

April 18, 2003

**Toray's Strategies of
Electronics & Information
Related Business and
LCD Material Business**

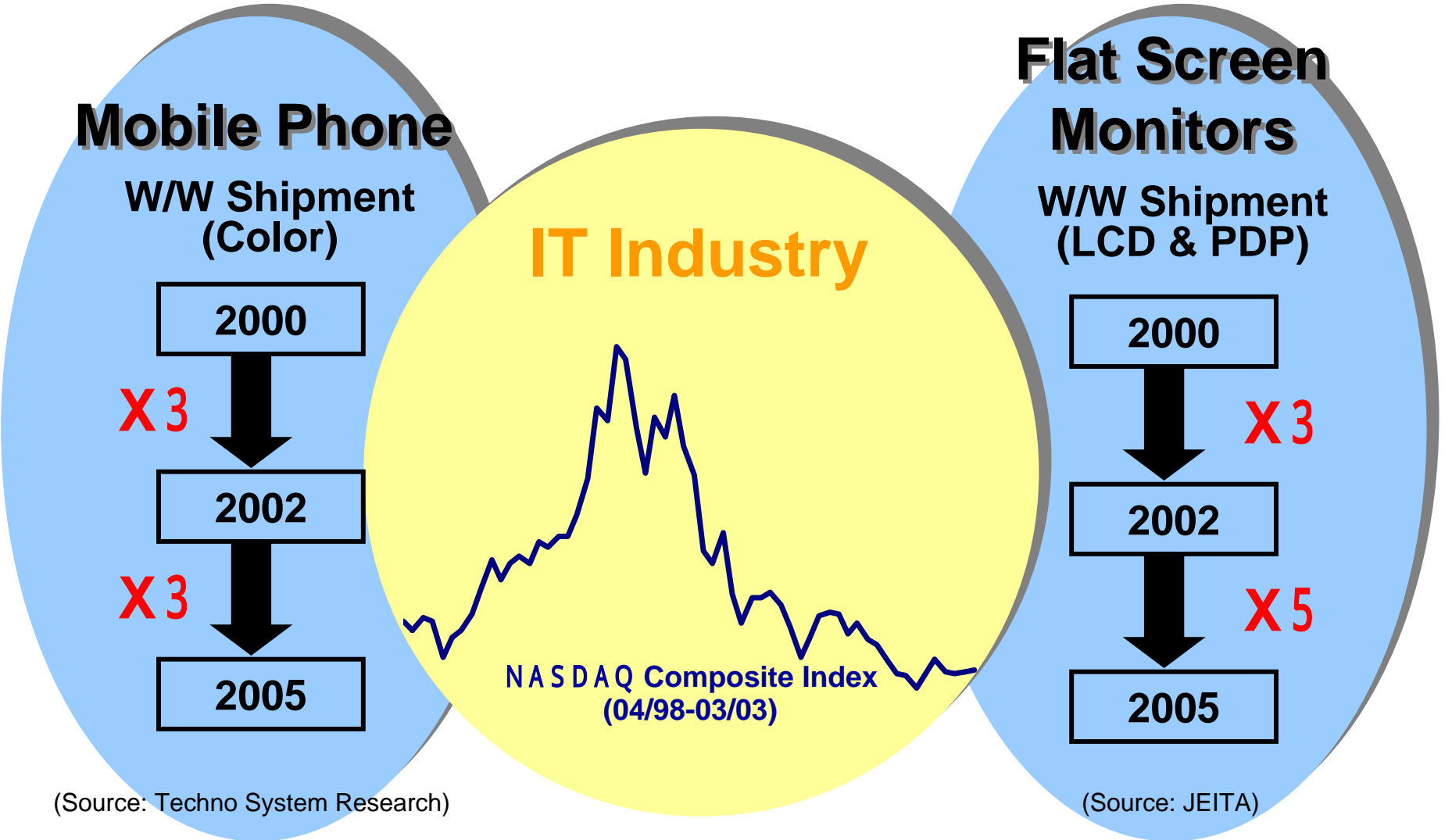
Keizou Sano, Managing Director

Ginjiro Ishi, Director

Toray Industries, Inc.

'TORAY'

IT Industry Outlook: "IT Still Matters"



IT Products Steadily Penetrating Our Daily Life

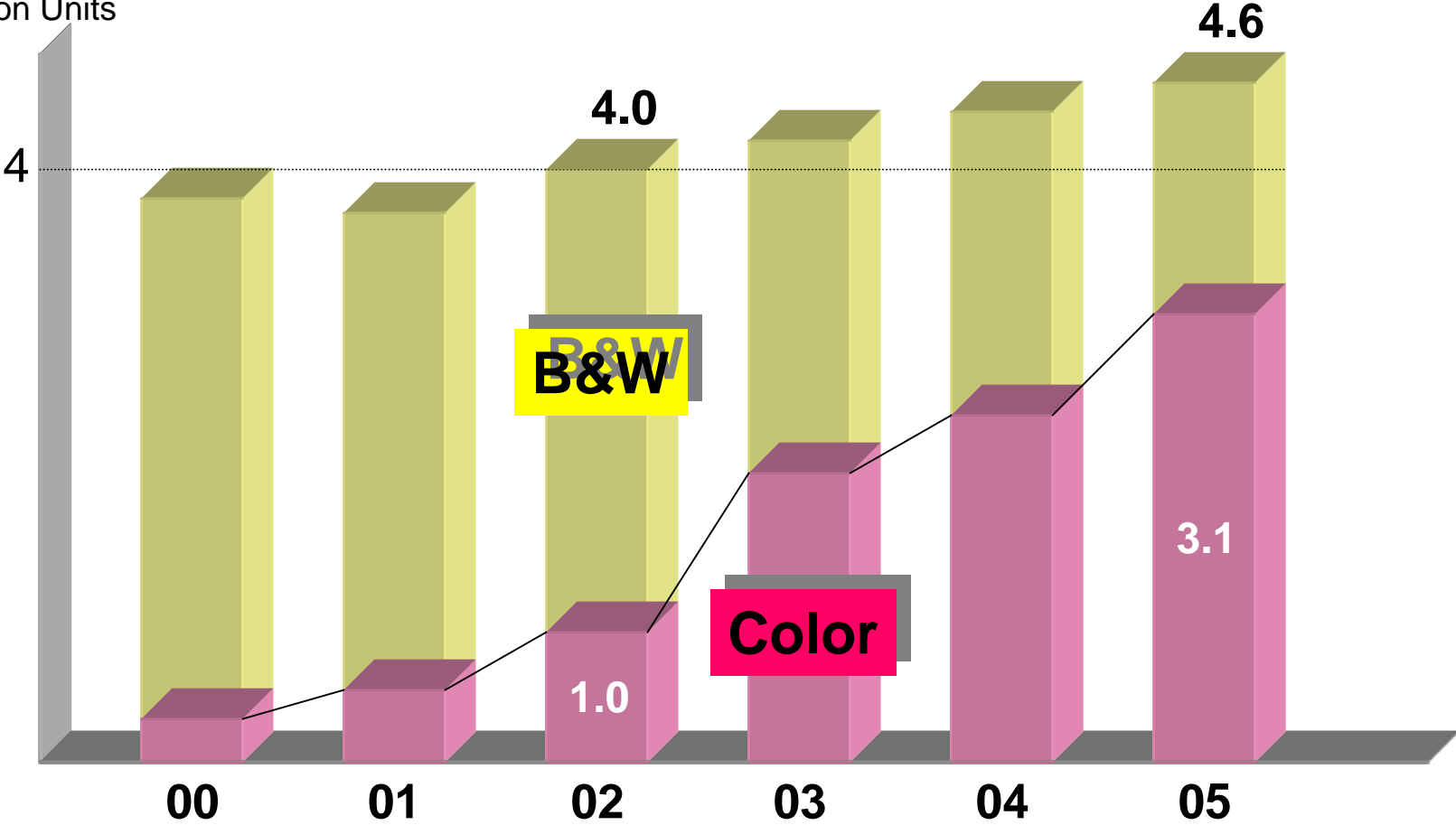


A Growing Market Segment Showcased

Mobile Phone

While Total Shipment Growth Ramps Down in the Wake of the IT Bubble, the World's **Colorized** Mobile Phone Market Grows Rapidly

W/W Shipments
100 million Units



(Source: Techno System Research)

Forecast



Toray's IT Industry Commitment

Processing

Circuit Materials

Semiconductor Materials

IC Packaging Materials

Polyimide Films

Condenser Films

IC Mounting Equipment

Display

PDP TVs

PDP Materials

Color Filters

LCD Films

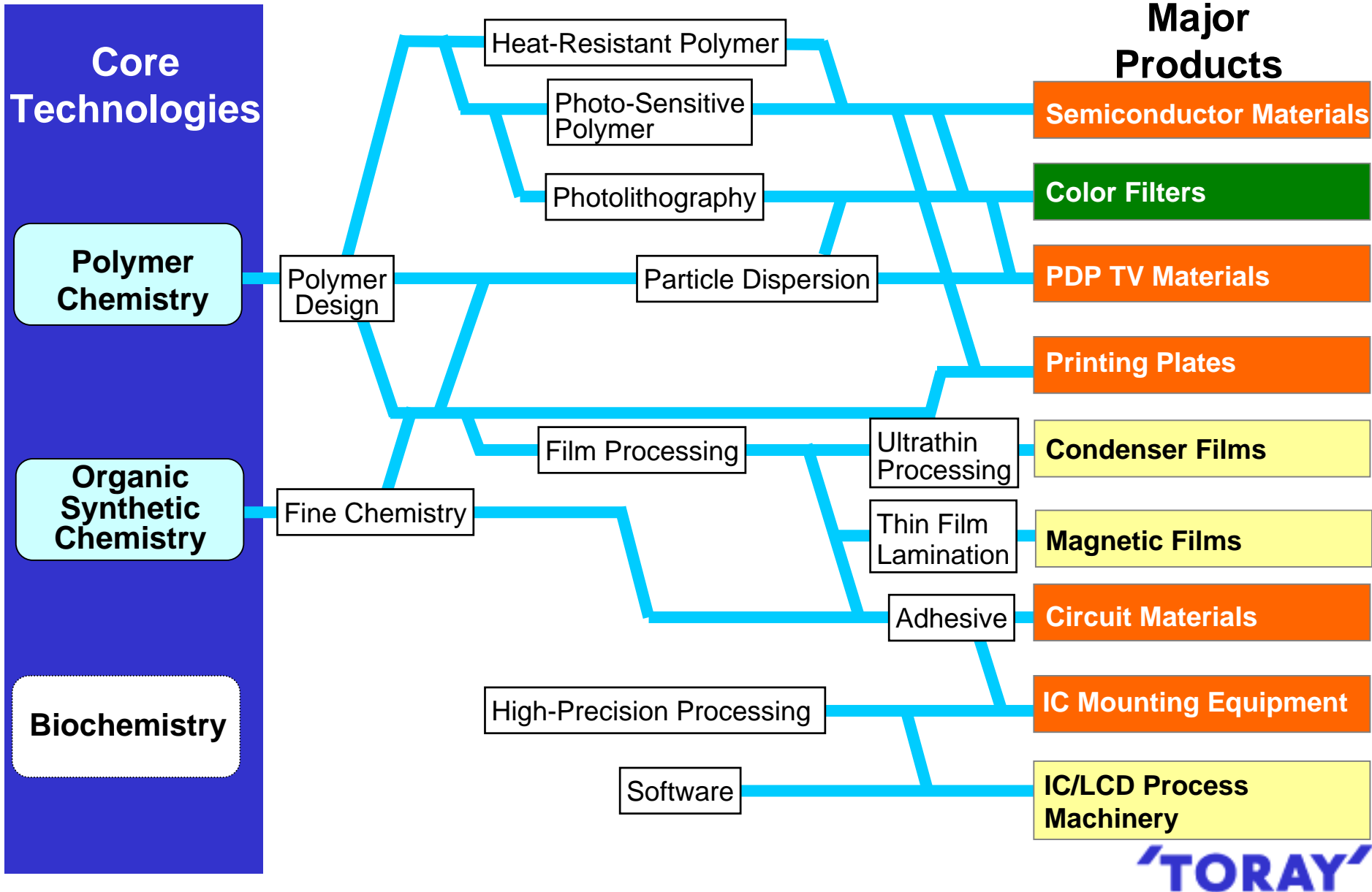
LCD Manufacturing
Machinery

Storage

Magnetic Films

Printing Plates

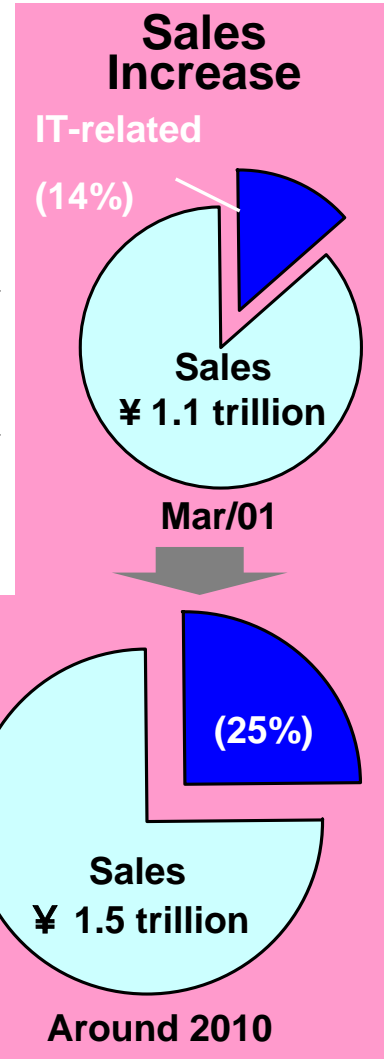
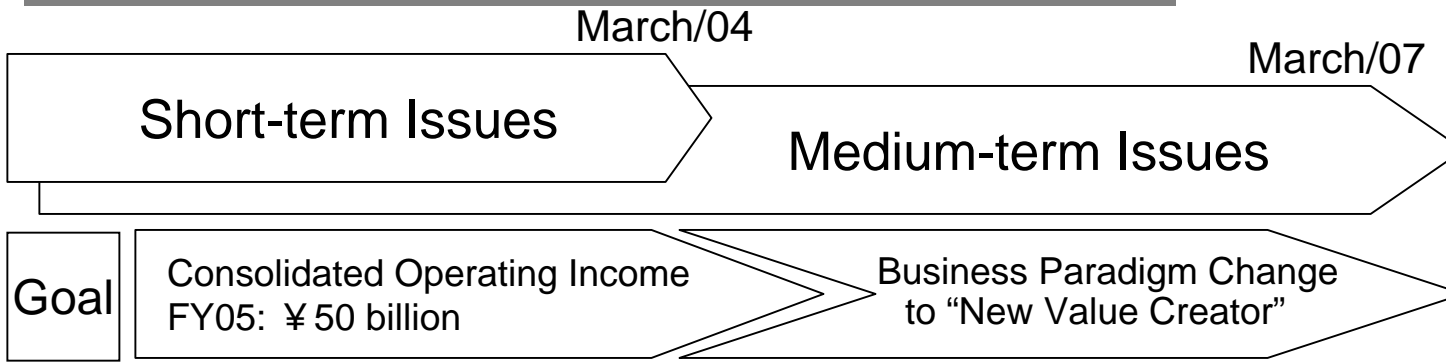
Technological Background of IT Products



