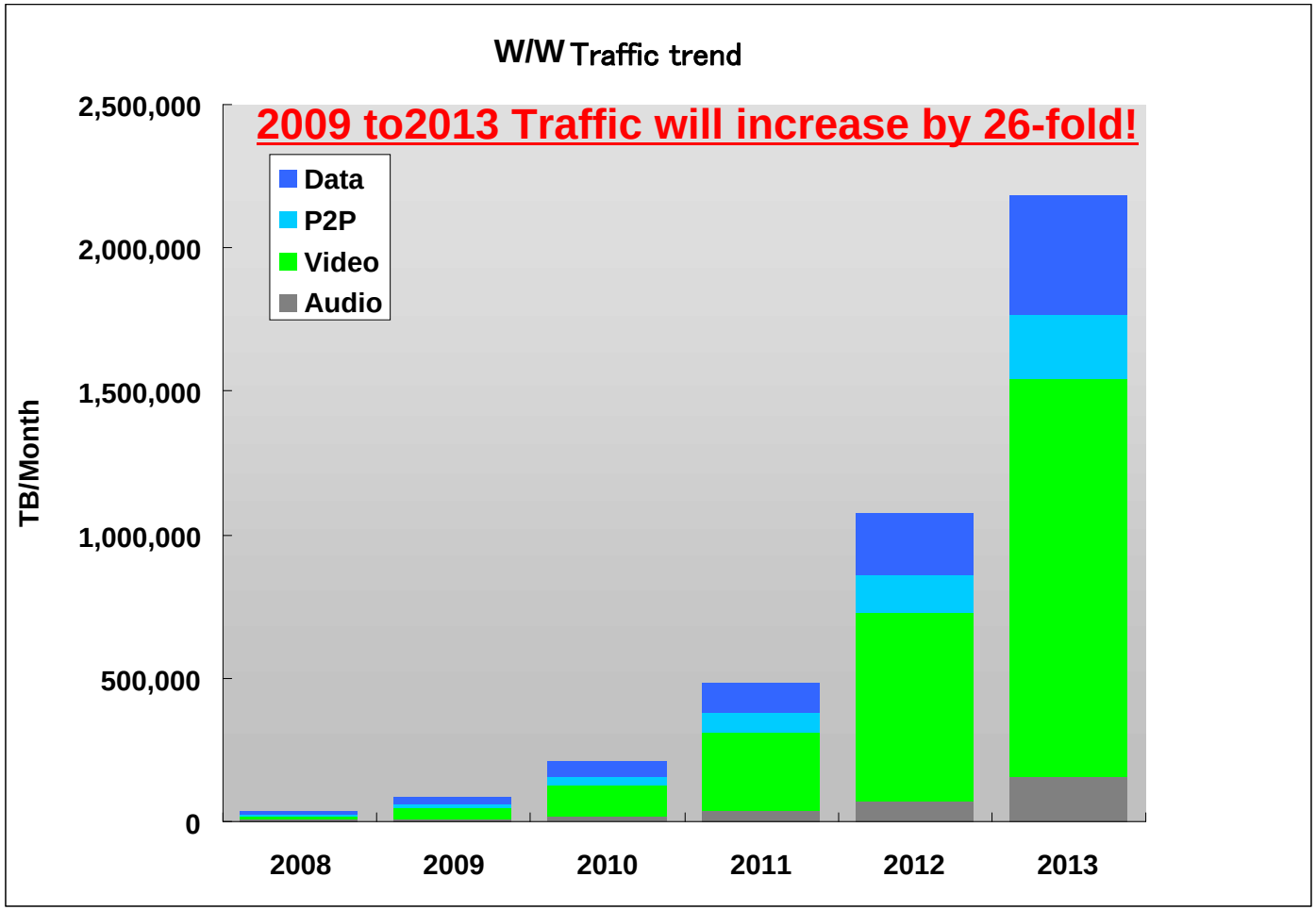
¥1 change ⇒ approx. ¥50 mil

¥10 change⇒ approx. ¥500 mil

The influence on profit caused by exchange fluctuations is diminishing due to increase of overseas production ratio

