

The image features the word "EMemory" in a bold, orange, lowercase sans-serif font at the top. The background is white with a pattern of light gray wireframe cubes. Some cubes are arranged in a diagonal line from the top left towards the bottom right, while others are scattered or form vertical columns on the right side.

**EMemory**

# **2Q 2017 Investor Conference**

**Aug. 8<sup>th</sup>, 2017**

# IPR Notice

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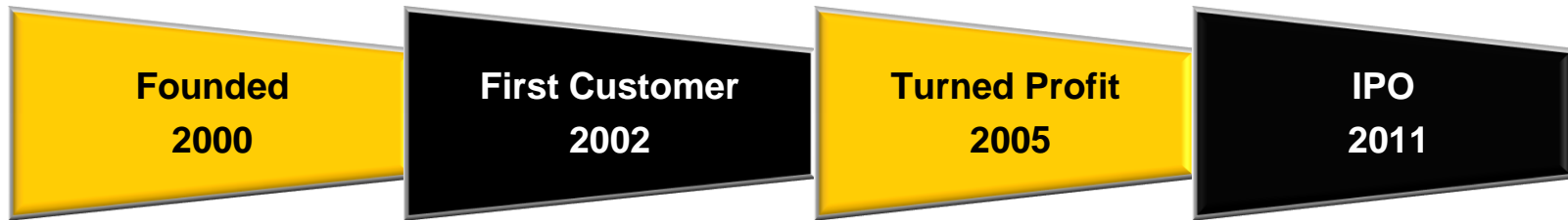
# Cautionary Statement

**This presentation contains forward-looking statements, which are subject to risk factors associated with semiconductor and intellectual property business. It is believed that the expectations reflected in these statements are reasonable. But they may be affected by a variety of variables, many of which are beyond our control. These variables could cause actual results or trends to differ materially which include, but are not limited to: wafer price fluctuation, actual demand, rapid technology change, delays or failures of customers' tape-outs into wafer production, our ability to negotiate, monitor and enforce agreements for the determination and payment of royalties, any bug or fault in our technology which leads to significant damage to our technology and reputation, actual or potential litigation, semiconductor industry cycle and general economic conditions. Except as required by law, eMemory undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise.**

# Outline

- **Business Model**
- **Review of Operations for 2Q 2017**
- **Future Outlook**
- **Q & A**

# About eMemory



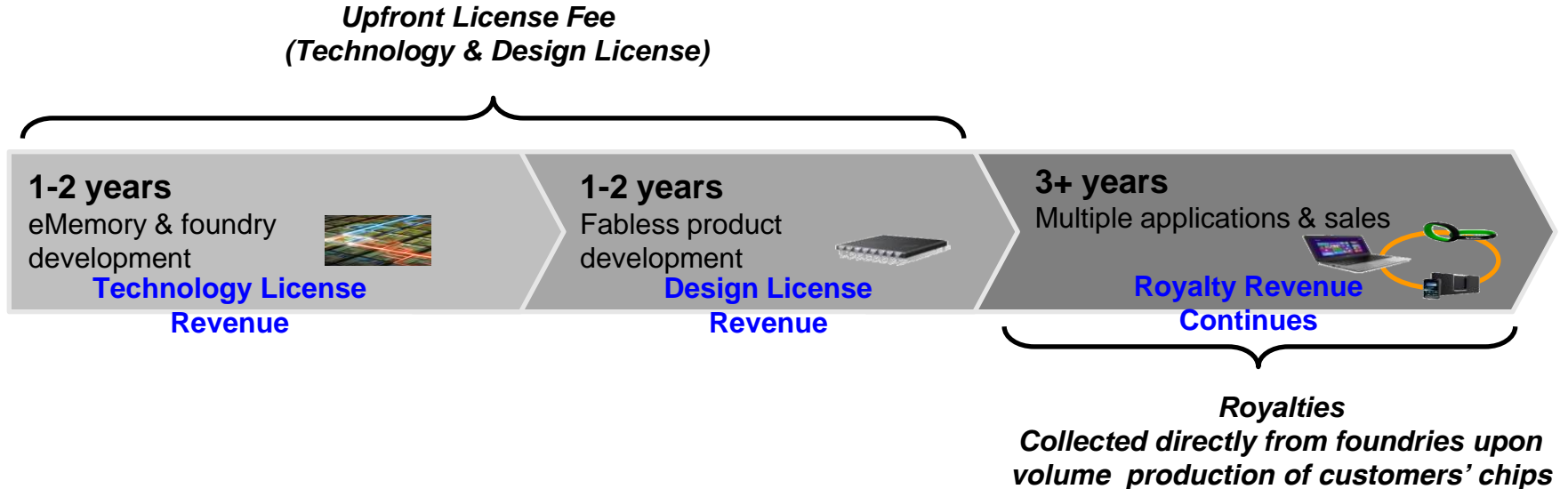
- **Largest Logic Non-Volatile Memory (NVM) IP company**
- **234 employees (161 R&D)\*.**
- **No fundraising from capital markets or bank loans since IPO in 2011.**
- **Over 90% of earnings distributed in cash dividends.**