“Project NT 21” - A Focus on IT

Implemented in April 2002

“Project New TORAY21”



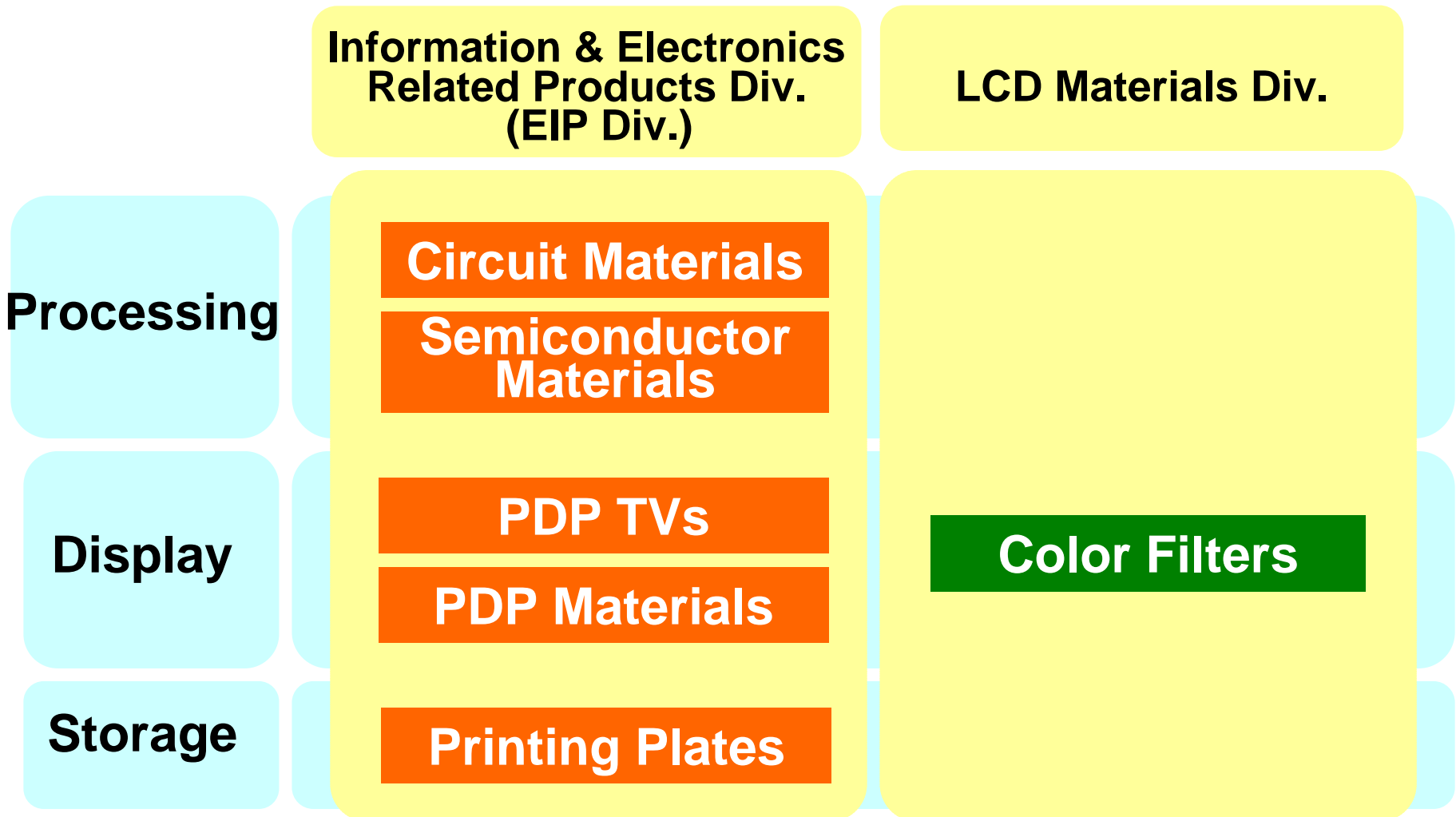
Electronics & Information,
LCD Materials

Pharmaceuticals & Medical,
Fine Chemicals, New Bios

Carbon Fibers,
Composite Materials, Water
Treatment, Amenities, etc.

Toray's IT-related Divisions

Two divisions put special emphasis on marketing IT-related products.

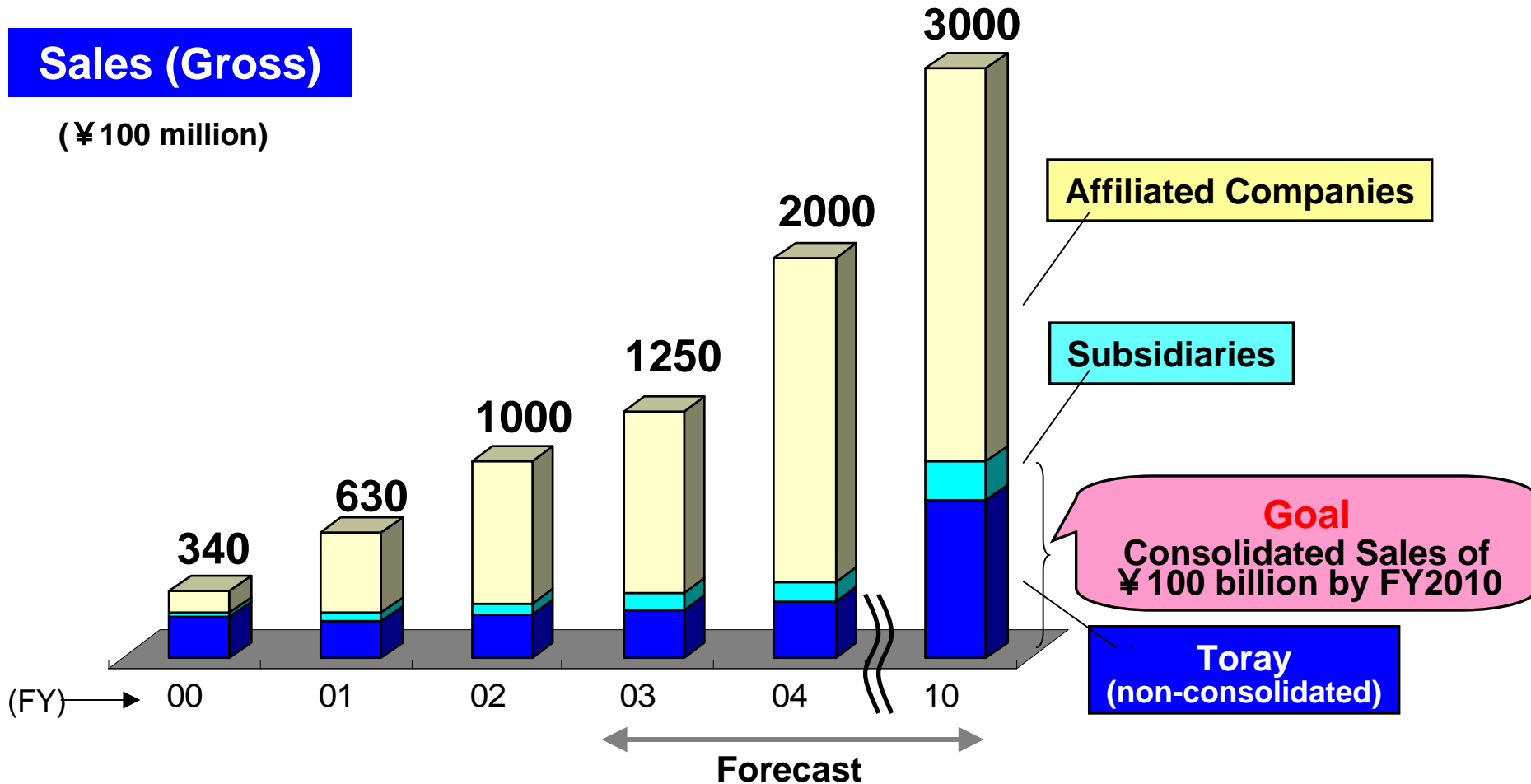


Products and Strategies of EIP Div.

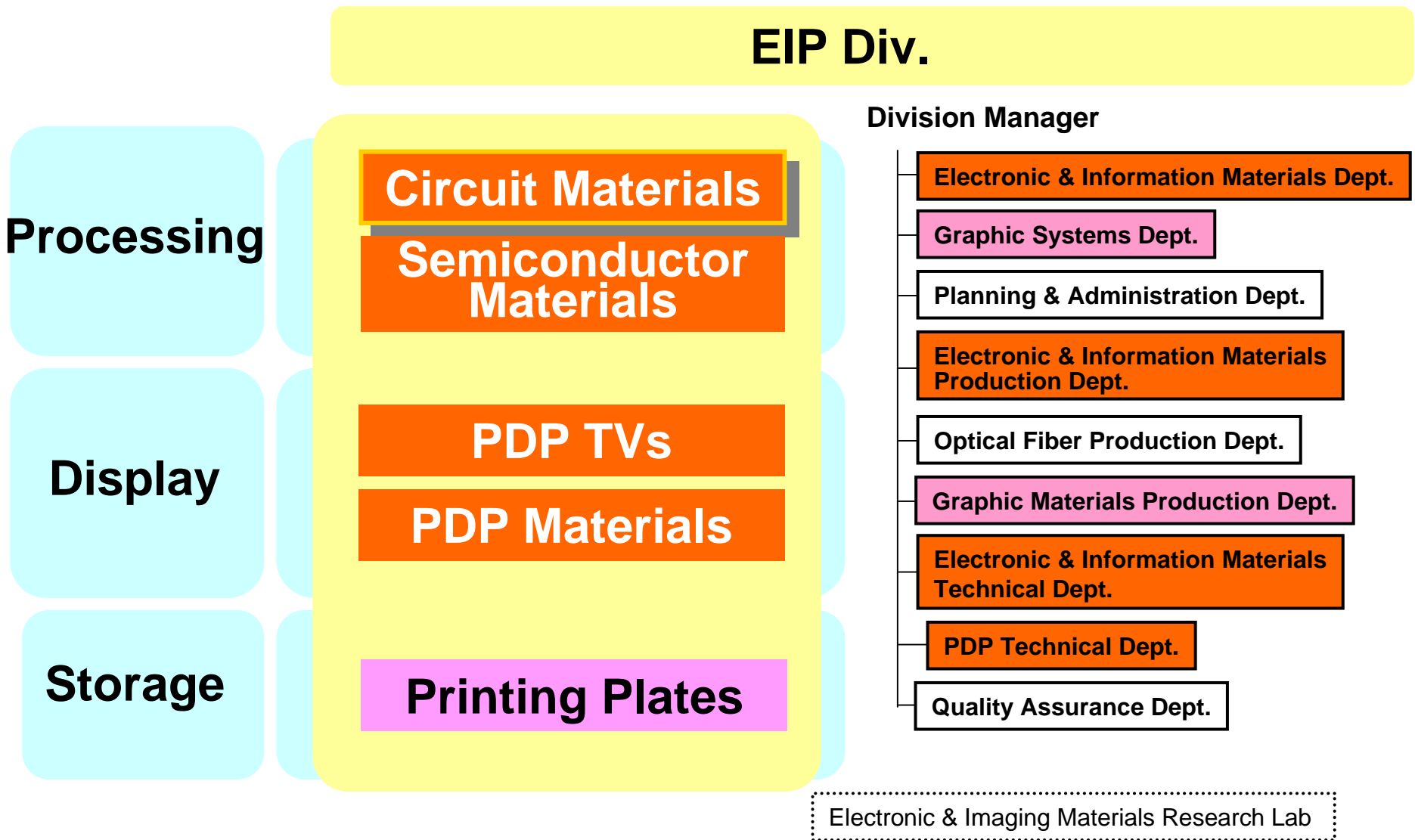
EIP Business Plan

Sales (Gross)

(¥ 100 million)