Expected exchange rate for FY2009 2nd half（US$）：¥90
（FY2009 1st half result：¥95）

Ⅱ.2 For high accuracy products' needs（Support the growing information）



（Reference：Cisco Systems）

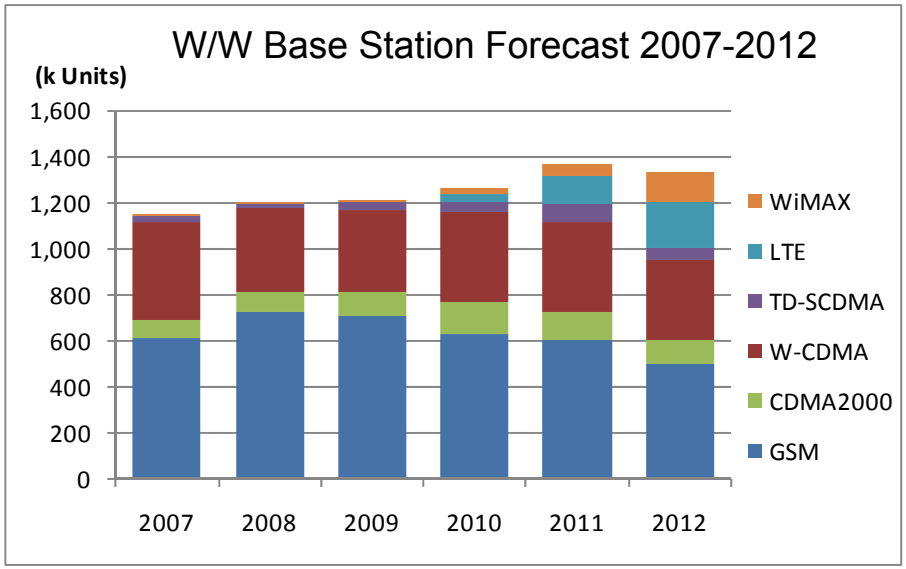
Especially, data of moving images are expected to increase largely

(※)P2P・・・Network system in which PCs communicate with each other directly on equal footing, independent from a specific server

Ⅱ.2(1) Fixed Radio Communications（Expanding infrastructure market）

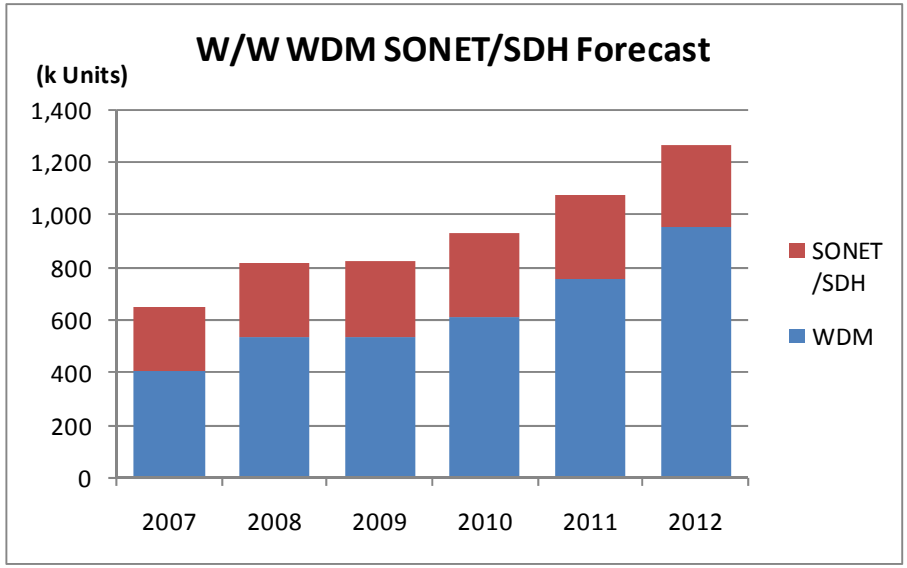
Crystal Bridge to the Future

Market trend of mobile phone base station （shipment volume）



Reference: EJL

Market volume of optical communication devices (shipment volume)