Note\*: As of June 30<sup>th</sup>, 2017

# Business Model

- Growth Metrics

- › No. of Embedded Platforms
- › No. of Design Licenses
- › Royalty



# Worldwide Customers



## Foundry



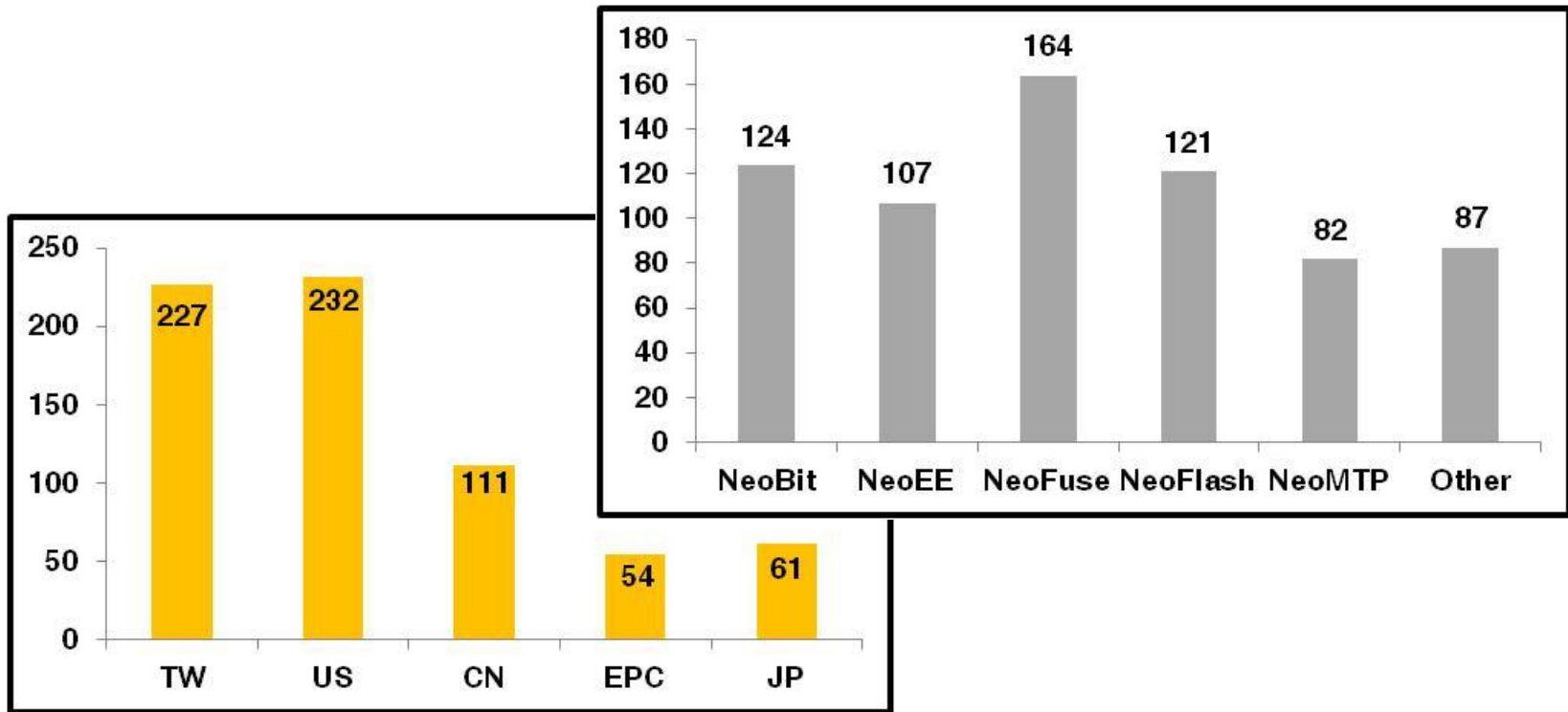
## IDM



	Taiwan	China	Korea	Japan	North America	Europe	Others
Foundry	5	8	3	4	1	2	1
IDM	0	0	0	8	2	1	0
Fabless	261	513	71	52	242	111	53