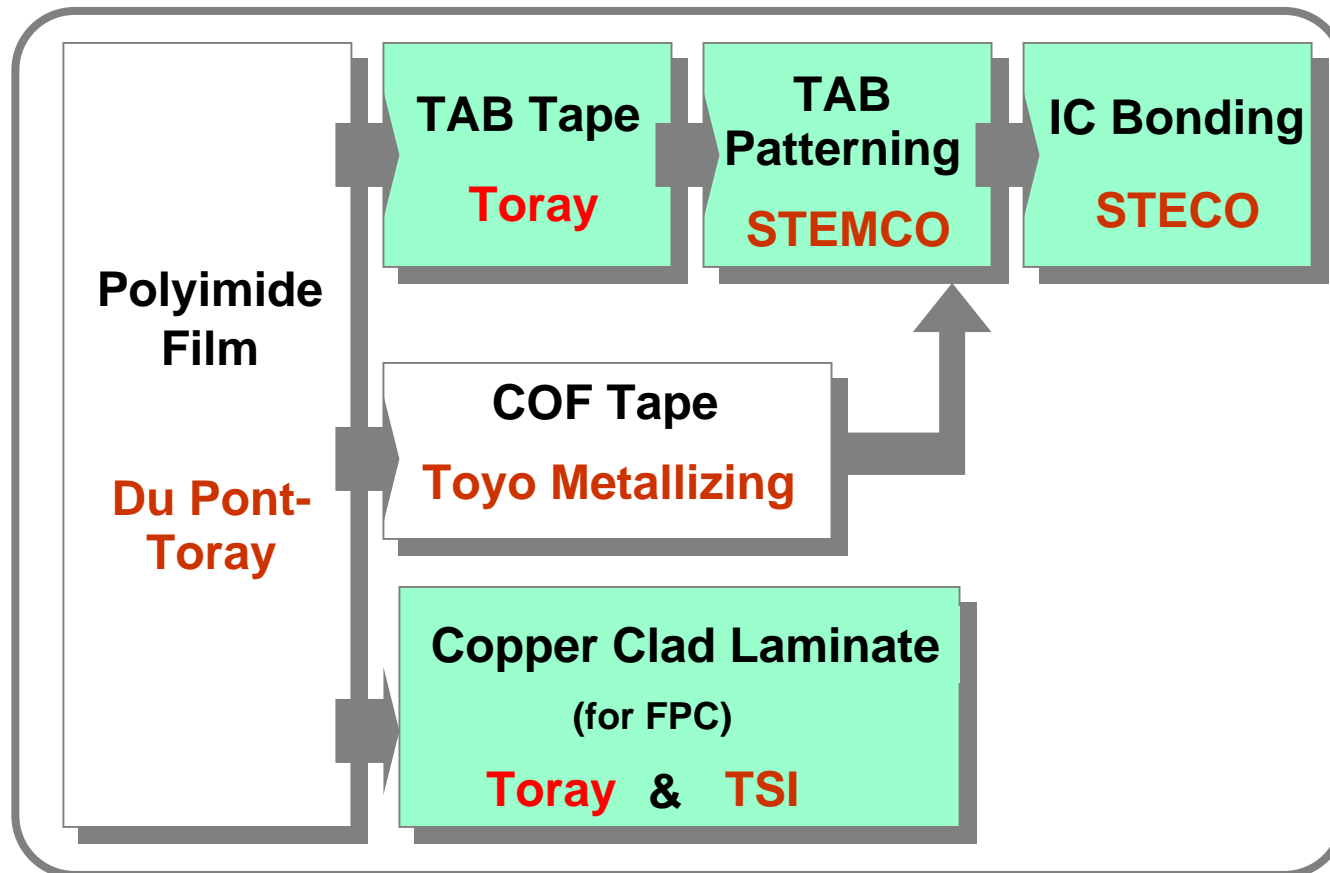


EIP Products and Organization



Circuit Materials Business

- Mainly Films and Film Processing
- Widely Used for PCs and Mobile Phones



PCs



Mobile Phones



TAB: Tape Automated Bonding

FPC: Flexible Print Circuit

COF: Chip On Flex

TORAY

LCD Driver IC Technologies

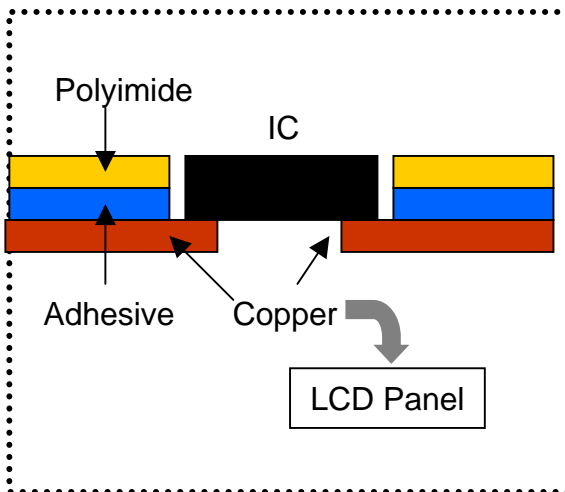
LCD Driver IC

A Key Component of LCD Panels that Drives their Screens.

TAB

Tape Automated Bonding

Three-layer Tape

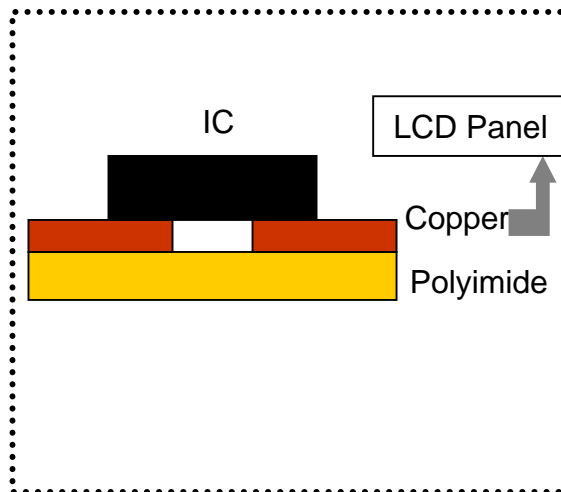


Toray Advantage
Unique Adhesive,
with High Affinity to
Film & Copper

COF

Chip On Flex

Two-layer Tape

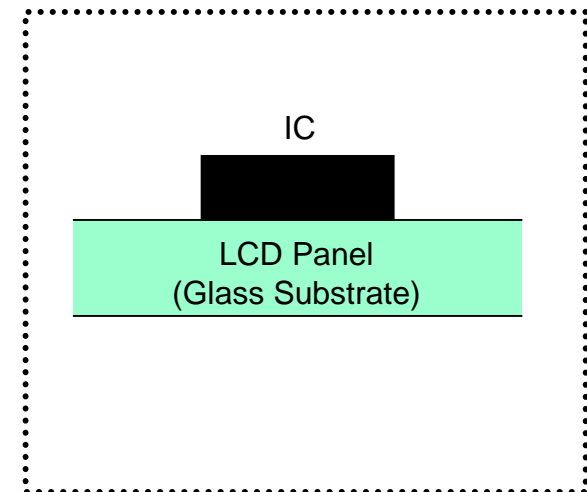


Toray Advantage
Metal Deposition and
Plating to Polyimide Film

COG

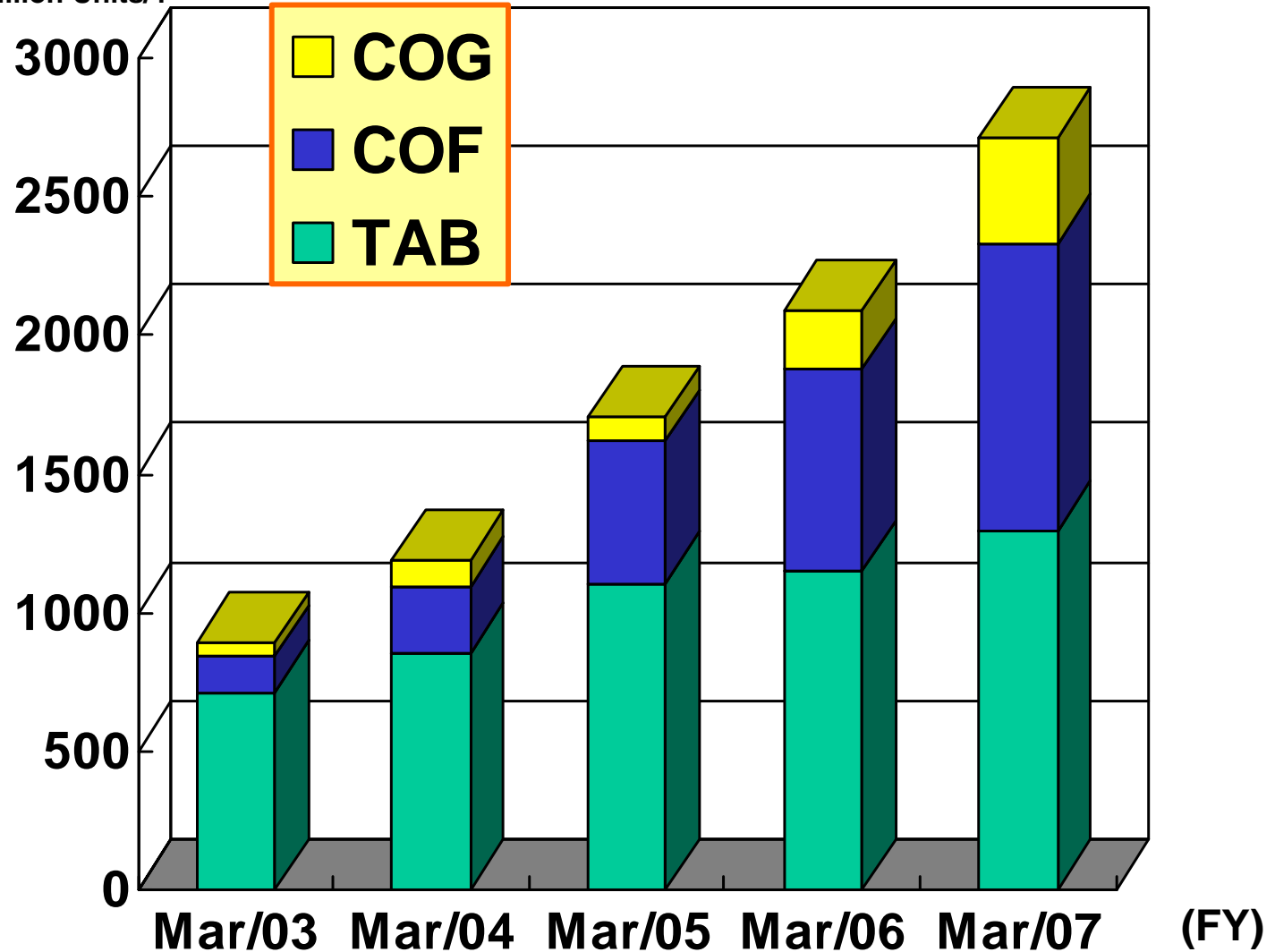
Chip On Glass

Tapeless



Trend of LCD Driver IC Technologies

W/W Production
Million Units/Y



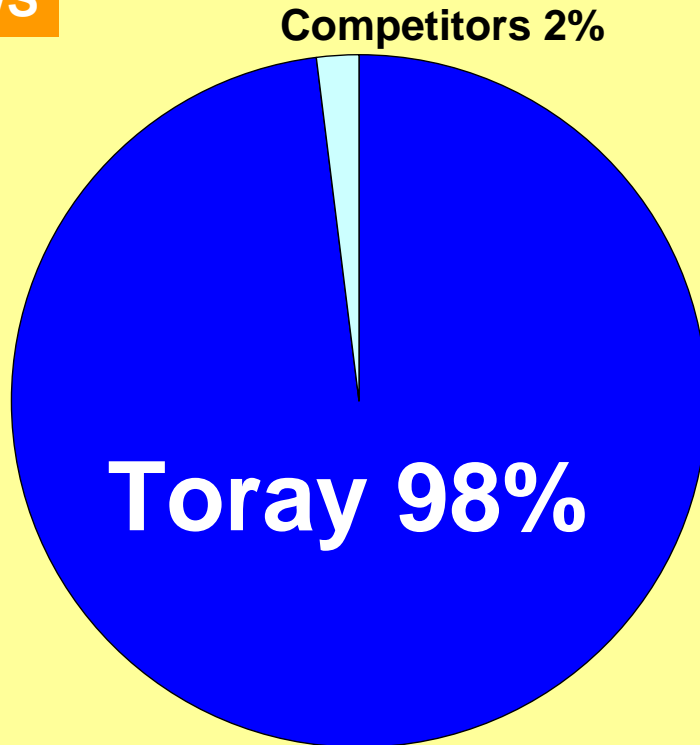
(Internal Est.)

TAB Tape Material - ICC

Toray's TAB Tape, Widely Known as ICC

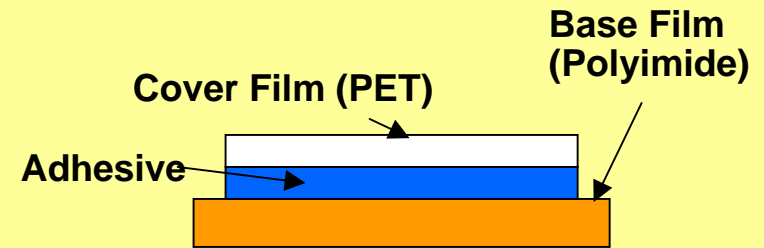
ICC: IC Chip Carrier Tape

M/S



TAB Tape (FY2002)

Product Structure



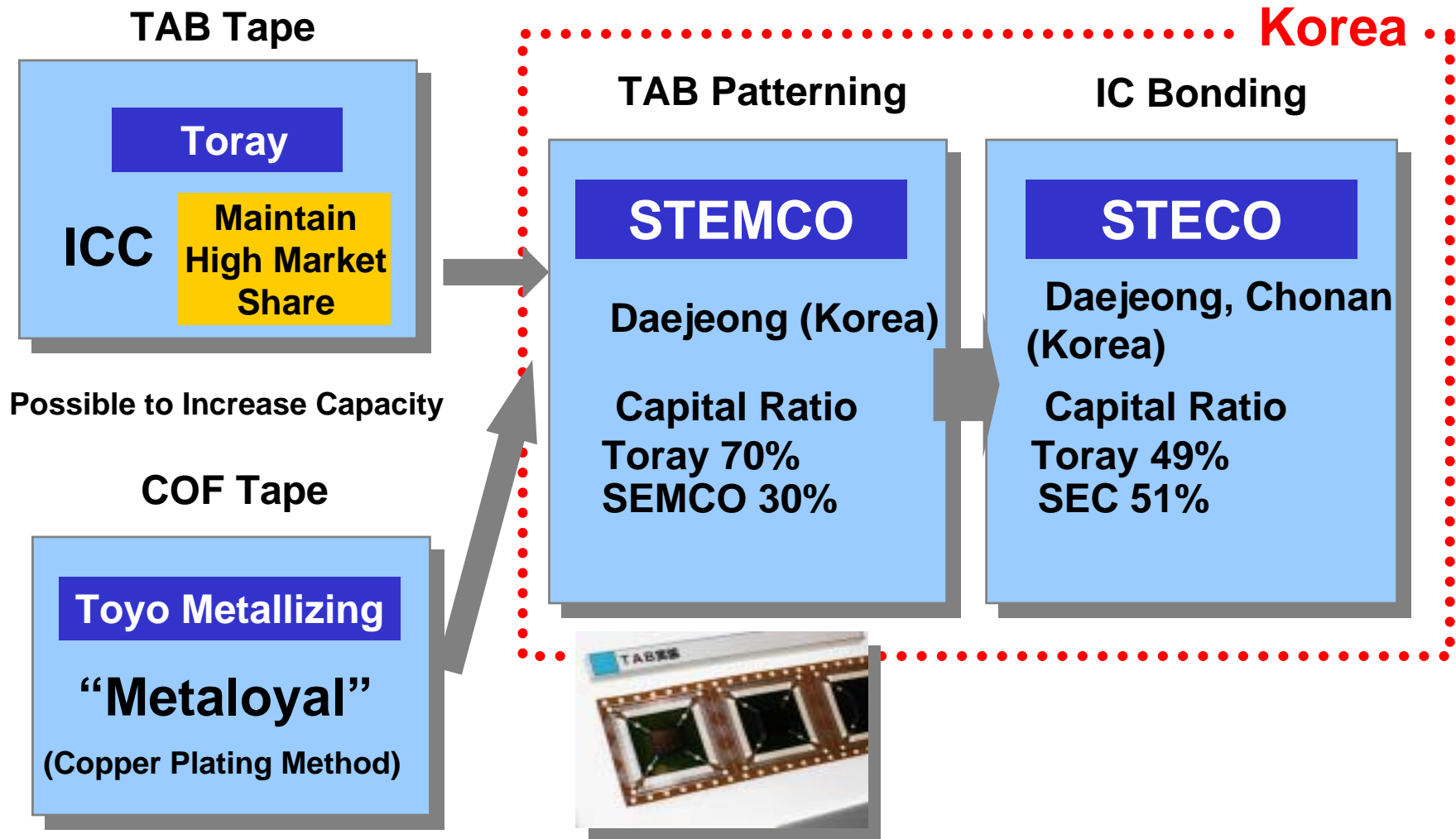
Major Characteristics

Adhesive Design Technology
Processing Technology

Production Site

Shiga (Japan)