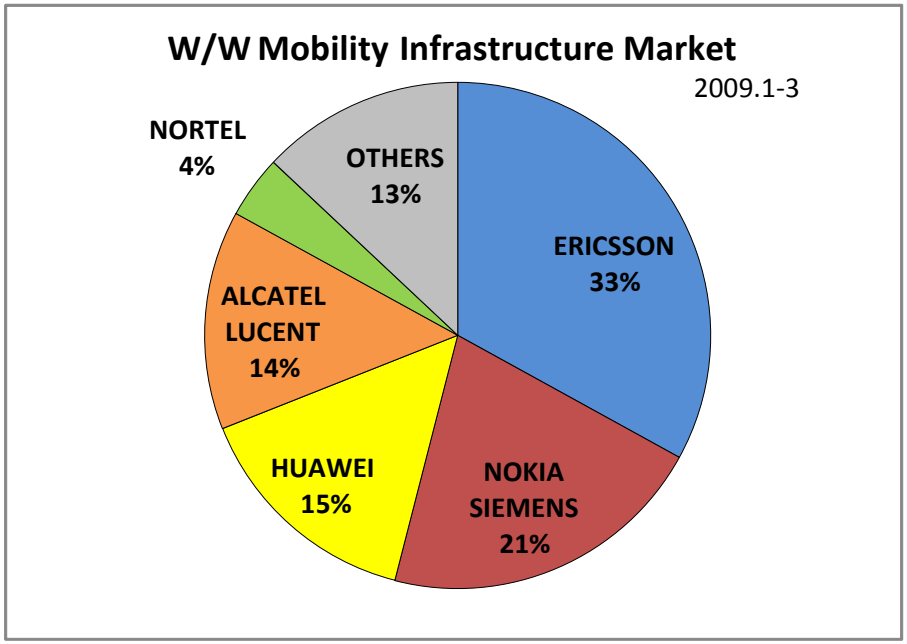
Reference：Dell`Oro

＜Overall trend＞
Increase in traffic is expected to generate firm growth in infrastructure devices such as mobile phone base stations, optical communication devices, etc

