**October, 2016**
**Lili Wu**

# ASPEED in Brief

- Established in Nov. 15$^{th}$ , 2004

- Paid-In Capital: NTD 317M (USD 10.4M)

- Number of Employees: 52

- Location:

  – Headquarter: No.15, Industry East 4$^{th}$ Rd., Hsinchu Science Park

  – ASPEED Technology (U.S.A) Inc.: 2290 N. First Street, Suite 300, San Jose, CA 95131, USA

# Fabless-Lite Company

**ASPEED**

**Server Management SoC Solutions**

ASPEED
AST2530
P6R121.00S-2E
1422 TAN A0 GP

**PC/AV Extension SoC Solutions**

ASPEED
AST1525
P6R121.00S-2E
1422 TAN A0 GP

**Desktop Virtualization SoC Solutions**

ASPEED
AST3200
P6R121.00S-2E
1422 TAN A0 GP

# Remarkable Highlights

**ASPEED**

**Server SoC Provider**

# WW No. 1

**2006-2014 CAGR** ↑ **43%**

# 8ᵗʰ Quarter

**Financial Breakeven**

4

# Major Milestones

Incorporated

Announced
1st BMC/VGA-2D/
KVMoIP SoC

Achieved Financial
Breakeven in the
8th Quarters

Market Capitalization
NTD10.8B
BMC Market Share WW
No. 1

**2004.11**

**2005.10**

**2006.09**

**2015.10**

**Establishment**

**Growth**

**Expansion**

**2005.01**

**2006.01**

**2012.05**

**2016.05**

Strategic Alliance with
Quanta Computer

Adopted by
Sun Micro

Listed on Taipei
Exchange (TPEX)

Broadcom Emulex
Pilot™ Business
Acquisition

# Product Lineup

**ASPEED**
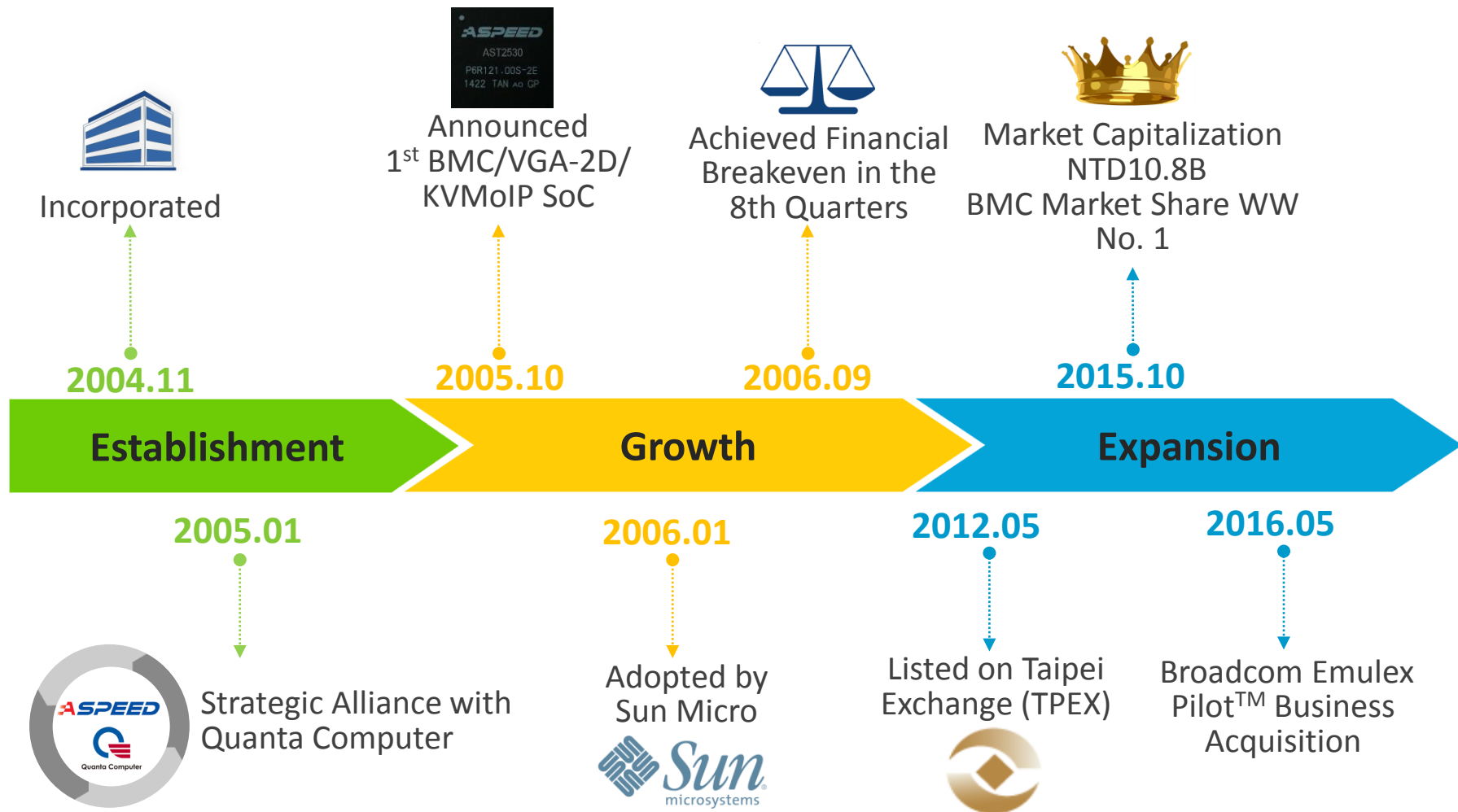
AST1010
AST2200 / AST2150
AST2300 / AST1300 / AST1050
AST2400 / AST1400 / AST1250
AST2500 /AST2510 / AST2520 / AST2530