# Patent Portfolio

	1Q 17	2Q 17	Change
Pending	244	232	- 12
Issued	416	453	+ 37
<b>Total</b>	<b>660</b>	<b>685</b>	<b>+ 25</b>

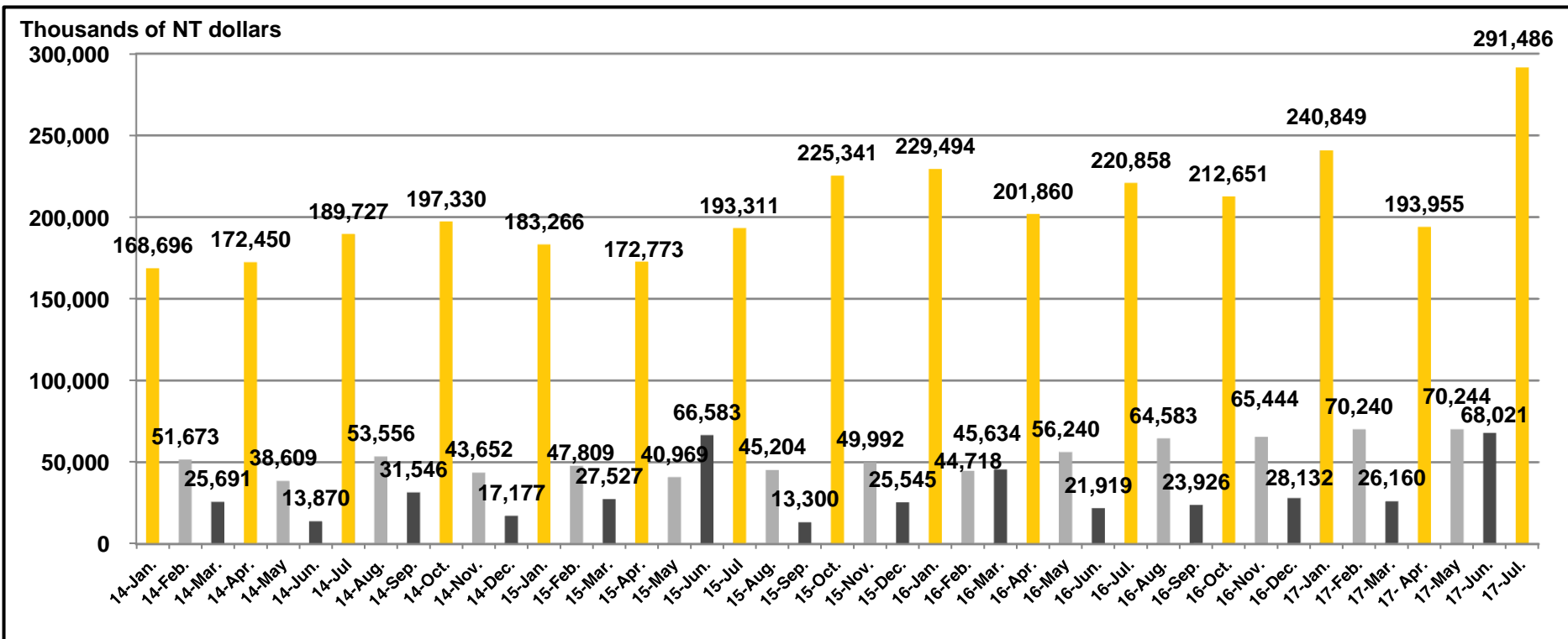


Note: As of June 30<sup>th</sup>, 2017



# Quarterly Revenue Pattern

- 1st month: Receive **License Fees** of the month and **Royalty** from most foundries on previous quarter's wafer shipments
- 2<sup>nd</sup> month: Receive **License Fees** of the month and **Royalty** from other foundries
- 3<sup>rd</sup> month: **License Fees Only**.