Ⅱ.2(1) Fixed Radio Communications（Relationship with infrastructure companies）

Manufacturers of mobile phone base stations

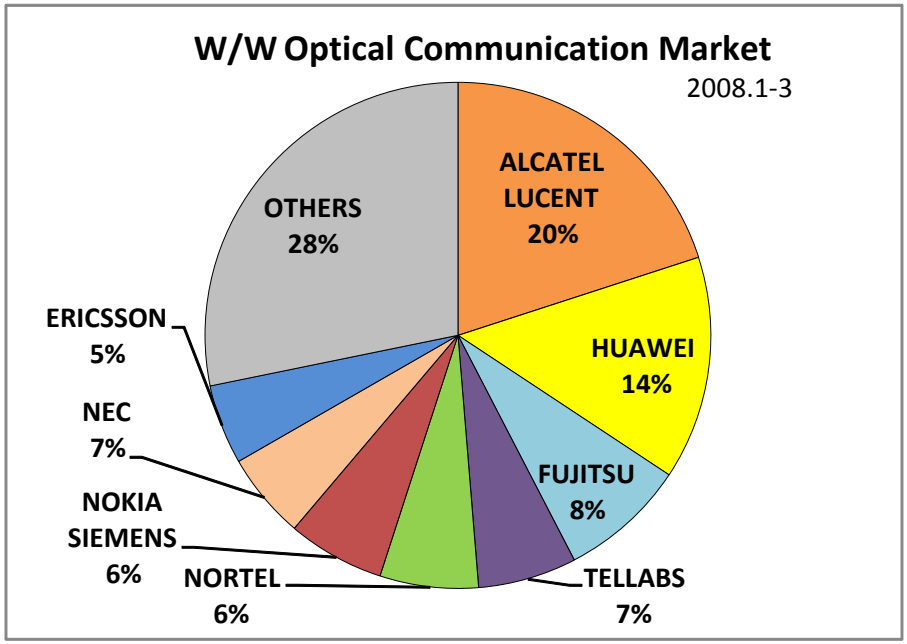
（sales base）



Reference：Dell`Oro

Manufacturers of optical communication devices

（sales base）



Reference：Ovnu-RHK

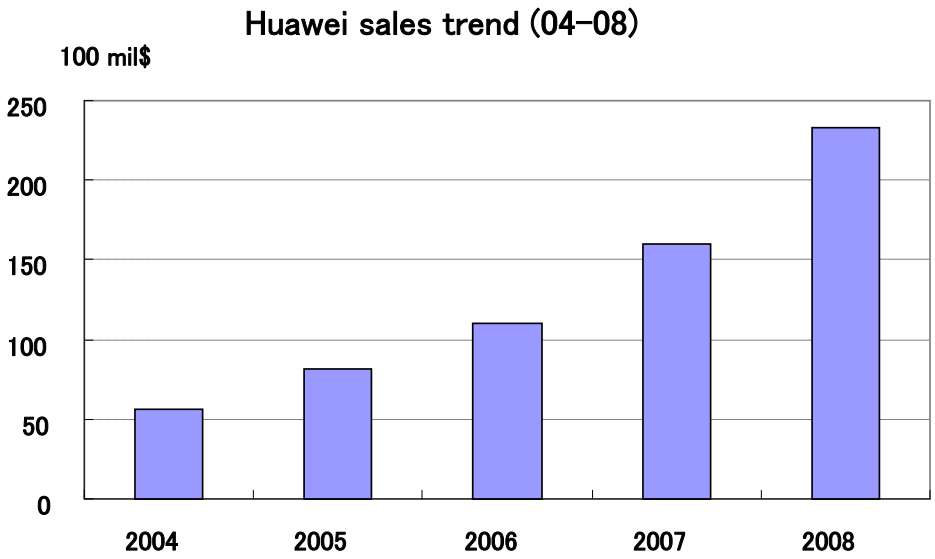
＜Overall situation＞
US European and Chinese companies have the overwhelming share

Ⅱ.2(1) Fixed Radio Communications (As a core partner of Huawei)

Crystal Bridge to the Future

Received "Excellence Global Core Partner" prize from Huawei

2009 global core partner convention was held on November 5 and NDK has been selected as a core partner of Huawei. This award is given to the top 10 suppliers among approx. 2000 companies.



37,000 staff, which is 43% of the total employee are working at 14 R&D centers located worldwide.

Reference: Nikkei business daily (03/08/09)

Ⅱ.2(1) Fixed Radio Communication (Developed 1ppb OCXO)

Crystal Bridge to the Future

October 2009

Developed single-oven OCXO with super high precision performance equivalent to double-oven OCXO

NH37M28L series

(37×28×H19(max)mm)

New technology made it possible to produce super high precision OCXO by single oven, frequency with temperature characteristics of ±1×10-9/-40～85℃

The stability of ±1×10-9

Even if external temperature fluctuates from -40 to 85℃, frequency moves only ±1 billionth.

To realize this high precision, crystal oscillator is usually put into double oven (an electronic oven is put into another electronic oven) to avoid influence of external temperature