40nm LP Process
800MHz CPU
DDR4 SDRAM
PCIe Gen-II
*ES: Jun 2014*
*PS: July 2015*

**Server Management**

AST3100
AST3200

**Desktop Virtualization**

40nm LP Process
Microsoft RemoteFX 8.0
Citrix HDX Ready
1GHz CPU
DDR4 SDRAM
PCIe Gen-II
*ES: Jun 2014*
*PS: July 2015*

AST1500 / AST1510
AST1520 / AST1525

**PC/AV Extension**

40nm LP Process
4Kx2K Support
Multi-Screen TV Wall
1GHz CPU
DDR4 SDRAM
*ES: Jun 2014*
*PS: July 2015*

# Remote Server Management

# Market Highlights – CPU vendor status

◇ARM based server CPU

- APM, Cavium

- APM is designing his next gen CPU w/ ASPEED

- Broadcom is designing demo board w/ ASPEED

- Qualcomm is designing demo board w/ ASPEED

◇IBM Open Power

- Power8

- Power9

- AST2600

◇Intel Tinsley

- Will discuss with Pilot team for next gen feature set

# Broadcom Emulex Pilot™ Acquisition

- Broadcom Emulex Pilot™ Business Acquisition
  - Purchase Price: US$30,000,000; US$11,386,192 paid in cash, others paid in ASPEED common stocks.

- Expected Closing Date: 2016/Q4 (Estimated)

- Market Potential:  Emulex Pilot™ series Remote Server Management chip is widely acclaimed in the market
  - Push ASPEED to Brand Market
  - Expand Economies of scale

- Will Grow Faster after the Acquisition
  - Enable a faster entry to brand server market with Broadcom's existing customer base
  - Global Talents: Experienced Management and R&D team
  - Patent Portfolio
  - Reduce Price competition

