

Still On Track

Techcet CMP Consumables 2013 Market Update

Michael A. Fury, Ph.D.
Techcet Group LLC
July 10, 2013

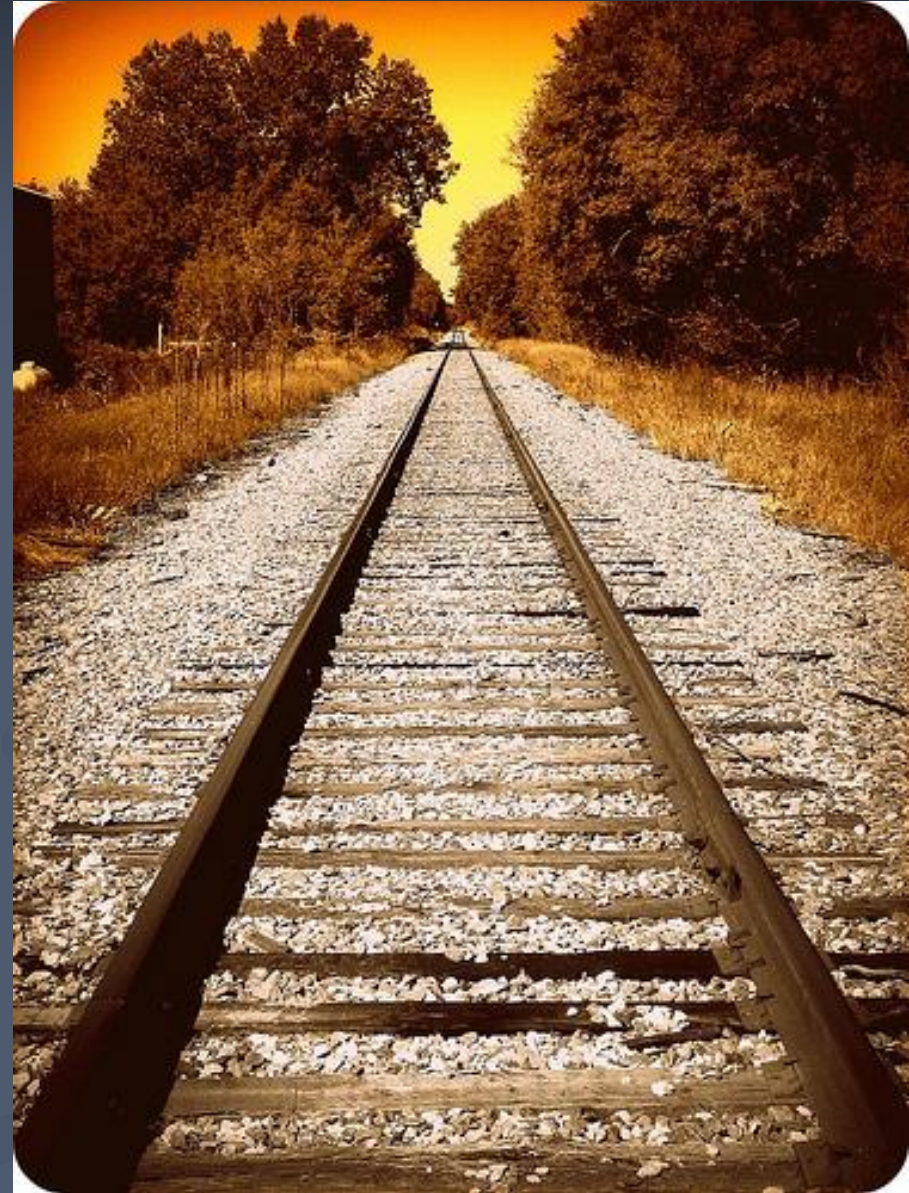


Techcet Group, LLC