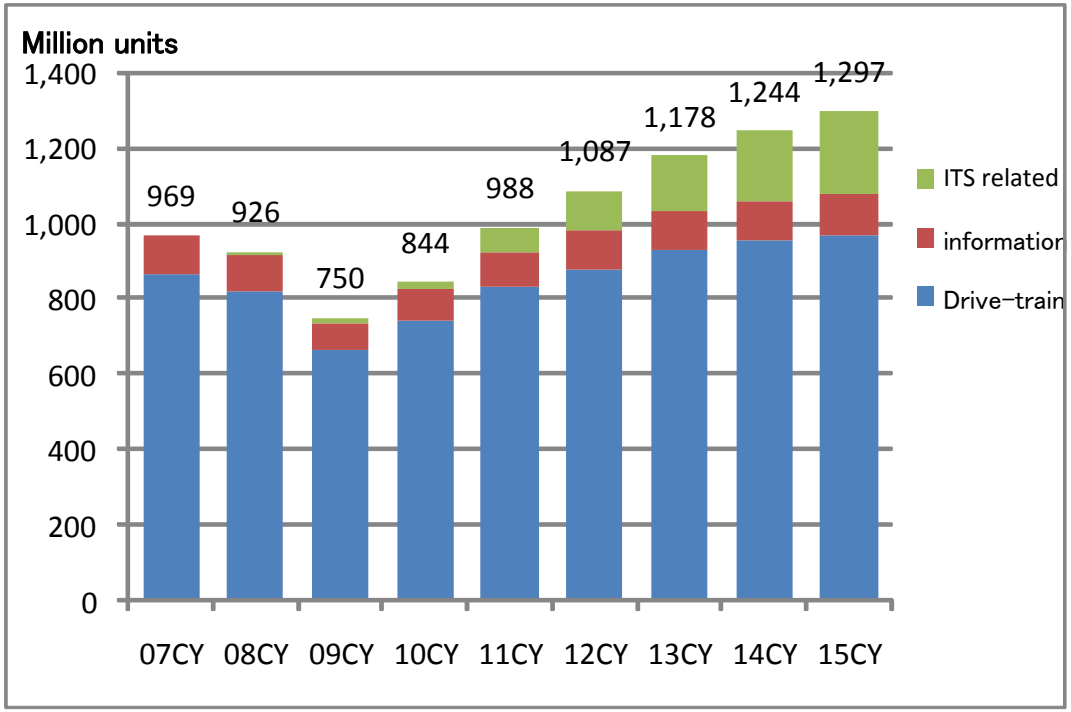
If "one billionth" is described in distance, it means you aim at a target set on the equator from north pole (about 10 thousand Km) and the result is only 1cm gap with the target

This small sized product saves about 70% of power due to its success of realizing super high precision with single-oven

Ⅱ.2(2) Automotive（Correspond with new use & maintain high share）

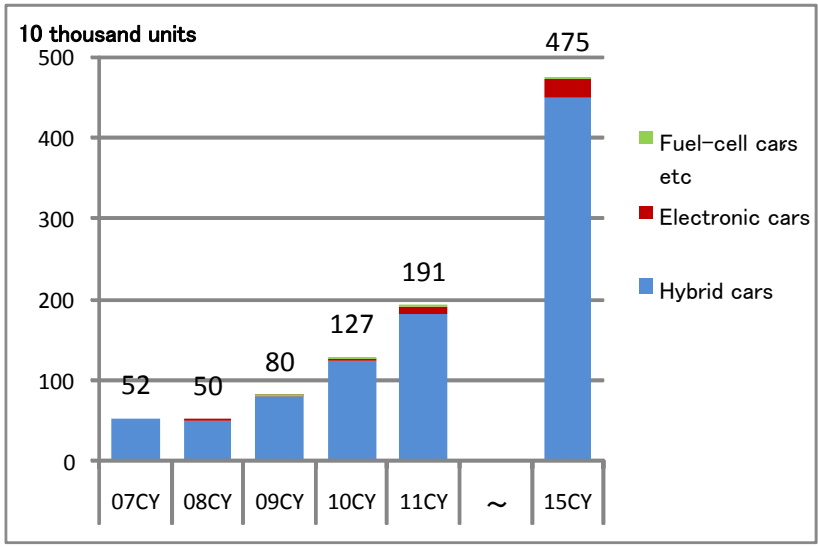
Crystal Bridge to the Future

Amount of crystal quartz used for auto by function (NDK estimate)