# Our Core Value

- Highly integration: 2D VGA / BMC / KVMoIP

- Dual Brand Strategy: Integrate ASPEED + Pilot

- Technology ownership

- Dual-IPMI: Maintain special spec，keep OEM/Branding variation
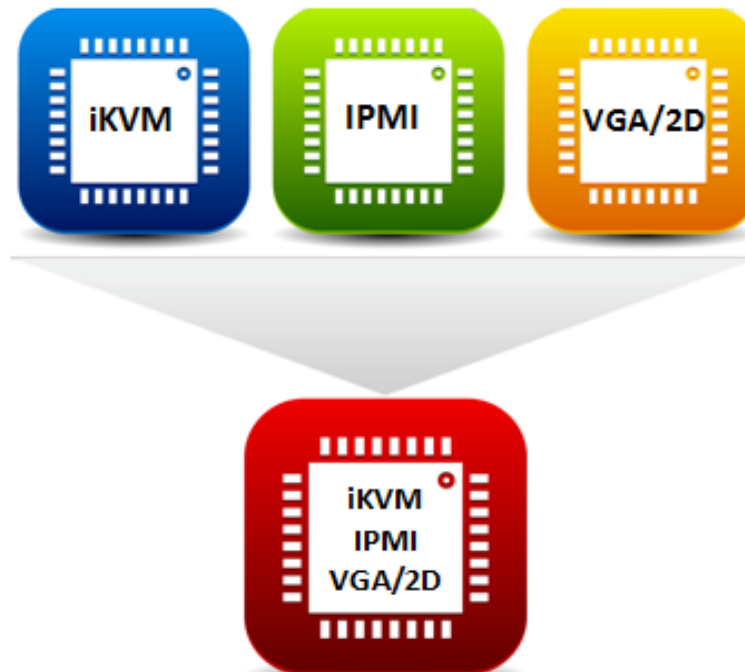
# System Architecture
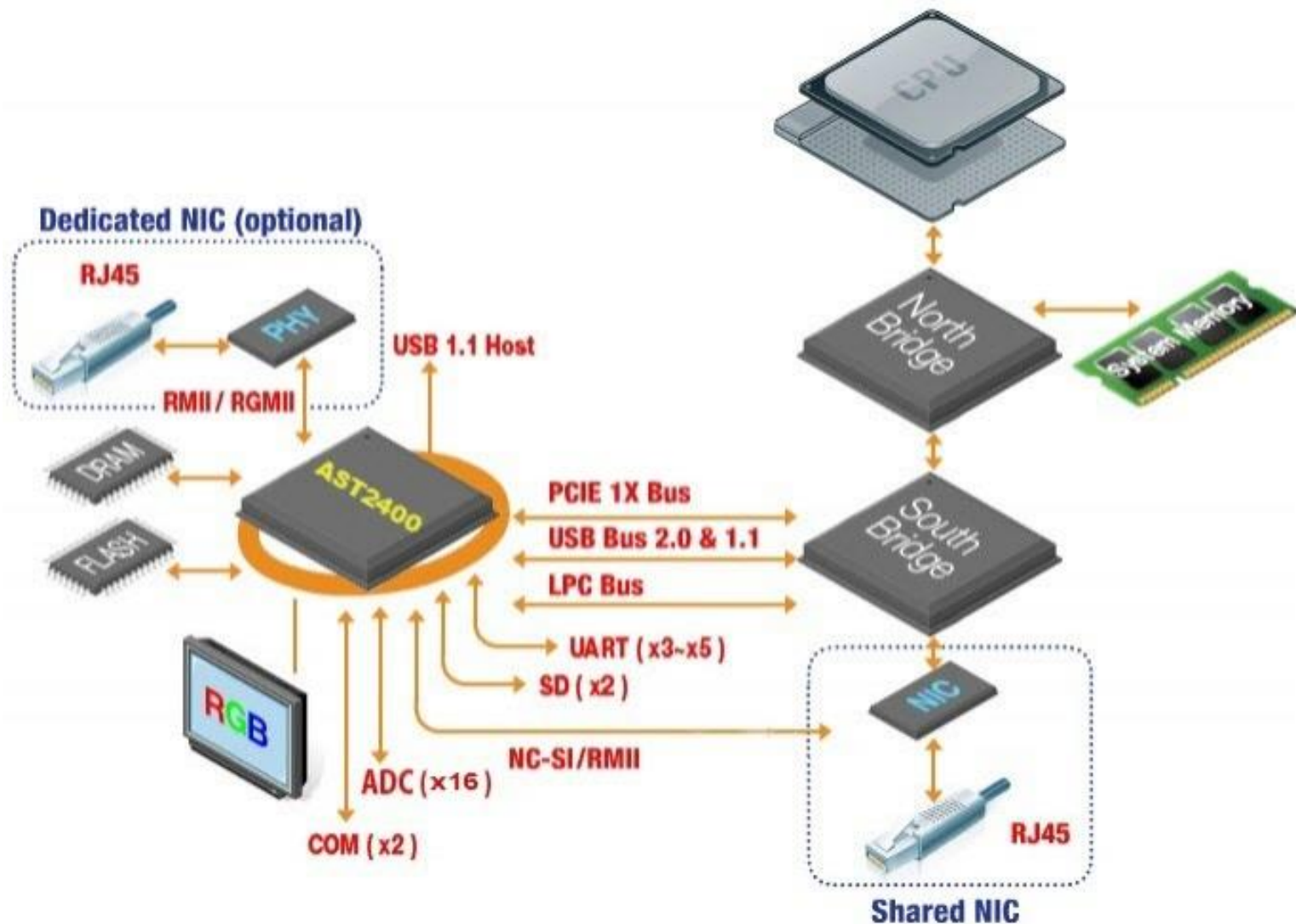
# PC/AV Extension