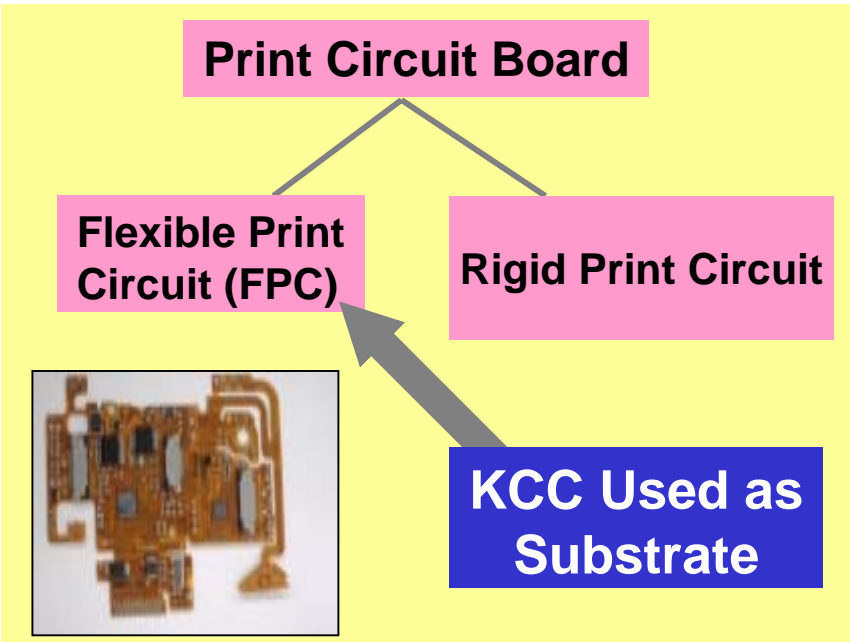
LCD Driver IC Strategy



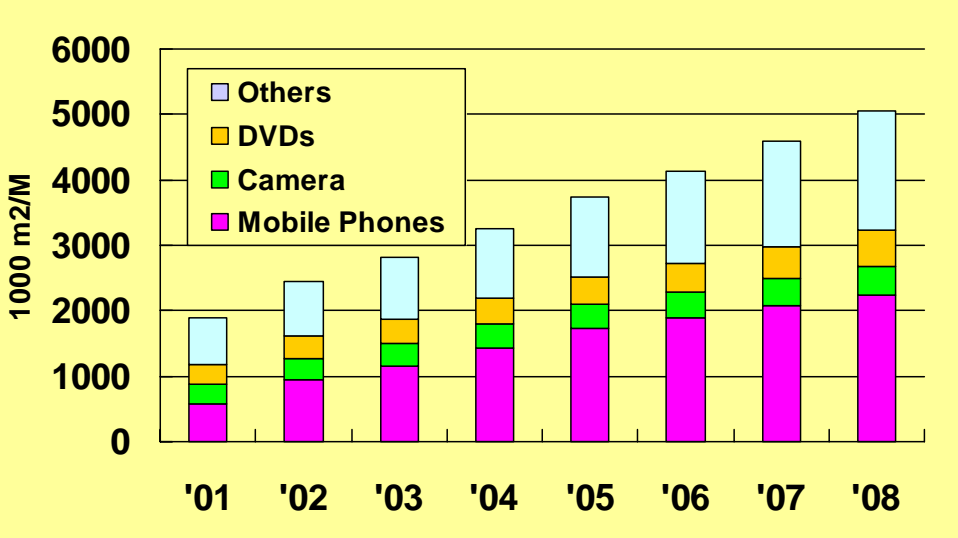
Copper Clad Laminate for FPC - KCC

Toray's CCL, Widely Known as KCC

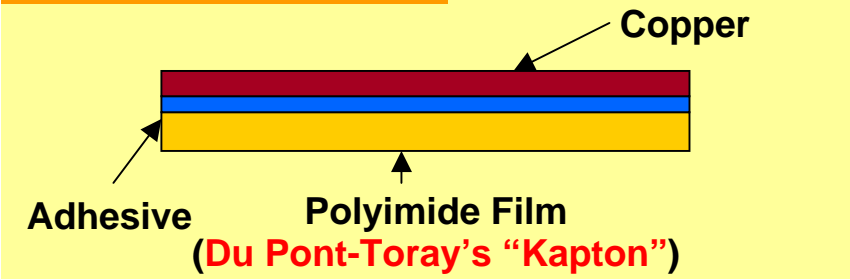
KCC: Kapton Copper Clad



Market Growth - Mobile Phones Lead Growth - Expected CAGR around 10%



Product Structure (Single-Sided CCL)



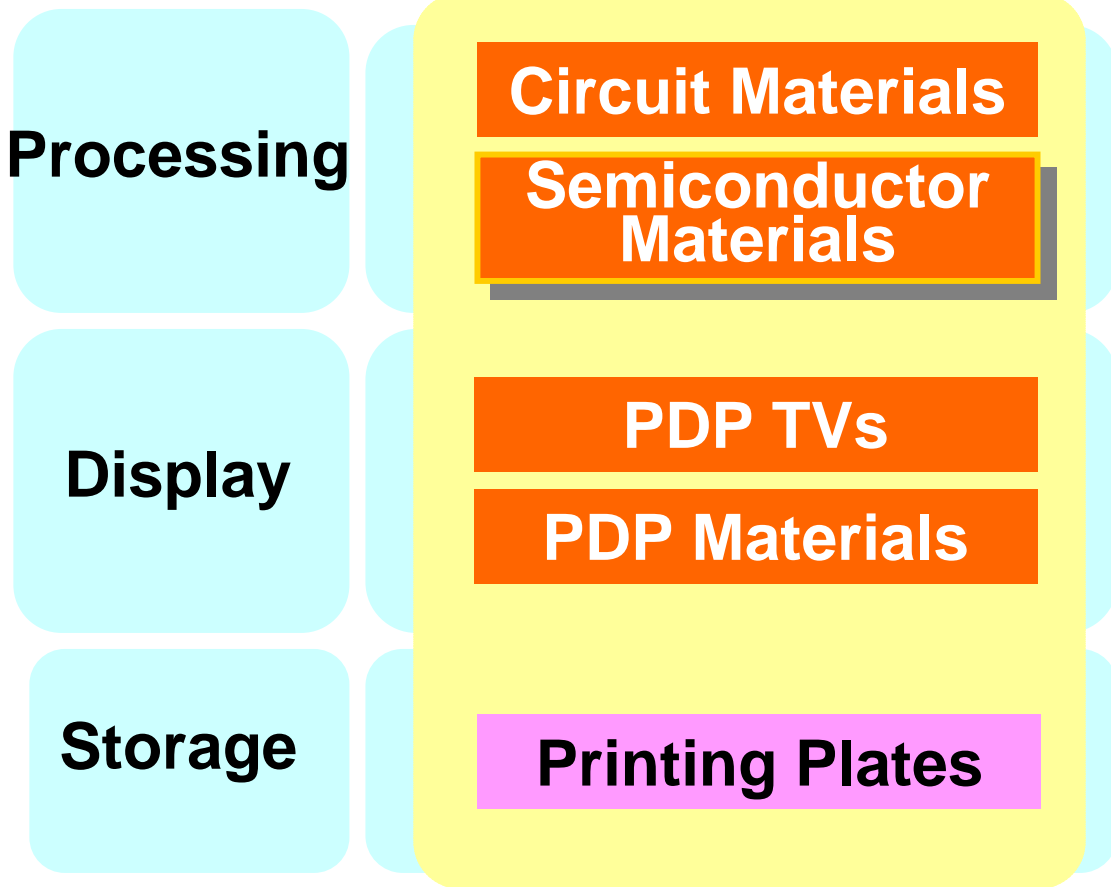
Production Sites

- Shiga (Japan) (also R&D)
- Gumi (Korea) (Operated by Toray Saehan)

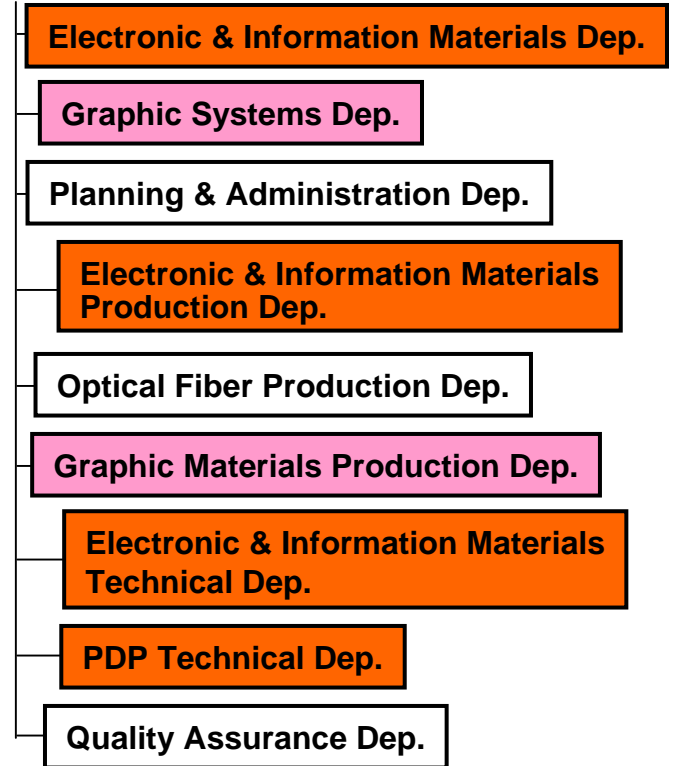


Semiconductor Materials Business

EIP Div.



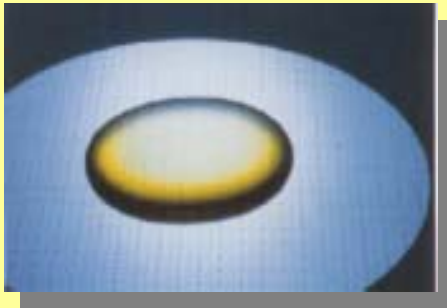
Division Manager



Electronic & Imaging Materials Research Lab.

Product Line

Polyimide Coatings
〔 Passivating Coat
Interlayer Insulation 〕



Non-photosensitive

“Semicofine”

Photosensitive (Negative)

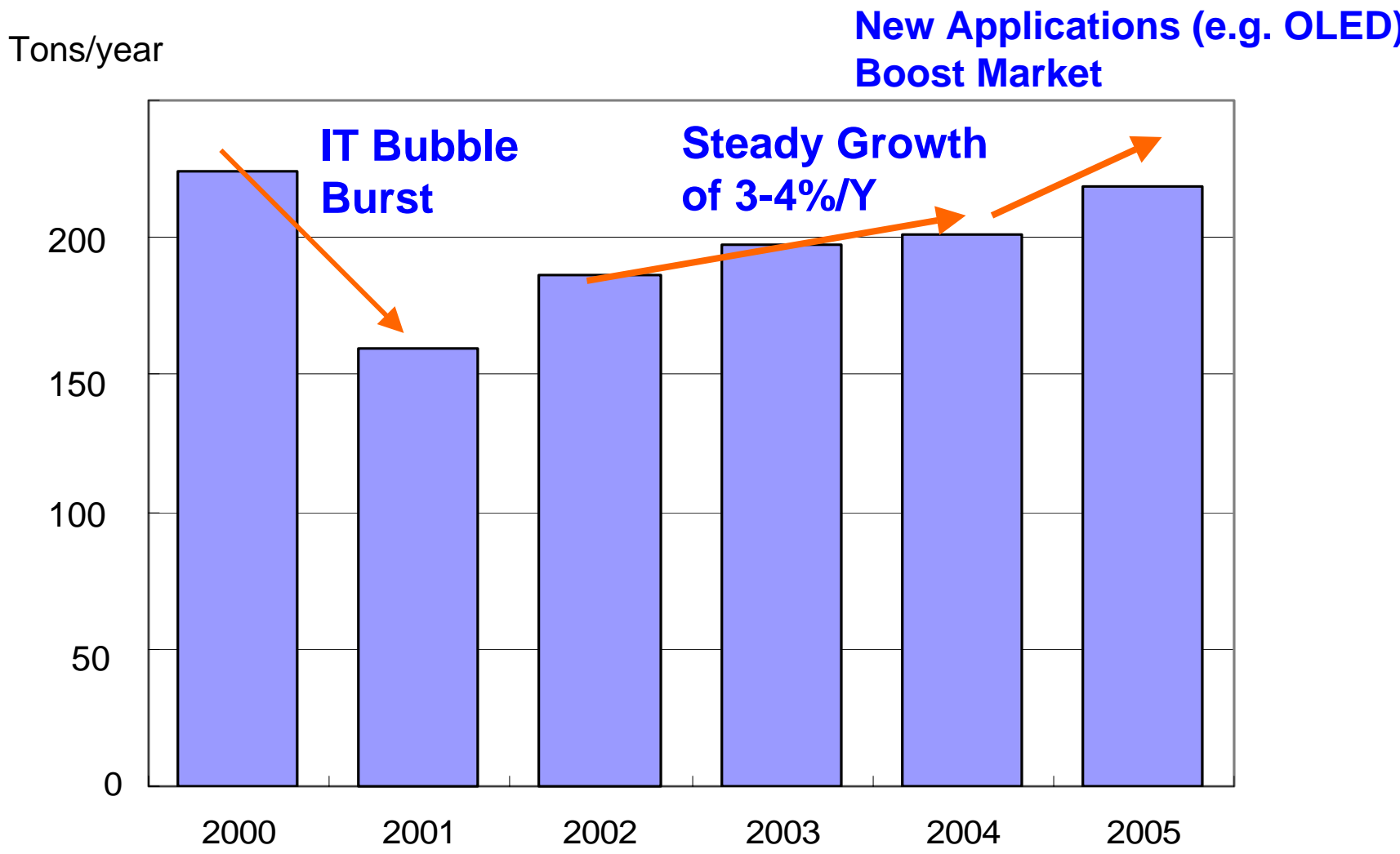
“Photoneece”

Photosensitive (Positive)

“Photoneece”

Production site Shiga (Japan)