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# Q2 Revenue Breakdown

Thousands of NT dollars

	Q2 2017	Q1 2017	QoQ	Q2 2016	YoY	H1 2017	H1 2016	YoY
Licensing	134,140	74,146	80.91%	77,715	72.61%	208,286	163,691	27.24%
Royalty	198,080	263,103	-24.71%	202,304	-2.09%	461,183	436,174	5.73%
Total	332,220	337,249	-1.49%	280,019	18.64%	669,469	599,865	11.60%

Number of Licenses

	Q2 2017	Q1 2017	2016	2015
Technology Licenses	8	5	43	28
Design Licenses	NRE	13	8	57
	Usage	79	88	349

# Financial Income Statement

Amount in Thousands of NT Dollars, except margins/EPS/ROE

	Q2 2017	Q1 2017	Q2 2016	change (QoQ)	change (YoY)
Revenue	332,220	337,249	280,019	-1.5%	18.6%
Gross Margin	100%	100%	100%	-	-
Operating Expenses	188,562	193,603	163,276	-2.6%	15.5%
Operating Margin	43.2%	42.6%	41.7%	0.6ppts	1.5ppts
Net Income	135,610	151,378	106,245	-10.4%	27.6%
Net Margin	40.8%	44.9%	37.9%	-4.1ppts	2.9ppts
EPS	1.79	2.00	1.40	-10.5%	27.9%
ROE	29.6%	30.2%	24.5%	-0.6ppts	5.1ppts

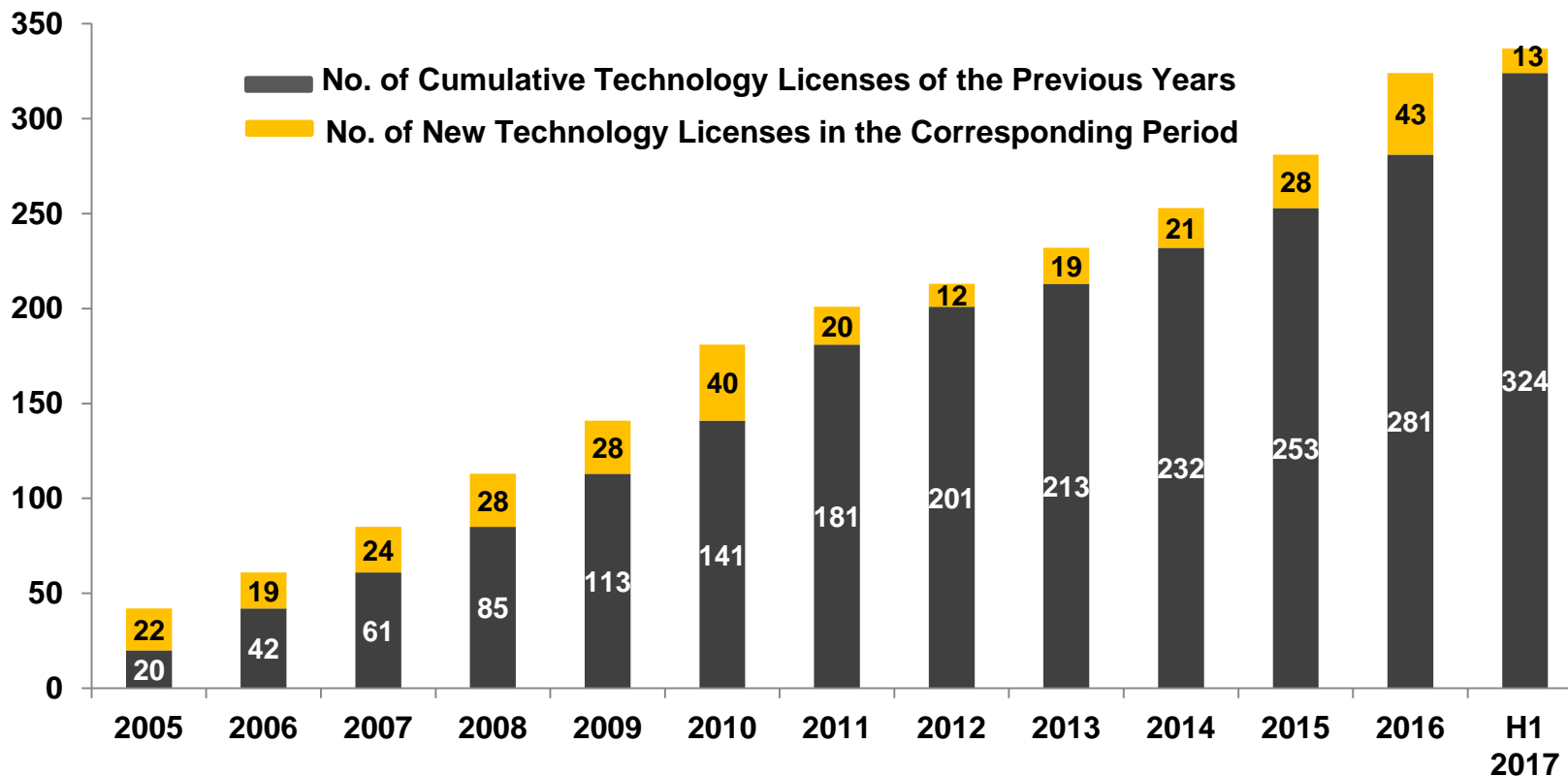
Note : Revenue amount in US dollars, QoQ growth of 2.2% and YoY growth of 26.8%.