# Features & Benefits

- UHD / FHD / HD over IP

- Controllable Extension over IP Matrix: Easy to control any size of video source input/output

- Real-time low latency

- Patented visually lossless compression algorithm to extend 4K2K HDTV Display up to 120M and longer over CAT5

- Total Cost Ownership (TCO): 1/3 of conventional system

- Compatible with all signage software & all video format

- Reduce total system power consumption

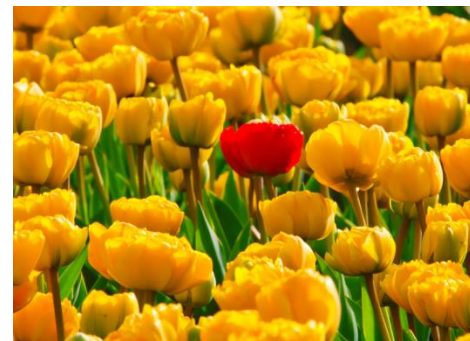- Flexible Deployment

# Advantages of UHD over IP

- Scalable, flexible, expanding capabilities even after years of installation
- Supports video walls from 2x2 to 16x16 easily
- Resolution: Use one CAT5E cable to extend 4K2K up to 120M and longer
- Enhance visually lossless compression
- Quick to deployment

**Original Image**
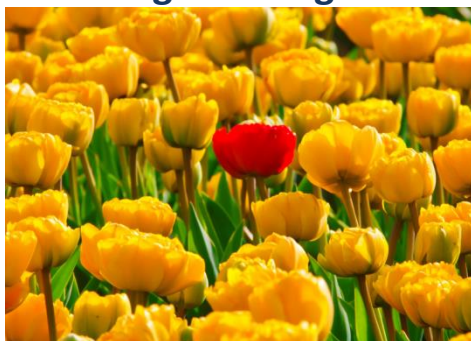
**Visually Lossless Compression**

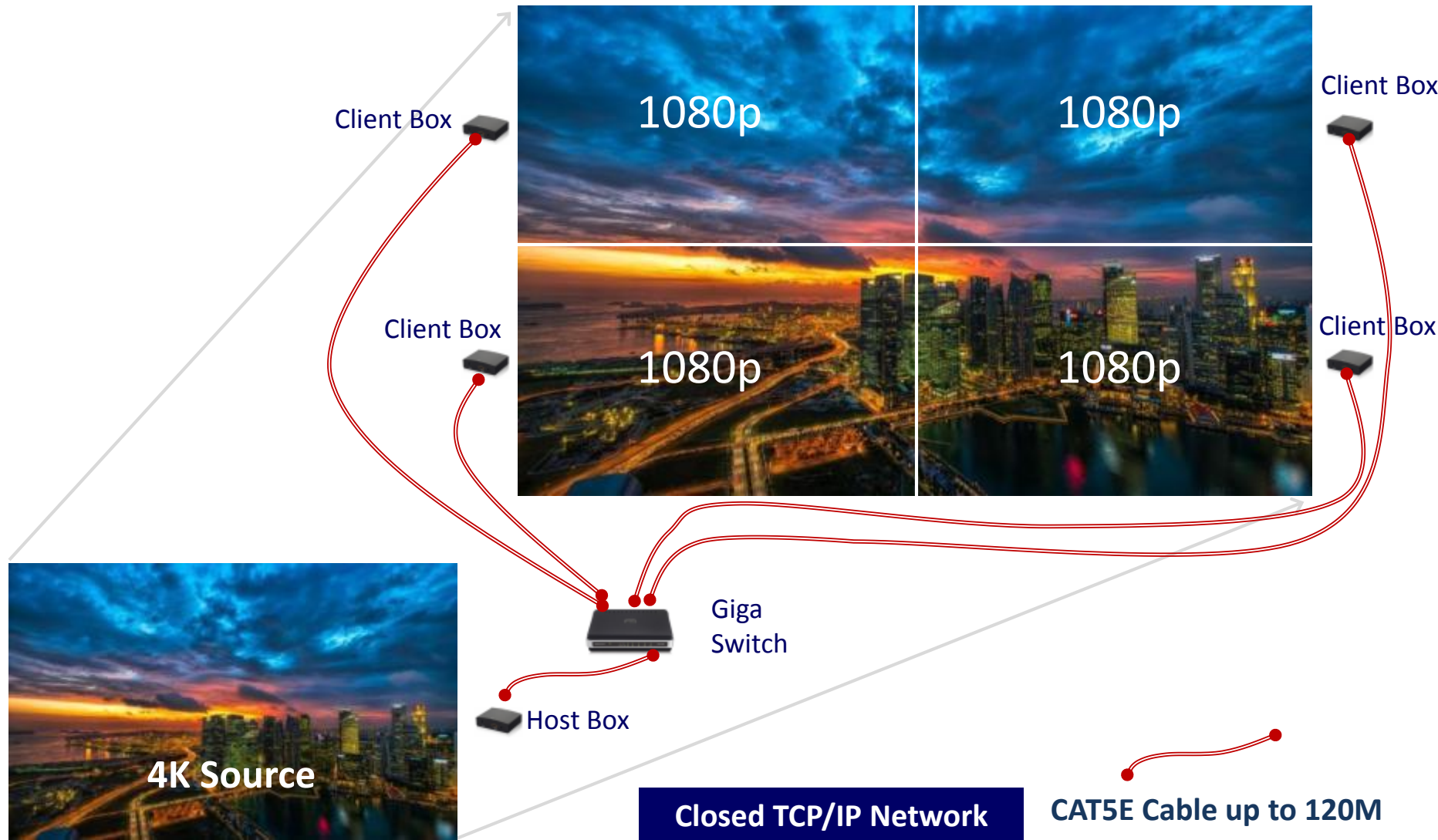**Lousy Compression**

**AST1520 Image**

**MJPEG Image**

# 4K/2K HDTV Video Wall



ASPEED

Client Box

Client Box

1080p

1080p

Client Box

Client Box

1080p

1080p

Client Box

Giga Switch

Host Box

4K Source

**Closed TCP/IP Network**

**CAT5E Cable up to 120M**

# Desktop Virtualization

# Desktop Virtualization Segment

- Traditional x86 base Virtualization / Thin Client
  - Dominated by Citrix / VMWare
  - Expensive, annual virtualization fee
  - Hard to replace

- Desktop-as-a-Service (DaaS)
  - Government, public area, school, military

- Desktop Re-direction

# Virtual Desktop Infrastructure

- An individual physical server can be divided into multiple (ie. 10~20) isolated virtual desktop computers.

- An individual user is able to access to the server via network connection by adopting a Thin-Client computer or a Zero-Client computer.

# Benefits of Desktop Virtualization

- Total cost ownership
  - MIS maintenance cost
  - H/W, desktop/laptop vs. small box
- Green environment
  - Lower power consumption, save the earth
  - Power consumption: AST3100/AST3200 is around 2W; entire box is under 15W (with 4 USB devices)
  - Desktop PC is generally over 100W
- Deployment
  - Easy to expand the servers, storages and remote desktop users by virtualization
  - Live-move virtual machine among the servers easily
- Enterprise security concern
  - Office worker
  - Specific task worker
  - Contractor offshore worker
  - Workers need to access his app/data from anywhere