Coating Materials Market



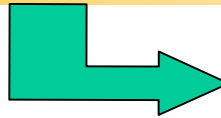
Technological Development

Used as Passivating Coat, Interlayer Insulator

Technological Trend

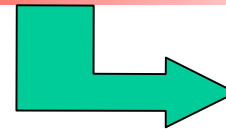
Non-photosensitive Polyimide

Process Efficiency



Photosensitive Polyimide (Negative)

Environmental Friendliness, Reduced Cost



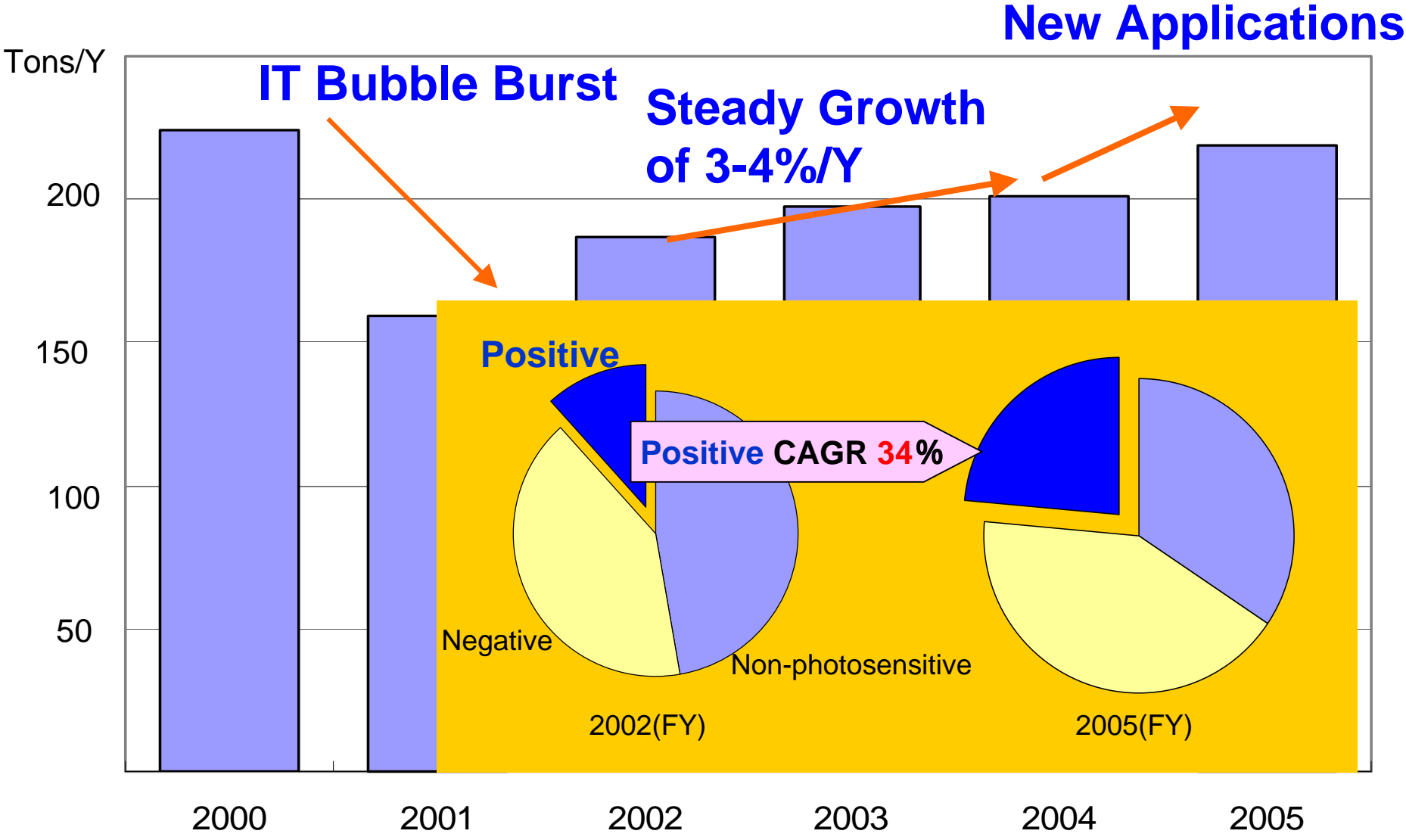
Photosensitive (Positive)

1980

1990

2000

Increasing Positive-type Demand



Semiconductor Materials Area Strategy

Build Strong Partnership with Dow Corning

➔ **Increase Market Share in Expanding Positive-type Market**

Market High-Density IC Packages Boost Demand for Positive-type Coatings.

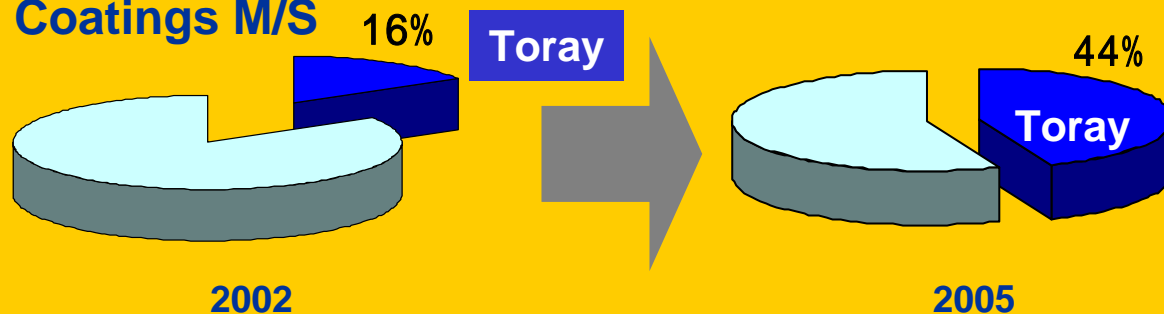
**Toray's
Technology**

Toray Has an Extensive Record in Polymer Design.
(First Commercialized Positive Polyimide in the World)

**Global
Partnership**

Dow Corning Markets Toray Products in North America & Europe.
(Toray and Dow Corning Also Collaborate in Operations in Asia)

Positive Coatings M/S



PDP-related Products Business

EIP Div.

Processing

Circuit Materials

Semiconductor
Materials

Display

PDP TVs

PDP Materials

Storage

Printing Plates

Division Manager

Electronic & Information Materials Dept.

Graphic Systems Dept

Planning & Administration Dept.

Electronic & Information Materials
Production Dept.

Optical Fiber Production Dept.

Graphic Materials Production Dept.

Electronic & Information Materials
Technical Dept.

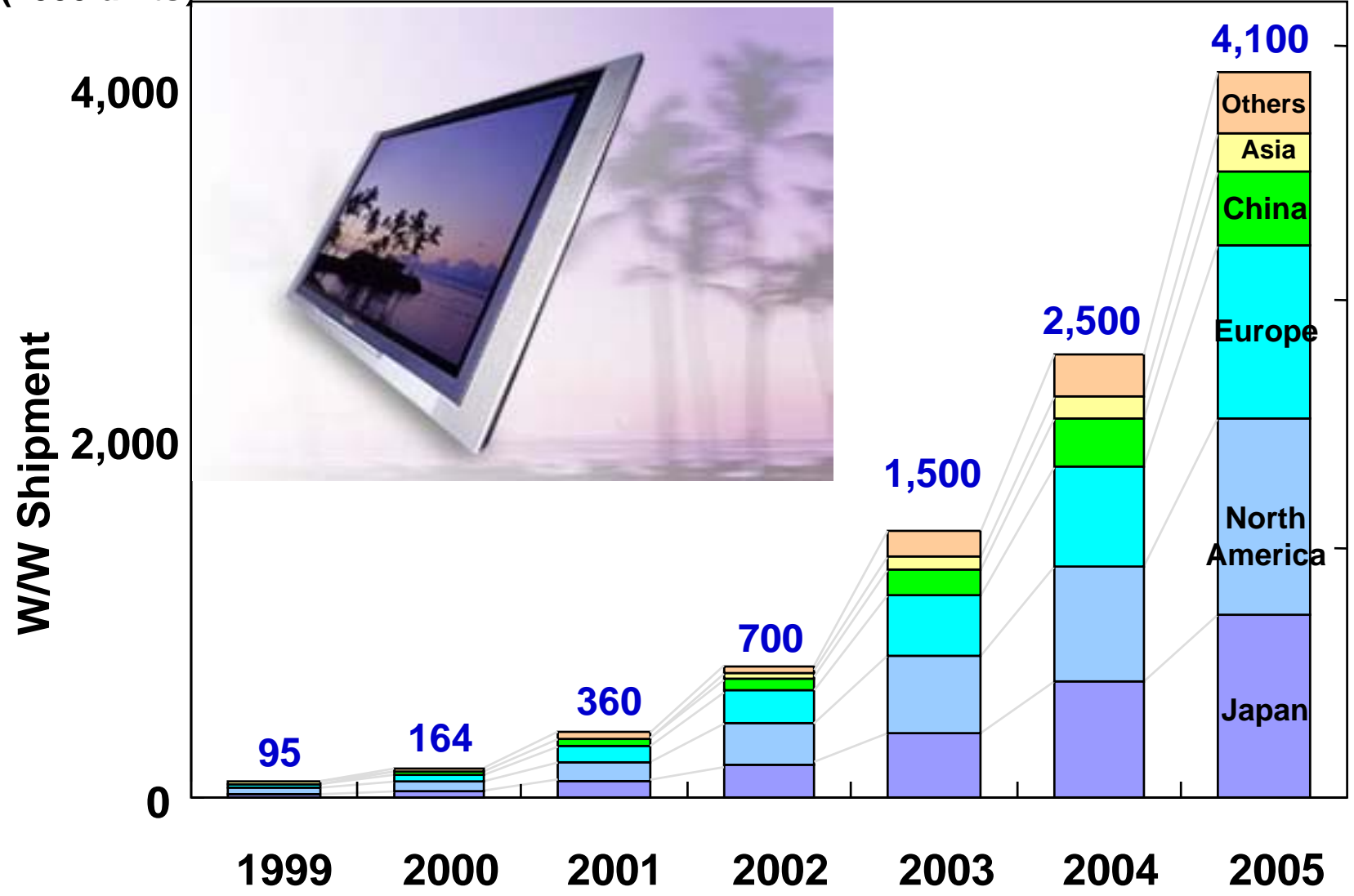
PDP Technical Dept.

Quality Assurance Dept.

Electronic & Imaging Materials Research Lab.

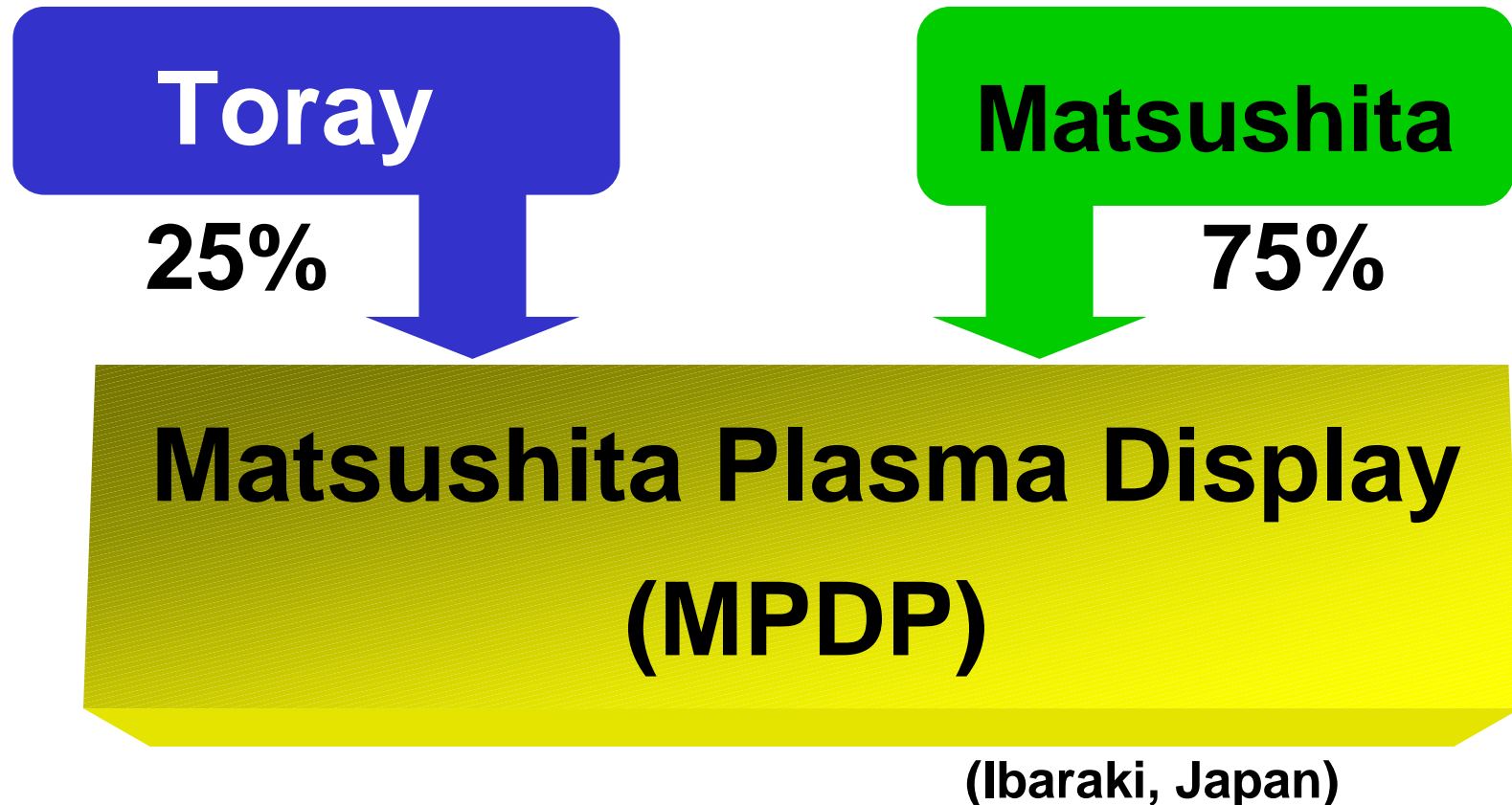
Thriving PDP TV Market

(1000 units)