# Technology Licensing

## Number of Licenses

Year	2014	2015	2016	H1 2017
License	21	28	43	13

Note: Terms (including number of process platforms and licensing fees) for each technology license are set contractually. Payments are made according to set milestones, and there are no particular seasonal factors involved.



# New Technologies Under Development

- New technologies being developed for **104** platforms by Q2 17.
- **21** for NeoBit, **40** for NeoFuse, **20** for NeoEE, and **23** for NeoMTP.

	7/10nm	12/14/16nm	28nm	40nm	55/65nm	80/90nm	0.11~ 0.13um	0.15~ 0.18um	>0.25 um
NeoBit	-	-	-	-	-	-	8	13	-
NeoFuse	3	3	8	3	10	6	4	3	-
NeoEE	-	-	-	-	-	-	3	17	-
NeoMTP	-	-	-	-	1	2	7	13	-

Note: As for June 30<sup>th</sup>, 2017

# Technology Developments by Processes

12" Fabs	Production	Development	NVM Type	Process Type
7/10nm	0	3	OTP	FF
12/14/16nm	2	3	OTP	FF+
28nm	8	8	OTP	LP/HPM, HLP/HPM, LPS
40nm	8	3	OTP, MTP	HV-DDI, LP, eFlash
55/65nm	14	11	OTP, MTP	LP, HV-DDI, HV-OLED, DRAM, CIS, eFlash
80/90nm	6	5	OTP, MTP	HV-DDI, HV-OLED, LP, eFlash
0.13/0.11um	9	1	OTP	HV-DDI, BCD, Generic
0.18um	1	0	OTP	BCD
<b>Total</b>	<b>48</b>	<b>34</b>		