AST3200

# Revenue & Shipment Growth
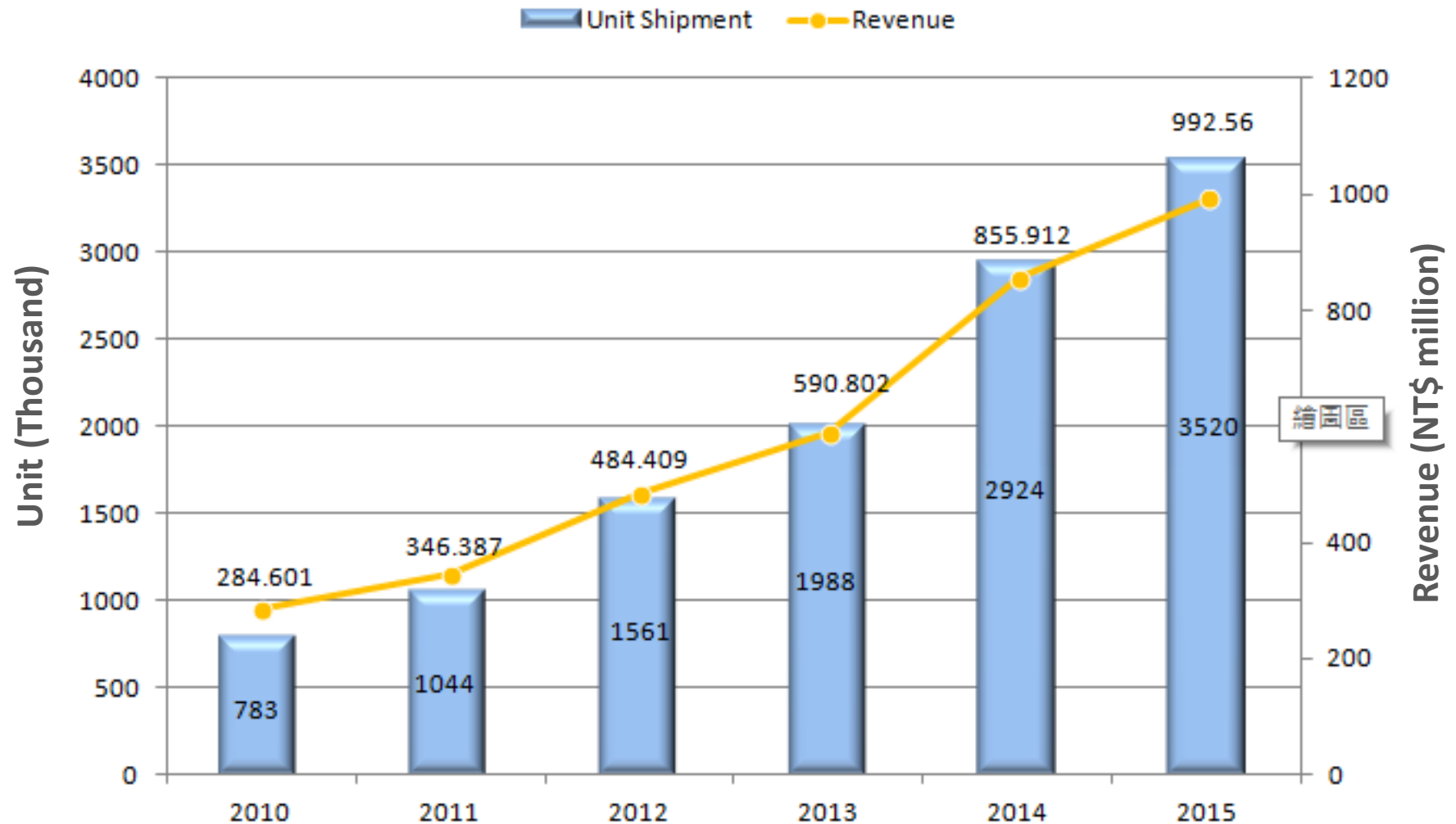
# 2016Q3 Sales & Profits

| Unit : NTD 1,000 | 2015Q3 | 2016Q3 | |
| --- | --- | --- | --- |
| | Amount | Amount | YoY |
| **Sales Revenue** | 285,603 | 382,626 | 33.97% |
| **Net Operating Profit** | 109,560 | 155,130 | 41.6% |
| **Pre-Tax Profit** | 133,810 | 141,046 | 5.4% |
| **Net Income** | 117,119 | 117,065 | -0.1% |
| **EPS** | 3.71 | 3.69 | -0.1% |

# 2016 Sales & Profits

| Unit : NTD 1,000 | 2015 Q1~Q3 | 2016 Q1~Q3 | |
|---|---|---|---|
| | Amount | Amount | YoY |
| Sales Revenue | 726,719 | 969,675 | 33.4% |
| Net Operating Profit | 275,170 | 384,395 | 39.7% |
| Pre-Tax Profit | 275,170 | 364,812 | 32.5% |
| Net Income | 259,236 | 297,583 | 14.8% |
| EPS | 8.23 | 9.40 | 14.21% |

# Key Indices

| Unit : NTD 1,000 | 2015Q3 | 2016Q3 | |
|---|---|---|---|
| | Amount | Amount | YoY |
| **Cash** | 836,005 | 996,580 | 19.20% |
| **Account Receivable** | 217,531 | 285,835 | 31.39% |
| **Inventory** | 42,296 | 61,905 | 46.35% |
| **Debt** | 120,000 | 195,000 | 62.5% |
| **Shipment Qty (K/pcs)** | 2,597 | 3,488 | 34.30% |

# Thank you