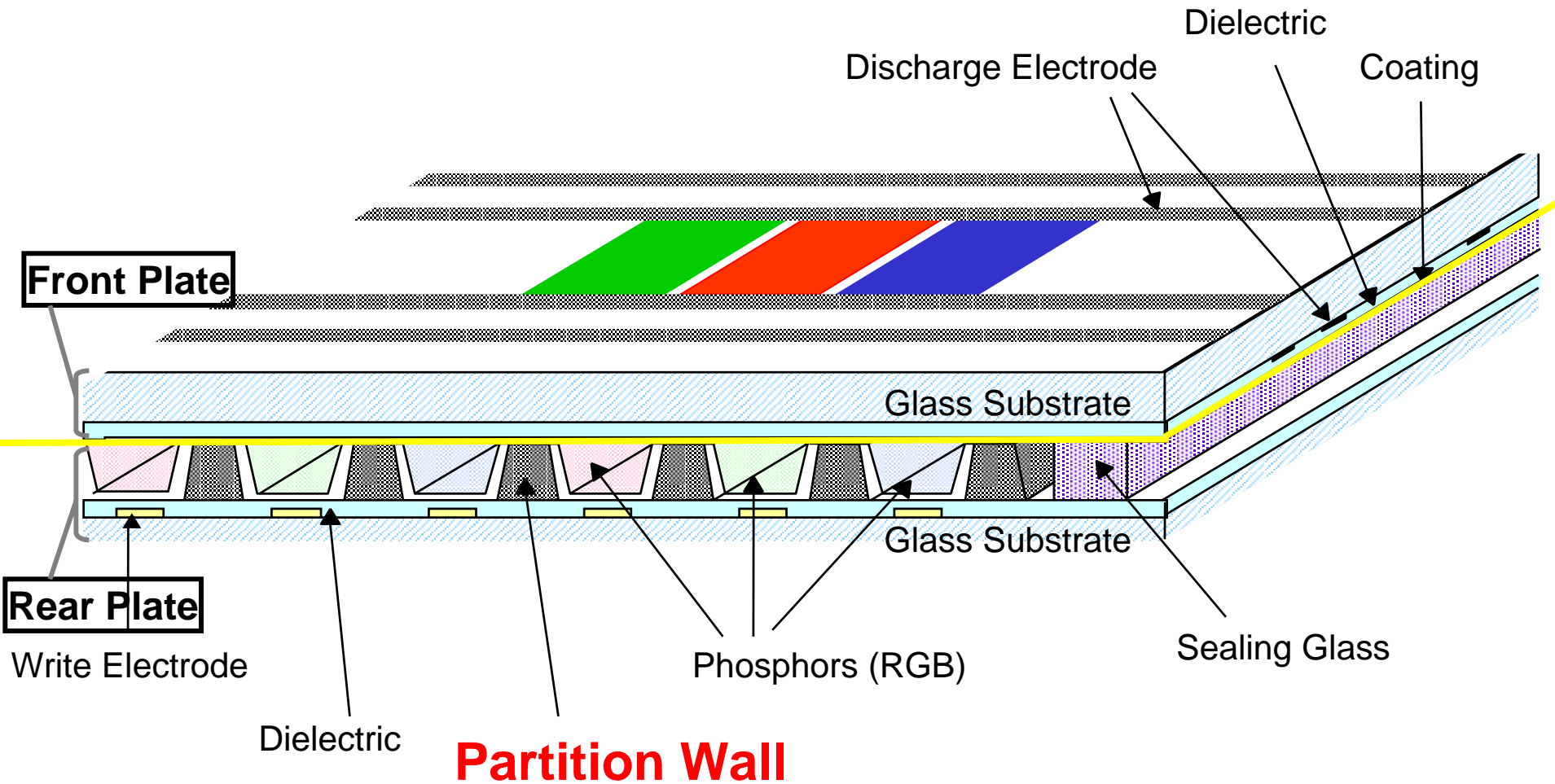


Toray-Matsushita PDP Partnership

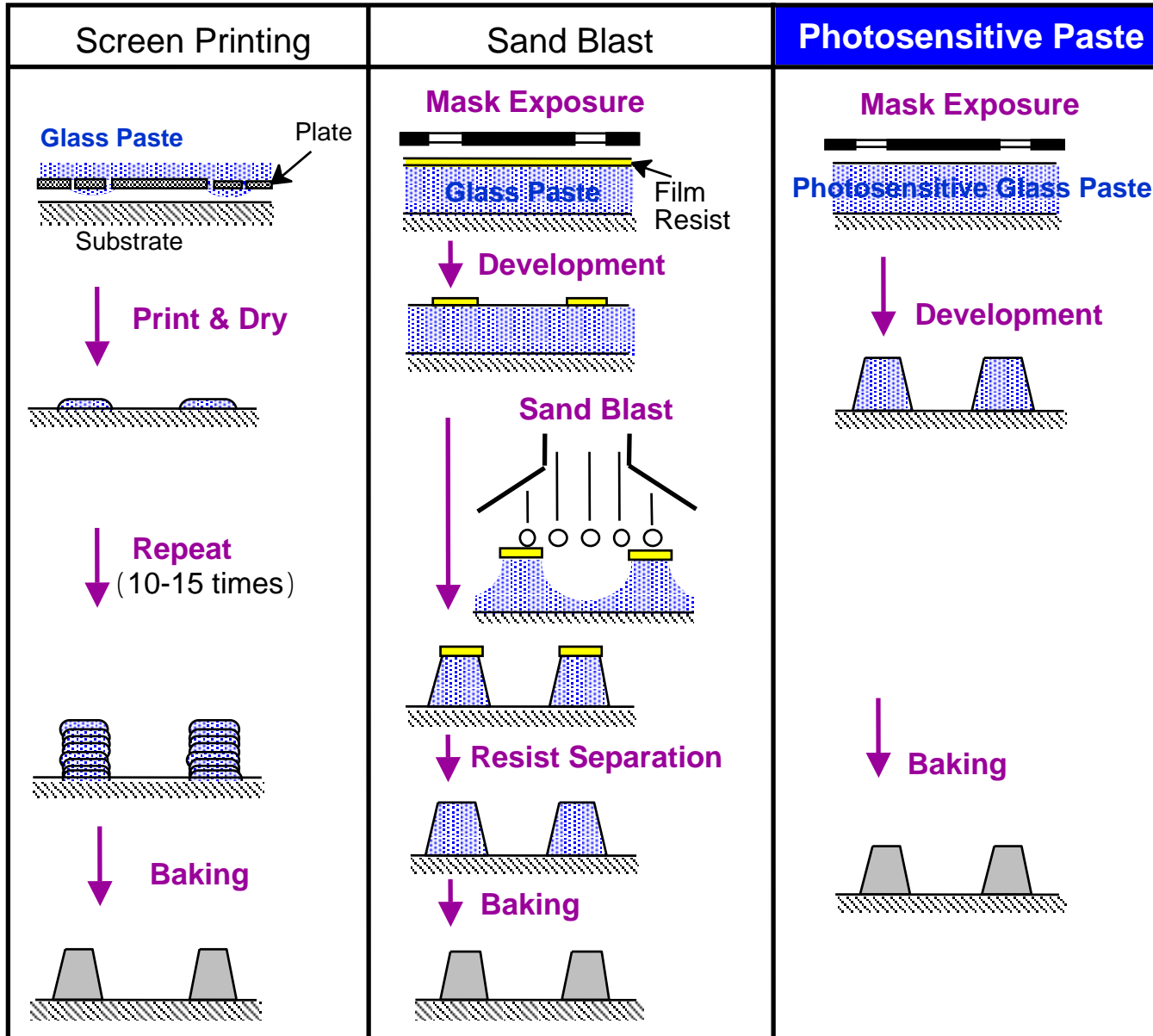
Partnership Framework



PDP Panel Structure



Wall Formation Technologies



Toray's Advantages

Highly Precise Processing

Conformity to Various Shapes

High Productivity

Printing Plate Business

EIP Div.

Processing

Circuit Materials

Semiconductor
Materials

Display

PDP TVs

PDP Materials

Storage

Printing Plates

Division Manager

Electronic & Information Materials Dept.

Graphic Systems Dept.

Planning & Administration Dept.

Electronic & Information Materials
Production Dept.

Optical Fiber Production Dept.

Graphic Materials Production Dept.






Electronic & Information Materials
Technical Dept.

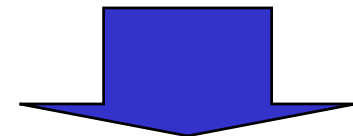
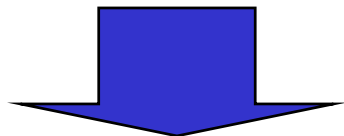
PDP Technical Dept.

Quality Assurance Dept.

Electronic & Imaging Materials Research Lab.

Printing Method Types

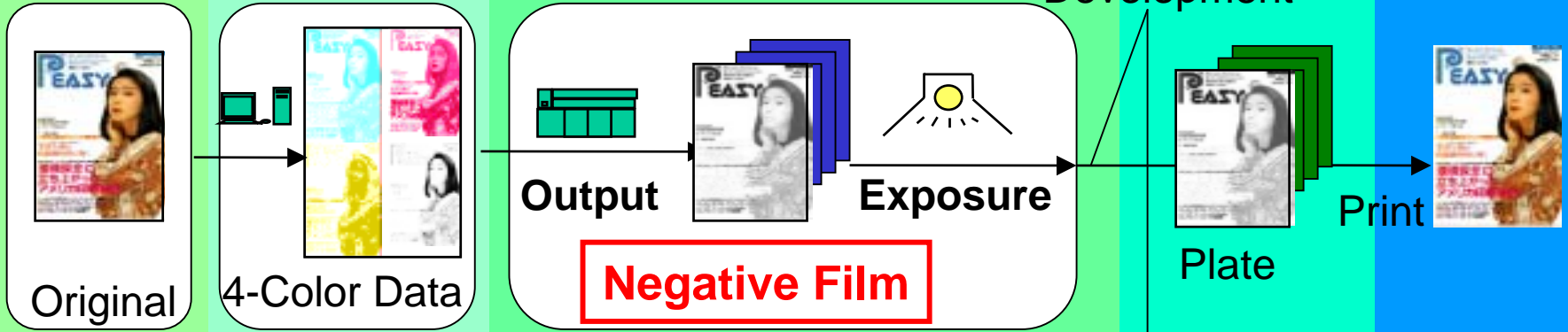
Method	Planographic	Relief
Plate	Planographic Plate (With- or Without- Water)	Flexo Plate / Resin Plate
Market Size	¥ 275 billion (W/W, CY2002)	¥ 55 billion (W/W, CY2002)
Applications	Catalogs, Posters, Calendars   	Labels Plastic Containers  



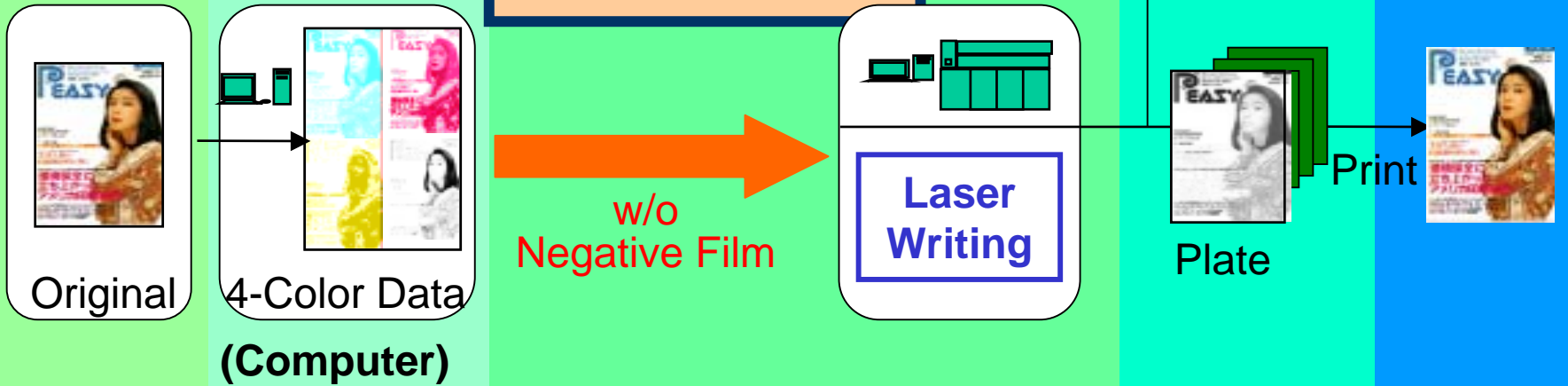
TORAY Products	Toray Waterless Plate	“Torayflex” “Torelief”
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What is Computer-to-Plate (CTP)?

Analog Process



CTP Process



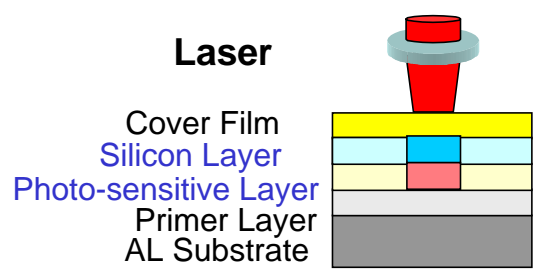
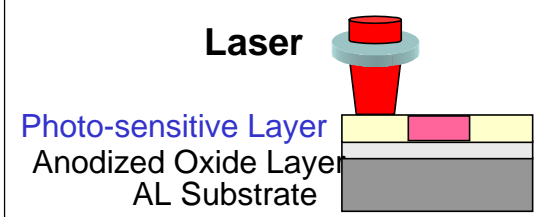
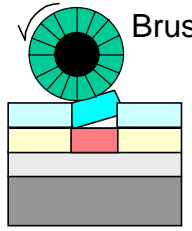
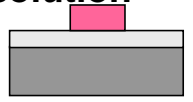
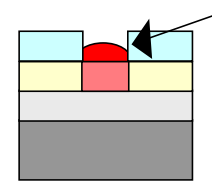
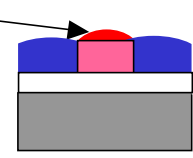
- Digitalization
- Laser Technology

Lower Cost, Quicker Delivery



Toray's CTP Plate Originality

Toray's Waterless CTP Plate Features Unique Silicon Layer Technology.