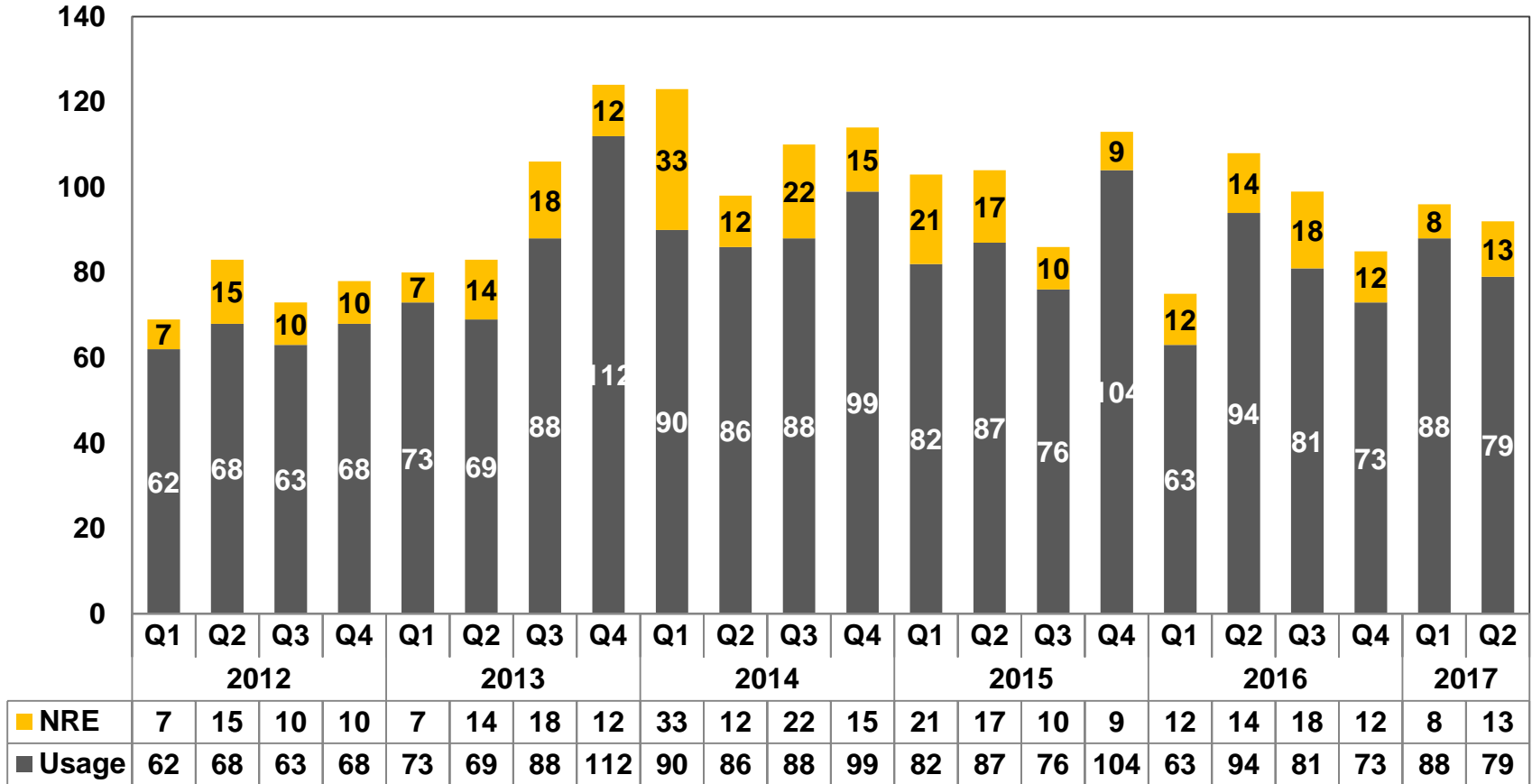
8" Fabs	Development	NVM Type	Process Type
90nm	3	OTP	HV-DDI, LL
0.13/0.11um	21	OTP, MTP	HV-DDI, BCD, LP, RF, CIS, LL, Green
0.18/0.16/0.152um	46	OTP, MTP	Generic, LP, LL, MR, HV, Green, BCD
0.25um	0	OTP, MTP	BCD
0.35um	0	OTP	UHV
<b>Total</b>	<b>70</b>		

Note: As of June 30<sup>th</sup>, 2017

Confidential

# Design Licensing (New Tape-Out)

- A total **188** NTO in H1 2017 (**367**@2016, **406**@2015, **445**@2014, **393**@2013)