Reference：NDK

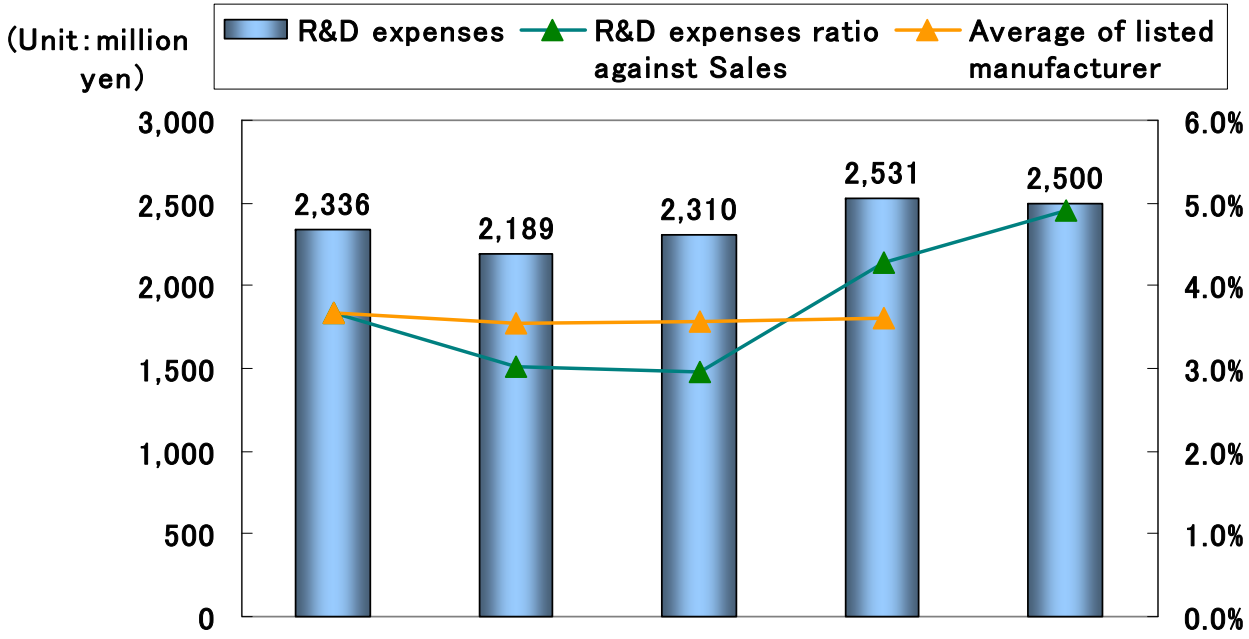
Worldwide sales volume forecast of hybrid/electronic cars



Reference：Nikkei MA

＜Trend in automotive market＞
＊The market is supposed to recover from the lowest in 2009
＊New demand can be expected for hybrid/electronic cars, ITS and information related

Ⅲ. New technologies & products（Maintain certain R&D expenses）



	06/3	07/3	08/3	09/3	10/3 plan
R&D expenses	2,336	2,189	2,310	2,531	2,500
R&D expenses ratio against Sales	3.7%	3.0%	3.0%	4.3%	4.9%
Average of listed manufacturer	3.7%	3.6%	3.6%	3.6%	

NDK will maintain certain R&D expenses for product developments in FY09.

Ⅲ. New technologies & products（Biosensor）

Crystal Bridge to the Future

＊ Now providing immune sensor system using crystal oscillators to leading research institutes & universities. (product name : NAPiCOS)

＊ Accomplished one of the world's highest sensitivity (10ng/ml) and shortest time measuring (one fifth of the conventional technology) system

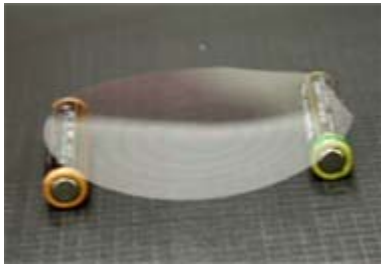
＊ The technology will be expanded to various applications.
＜e.g.: immune reaction, biochemistry, molecular biology, clinic, food, environment, etc ＞

Ⅲ. New technologies & products（MEMS technologies for next generation）

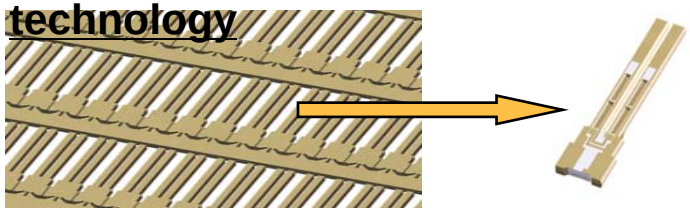
NDK is pursuing crystal device of small, high accuracy and advanced function by combining three technologies. The three technologies are the technology to develop crystal of high quality, the technology to process wafer, and the photolitho technology which is essential for micro processing.