	Waterless CTP Plate	Other CTP Plates
Imaging	<p>Laser</p>  <p>Cover Film Silicon Layer Photo-sensitive Layer Primer Layer AL Substrate</p> <p>Thermal Peel</p>	<p>Laser</p>  <p>Photo-sensitive Layer Anodized Oxide Layer AL Substrate</p> <p>Thermal Decomposition</p>
Development	 <p>Brush</p> <p>Physical Peel with Water</p> <p>No Waste Liquid</p>	<p>Chemical Dissolution</p>  <p>Waste Liquid</p>
Printing	<p>Requires Special Equipment and Ink</p>  <p>Ink</p> <p>No Waste Liquid</p>	 <p>Ink</p> <p>Waste Liquid</p>
Manufacturer	Toray	Competitors

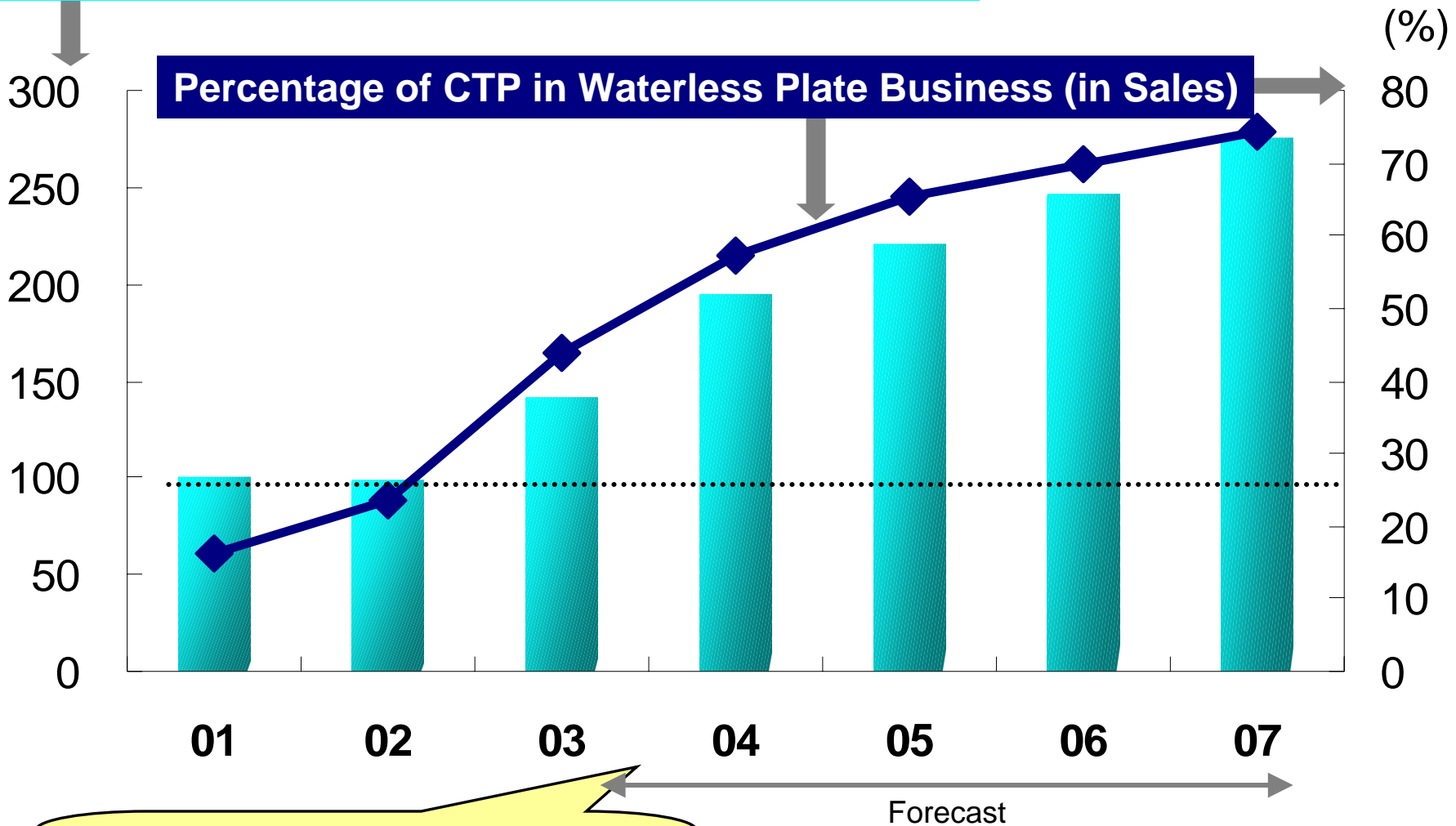


Environmentally Friendly



Expansion Plan for Waterless CTP Plate

Growth of Waterless Plate Sales (FY2001=100)



Percentage of CTP in Waterless Plate Business (in Sales)

Exclusive Line for CTP Plate Starts up in Okazaki (Japan)

Products and Strategies of LCD Materials Div.

What is Color Filter?

Used in

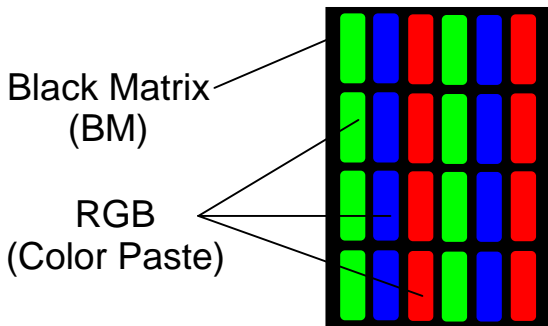
**PCs,
Mobile Phones,
LCD TVs,
etc.**



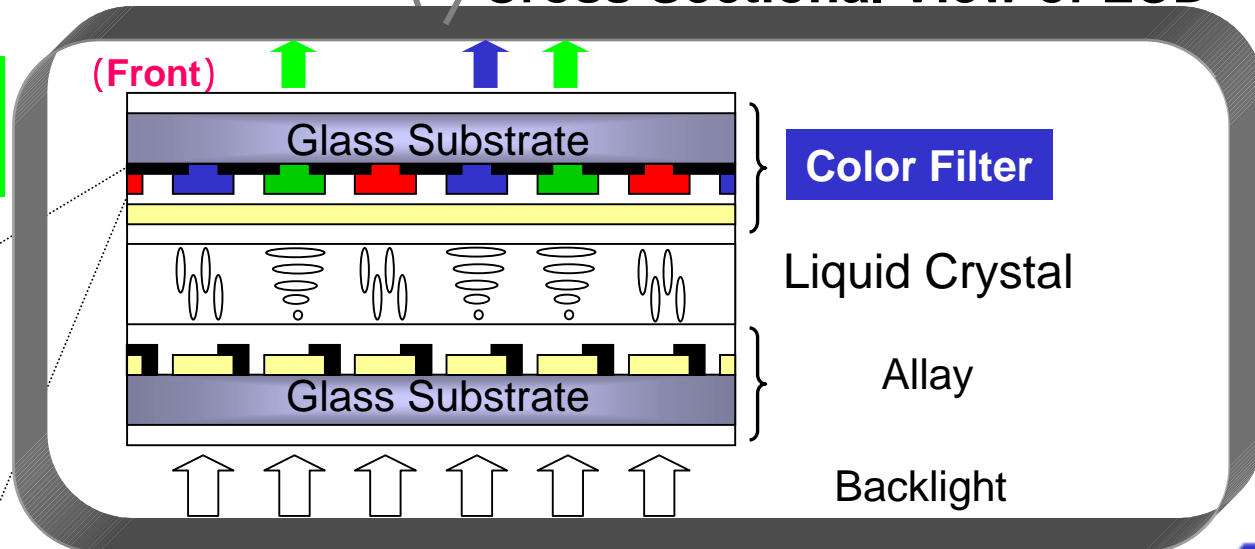
Used as

**A Critical Component
of LCD Panel**

LCD: Liquid Crystal Display



Cross Sectional View of LCD



TFT: Thin Film Transistor

LCD Industry Supply Chain

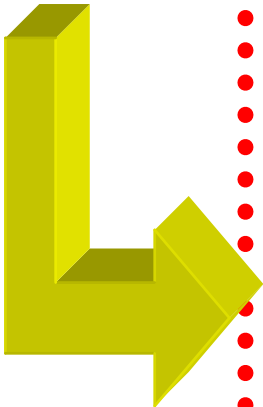


**Material
Manufacturers**
**Equipment
Suppliers**

LCD Manufacturers
Allay → Cell → Module

**Mobile Phone
Manufacturers**

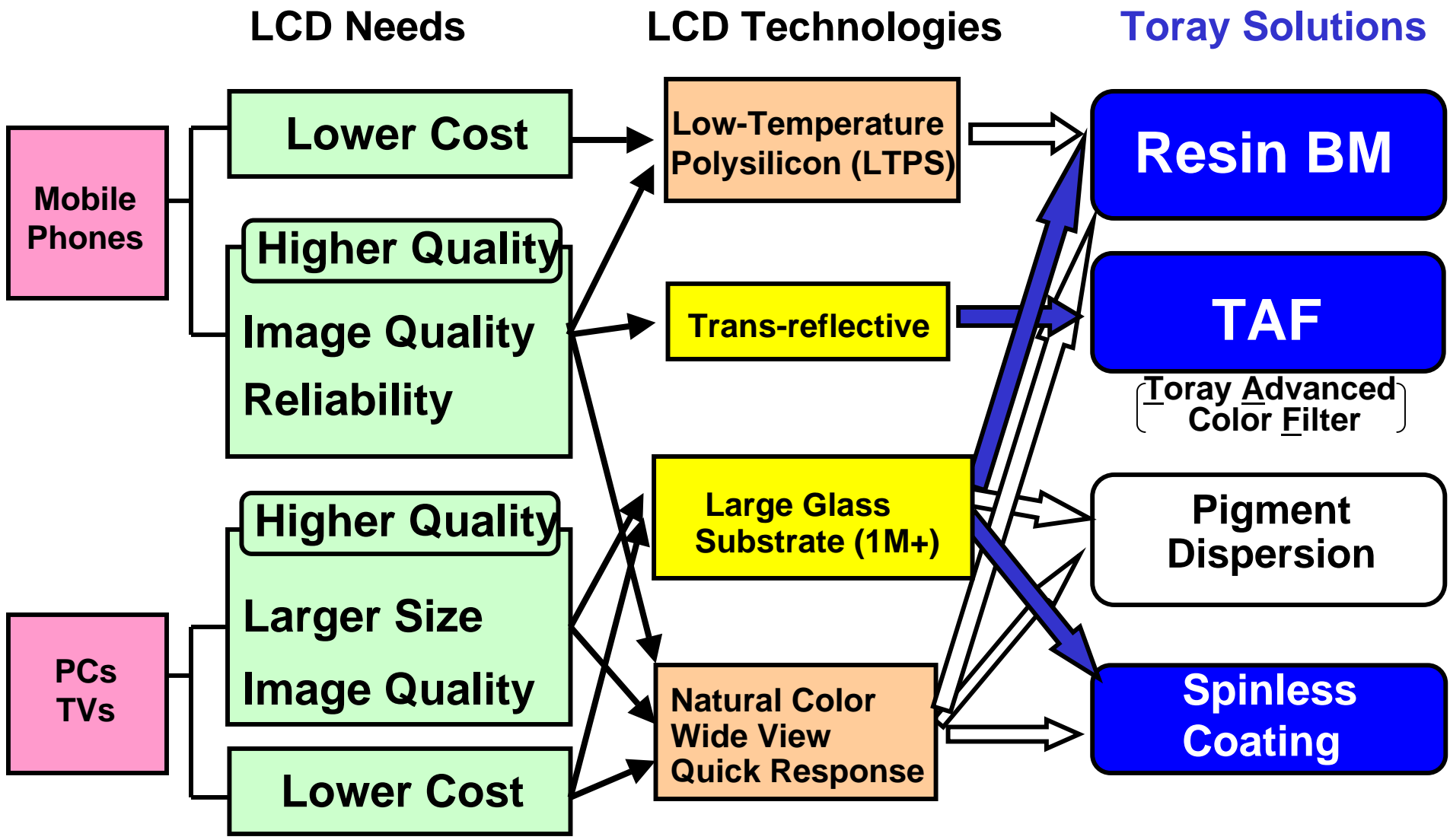
**PC
Manufacturers**



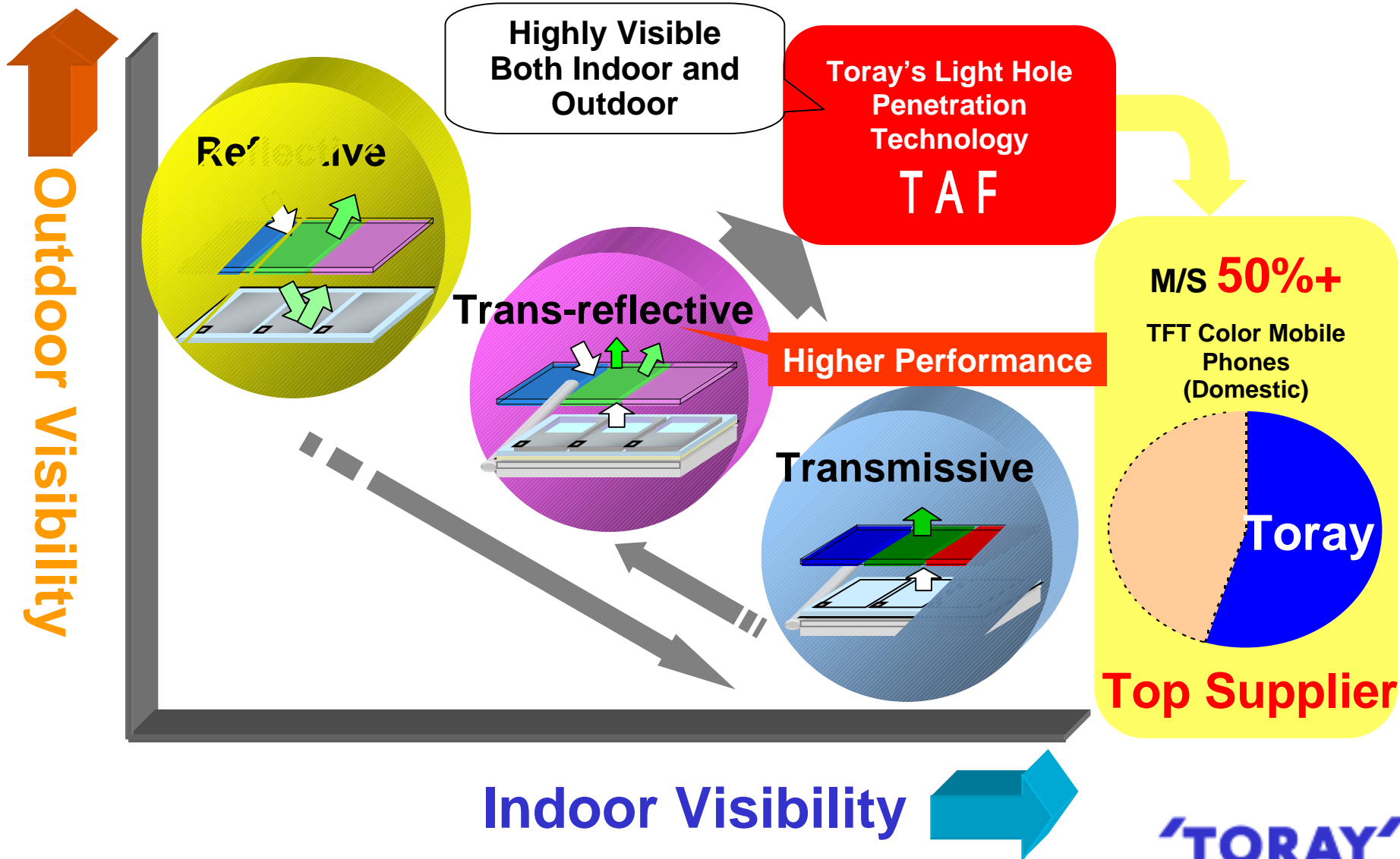
**Color Filter
Manufacturers**

**More LCD Manufacturers to
Expand In-house Color
Filter Capacity**

Toray's LCD Manufacturing Solutions



TAF Enhances Mobile Phone Technology



Outdoor Visibility

Indoor Visibility

M/S 50%+

TFT Color Mobile Phones (Domestic)