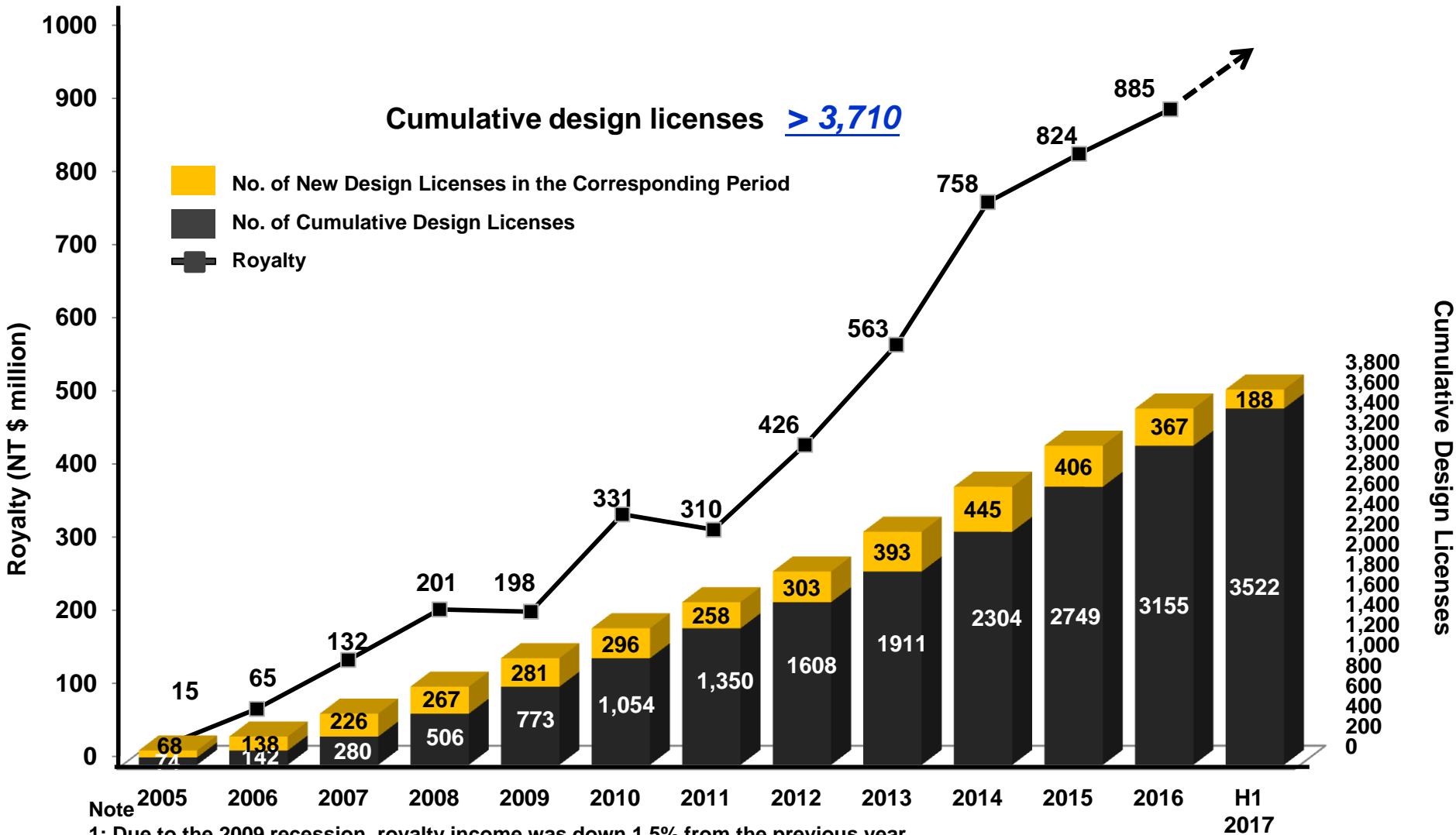


Note\*: As the applications of MCU at several foundries have gradually entered mass production, and the business model of the main foundry partner which provides green process has shifted to — eMemory licenses IP cell to the foundry for it to provide direct design service to customers — as the result, the new tape out number of MCU has been affected, but the royalty coming from IP cell usage continues to roll in.

In summary, even the new tape out number of MCU is lower than before; the corresponding wafer output and royalty continue to grow.