Technology to develop crystal of high quality

Technology to process large or thin wafer



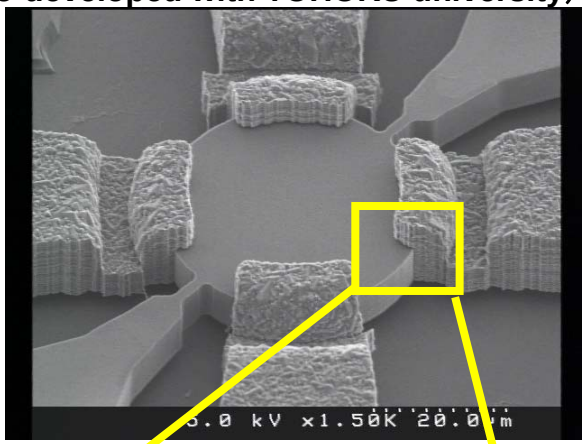
Photolithography technology

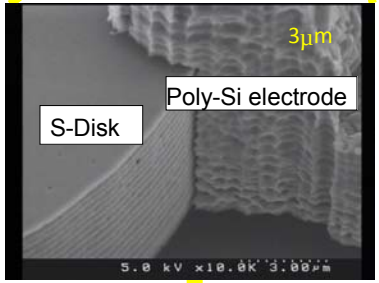


Creation of new technology

Silicon oscillator

Silicon disc oscillator
（co-developed with TOHOKU university）





Distance between disc and electrode：100nm

Ⅲ. New technologies & products（Cutting-edge R&D）

Highly skilled engineers are engaged in the leading R&D regarding next generation frequency control and selection at this “Laboratory ATOM”.