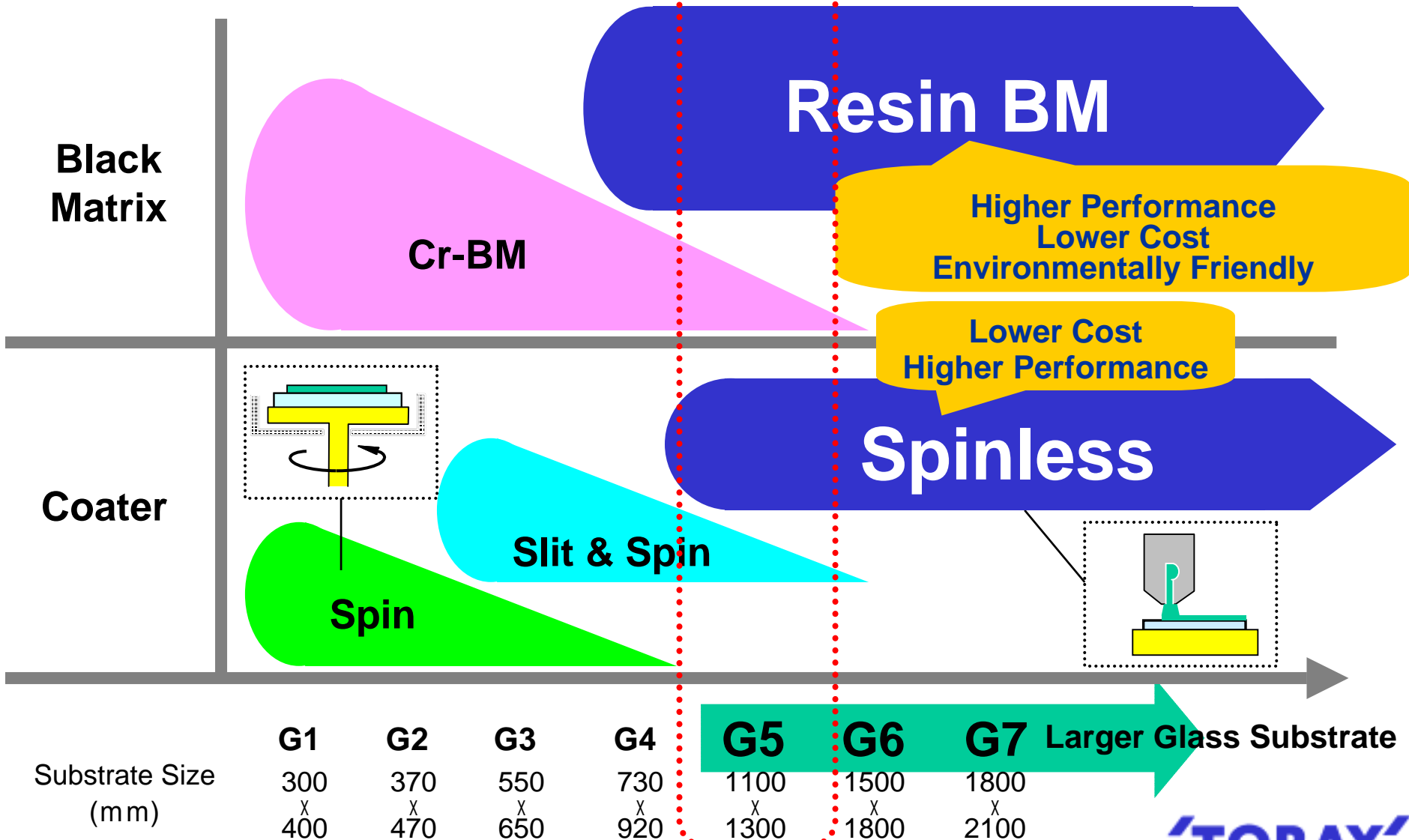
Toray

Top Supplier

TORAY

Toray Contributes to G5+ LCDs

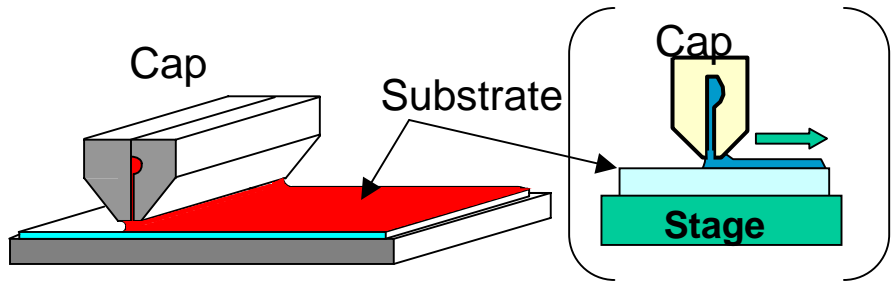
Current Investment Zone



Toray Spinless Coating Technology

Toray Method

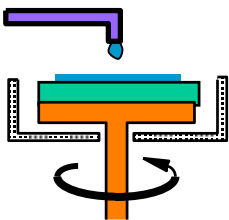
< Spinless (Slit) >



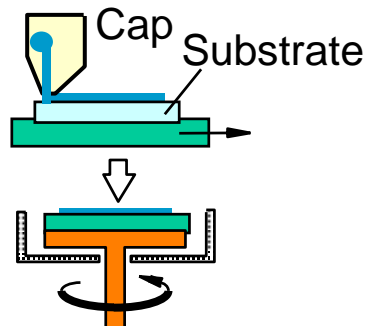
Competitors

< Spin >

Nozzle



< Slit & Spin >



Toray's Superiority

Past Record

Evenness

Short Tact

High Investment Efficiency

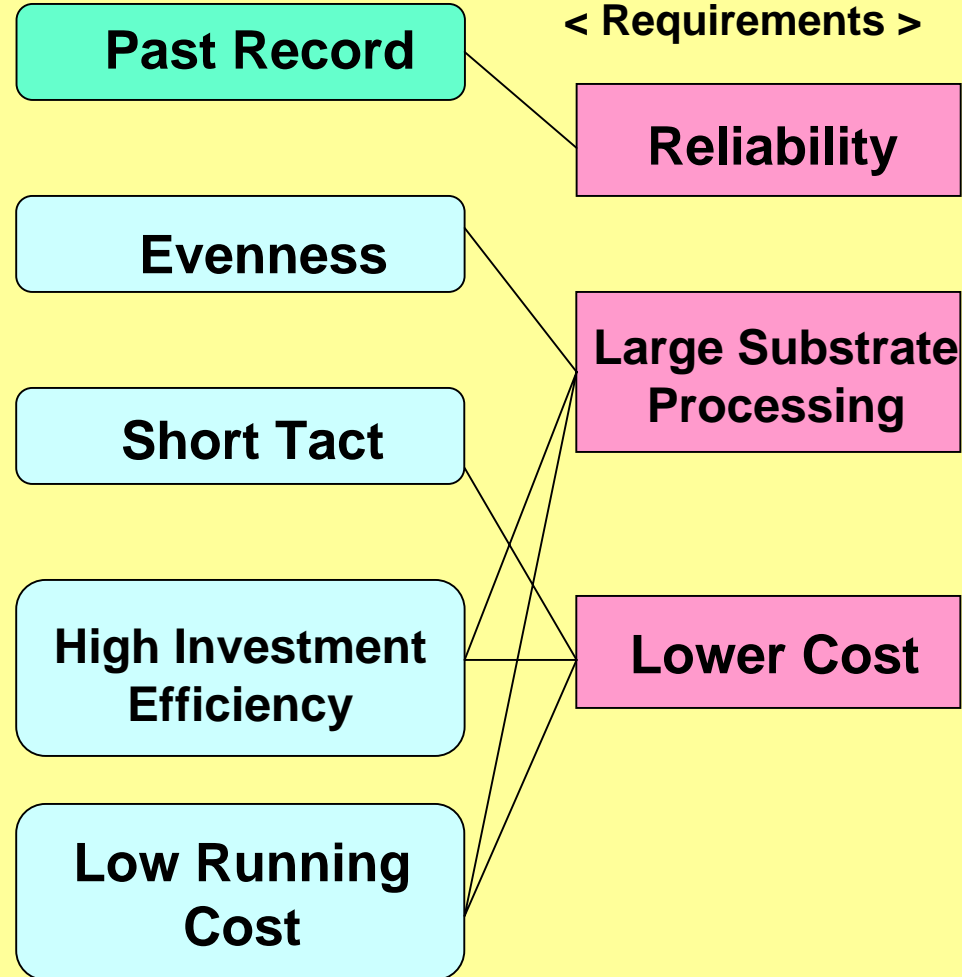
Low Running Cost

< Requirements >

Reliability

Large Substrate Processing

Lower Cost



Toray's Solution Business Model

Environment

- Larger Substrate Size
- More In-house Productions
- Further Globalization of Production Network

Toray's Technologies

Resin BM TAF Spinless Coating

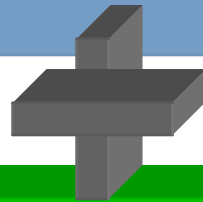
- Top Supplier for Color Mobile Phones
- Owner of Both Materials and Process Technologies

Vital to G5+ Large Substrate Processing



Color Filter

Specialize in Mobile Phone Area



New Businesses

Materials
Spinless Coater
Technology Transfer

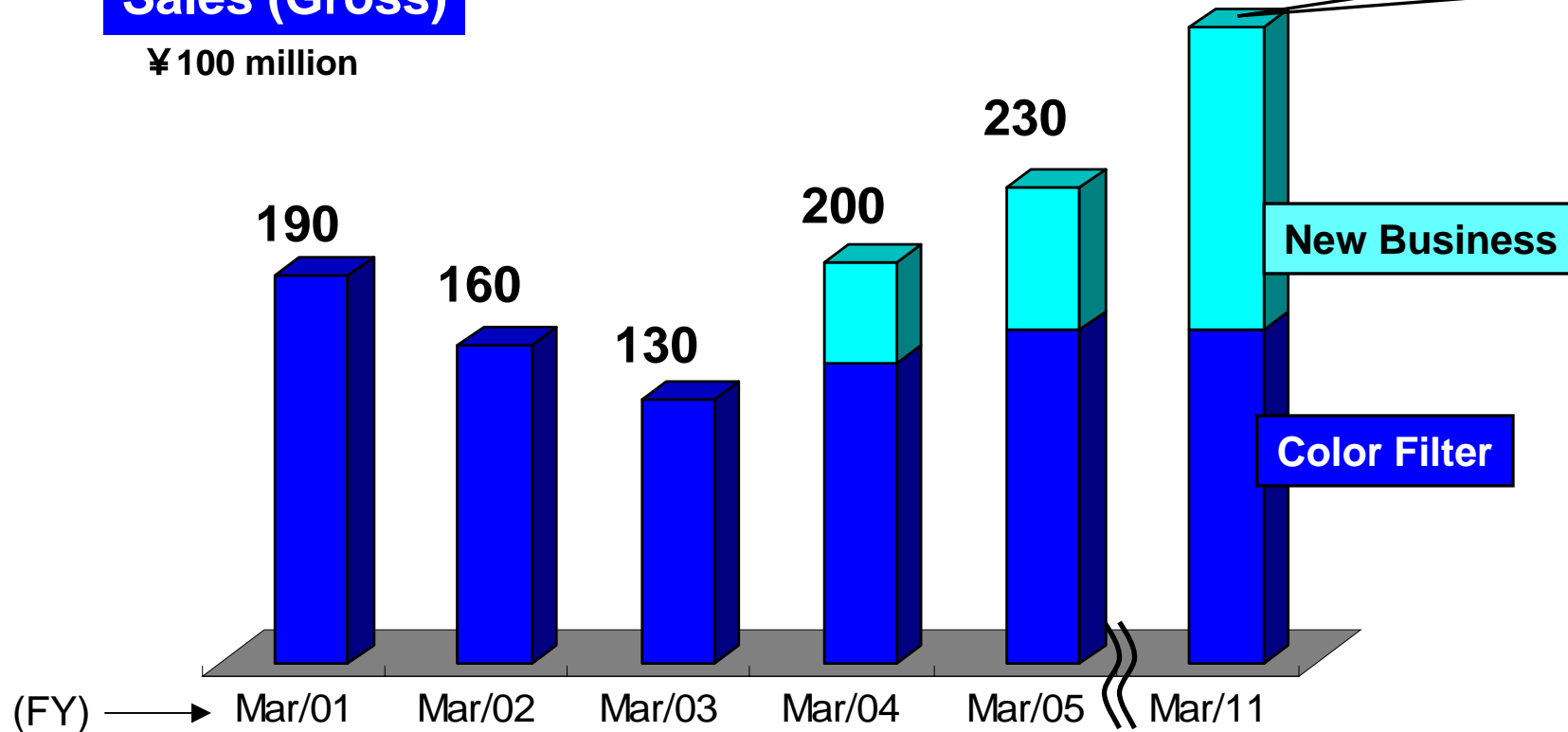
LCD Division's Business Plan

Sales (Gross)

¥100 million

← Forecast →

Goal
Sales of ¥30 billion
by FY Ended Mar/2011



Summary

Circuit Materials

Enlarge businesses by expanding product lineup beyond film materials for LCD Driver IC to cope with a wide variety of technological trends

Semiconductor Materials

Increase the market share in polyimide coatings by focusing on positive type polyimide coatings

PDP TVs, Materials

Enlarge businesses through an alliance with Matsushita Electric Industrial Co., Ltd.

Printing Plates

Enlarge businesses focusing on waterless CTP plates in line with a demand for digitalization of printing

LCD Materials & Equipment

Enlarge spinless coater business and color filter material business, in addition to color filter business intended primarily for mobile phones

Descriptions of predicted business results, projections and business plans contained in this material are based on predicted forecasts of the future business environment made at the present time.

The material in this presentation is not a guarantee of the Company's future business performance.