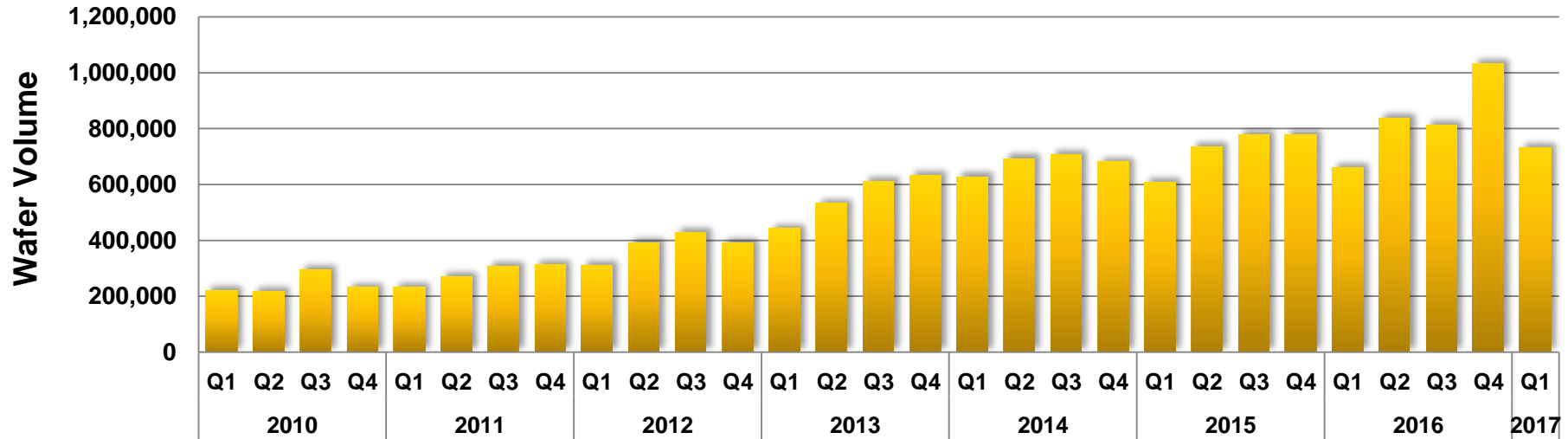


# Cumulative Licenses Drive Future Royalties



Note  
 1: Due to the 2009 recession, royalty income was down 1.5% from the previous year.  
 2: Prepaid royalty from a single customer contributed to 2010 annual growth of 67%, followed by a drop of 6.3% in 2011.  
 3: CAGR for 2009-2013 was 30%.

# Wafer Production Volume



eMemory IP's Penetration Rates in T Company (in US\$revenue)

	Process node	*% of T	Q2 17	Q1 17	2016	2015
8"	0.25/0.35	3%	44.84%	37.05%	28.15%	33.49%
	0.15/0.16/0.18	11%	7.36%	9.10%	12.43%	8.73%
	0.11/0.13	3%	58.76%	41.92%	42.61%	29%
12"	80/90nm	5%	12.73%	10.96%	12.50%	19.85%
	55/65nm	10%	4.73%	3.50%	3.59%	0.55%
	40/45nm	13%	0%	0%	0%	0%
	28nm	27%	0.18%	0.56%	0.55%	0.05%
	16/20nm	26%	0%	0%	0%	0%
8"		18%	21.77%	16.13%	18.86%	16.64%
12"		82%	1.43%	1.15%	1.44%	1.87%
<b>Total</b>		<b>100%</b>	<b>5.07%</b>	<b>3.54%</b>	<b>4.27%</b>	<b>4.76%</b>

\* T company's Q2 2017 revenues broken down by process nodes

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# Outlook for Q3 and beyond

## Revenue growth to accelerate in H2 2017

- **Key drivers to licensing revenue:**
  - › Worldwide foundry partners keep developing advanced processes and MTP platforms.
  - › We're establishing partnerships with more foundries worldwide.
  - › Our growing IP library will also boost design license revenue.
- **Key drivers to royalty revenue :**
  - 8-inch processes
    - › Fingerprint royalty grow explosively due to an expansion from high-end to mid-low smartphones markets as well as our market share gains.

# Outlook for Q3 and beyond

- **PMIC royalty will increase strongly with content increase of new smartphones. Growths will be driven by the ramp of new products by a US smartphone maker in H2, as well as a shift of business terms with the largest US chipmaker from “one-time fee” to “royalty-based”.**
- **MTP IP series start contributing to royalty with more design-wins.**
- **Automotive applications start generating royalty.**

## 12-inch processes

- **With display technology migrating toward TDDI and OLED, our customers continue volume production of high-end TDDI (55nm) and OLED (40nm) products.**
- **STB, Multimedia and Network-related applications have been taped out subsequently in 28nm and below.**

# Outlook for Q3 and beyond

- **R&D developments**

- › **Our IP has been taped out at 12nm and 22nm SOI process. The 7nm IP first taped out in April at one foundry, and one more tape-out expected in September at another foundry.**
- › **NeoPUF, our security IP, has been taped out at a major foundry and is to be designed into products by the end of this year.**
- › **Autotronic customers have started volume production beginning this year.**

# Key Growth Drivers

## Growth in application per mobile devices

- More chip applications per smartphone/tablet product.

## Growth into more markets

- From consumer electronics and mobile devices to wearable devices.
- Adding new NVM product lines further enable more product applications.

## Growth in advanced technology

- Higher royalty per wafer is contributed from more advanced technology nodes.

## Great IoT era

- Embedded Logic NVM will be a must.

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# Q & A

The background of the slide is a light gray color with a pattern of 3D cubes. The cubes are arranged in a way that creates a sense of depth and perspective, with some cubes appearing to be stacked or overlapping. The cubes are rendered in a simple, wireframe style with light gray outlines.

# eMemory

**Embedded Wisely, Embedded Widely**