《Laboratory ATOM》

Started operation from May 8, 2009

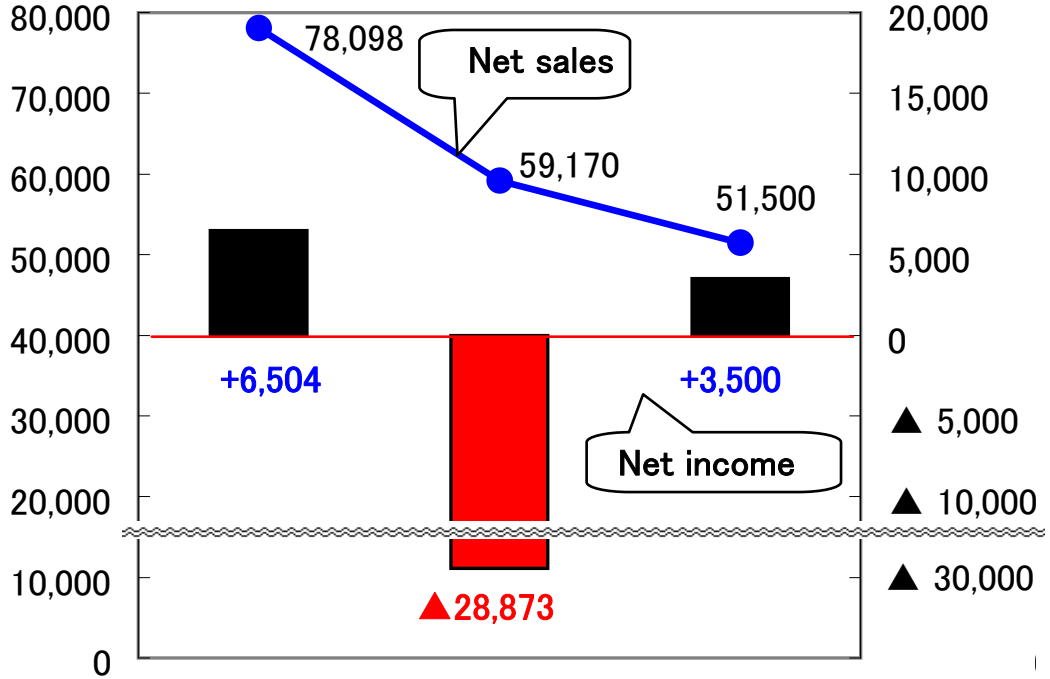
Ⅳ. Finally（Cash flow）

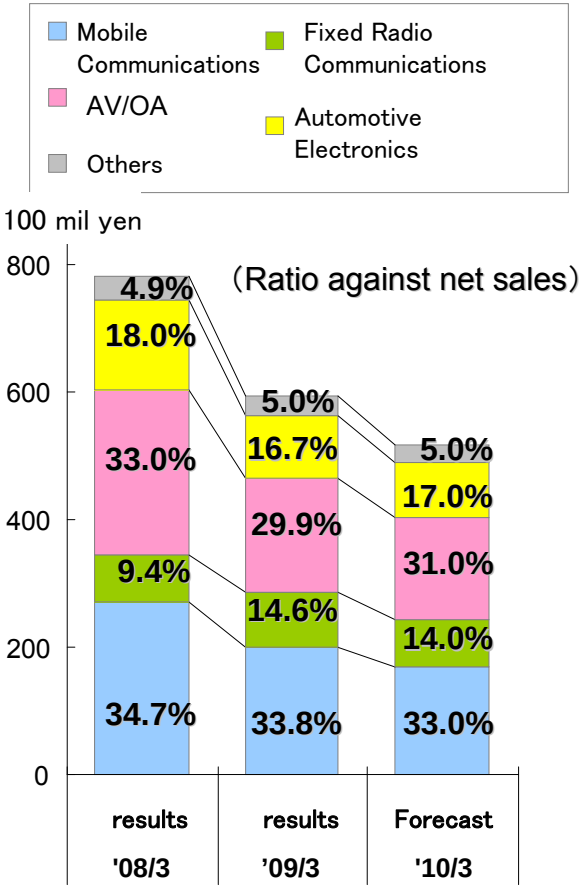
（Million yen）

	09/3	08/9	09/9
Income before taxes	▲ 25,423	887	2,731
Depreciation	9,015	4,690	1,900
Change in receivables	5,852	▲ 238	▲ 2,596
Change in inventories	4,826	▲ 853	▲ 3,088
Change in trade payables	▲ 2,256	▲ 303	1,787
Other, net	※ 14,365	▲ 722	2,146
Operating cash flows①	6,379	3,461	2,880
Investing cash flows②	▲ 11,802	▲ 8,449	▲ 3,067
Free cash flows（①+②）	▲ 5,423	▲ 4,988	▲ 187
Financing cash flows	10,063	4,608	▲ 4,592
Ending balance	15,617	11,070	10,658

※Include 16,441 mil yen ending inventory unrealized loss

Ⅳ. Finally（Upward revision for FY2009）





(mil yen)	08/3	09/3	10/3 (upward revision)	10/3 (original)
Net sales	78,098	59,170	51,500	50,000
Operating profit	9,644	▲ 6,908	4,200	3,500
Ordinary profit	9,734	▲ 7,144	3,600	2,500
Net income	6,504	▲ 28,873	3,500	2,000

Ⅳ. Finally（NDK will be well prepared for after FY2009）

Crystal Bridge to the Future

Might be too early to assume that market has fully recovered

<u>NDK will be prepared for a possible unstable future</u>

NDK will establish a stable foundation which will generate stable profit under the new environment after the Lehman shock

Thank you for your attention.
We are grateful for your continuous support.

【Note】
Statements made in this presentation with respect to our current plans, estimates, strategies and beliefs and other statements that are not historical facts are forward-looking statements about our future performance. These statements are based on management's assumptions and beliefs in light of information currently available to it. We caution that a number of important risks and uncertainties could cause actual results to differ materially from those discussed in the forward-looking statements, and therefore you should not place undue reliance on them. You also should not rely on the belief that it is our obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. Risks and uncertainties that might affect us include, but are not limited to; fluctuation of currency exchange rates, overall supply and customer demand in the industry, product development and production capacities, performance of affiliated companies, and other risks and uncertainties.