MFury@Techcet.com 415-395-6945
www.techcet.com

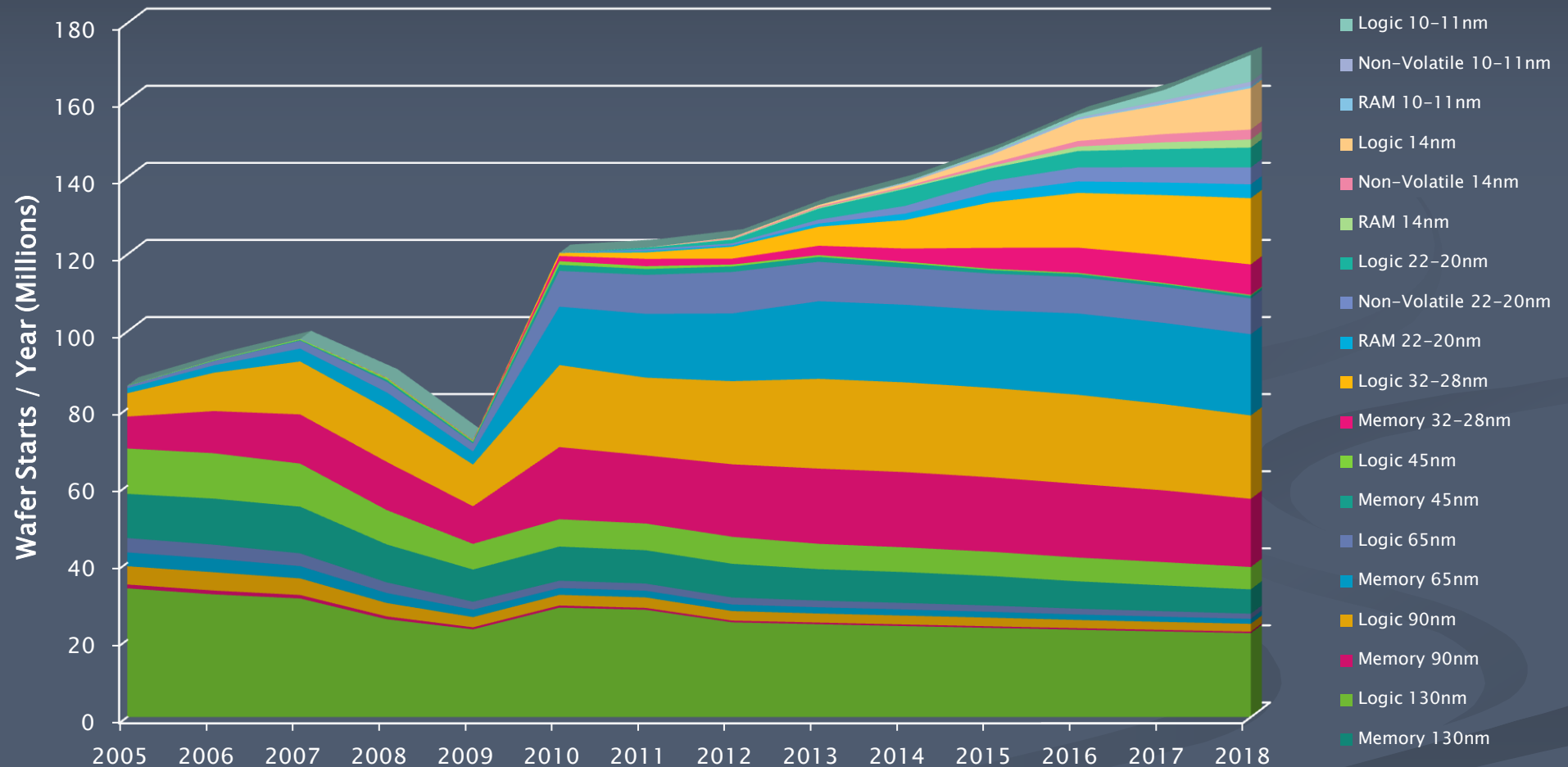
Outline

- ✧ The Business of Semiconductors
- ✧ The Business of CMP
- ✧ Wrap Up



The Business of Semiconductors

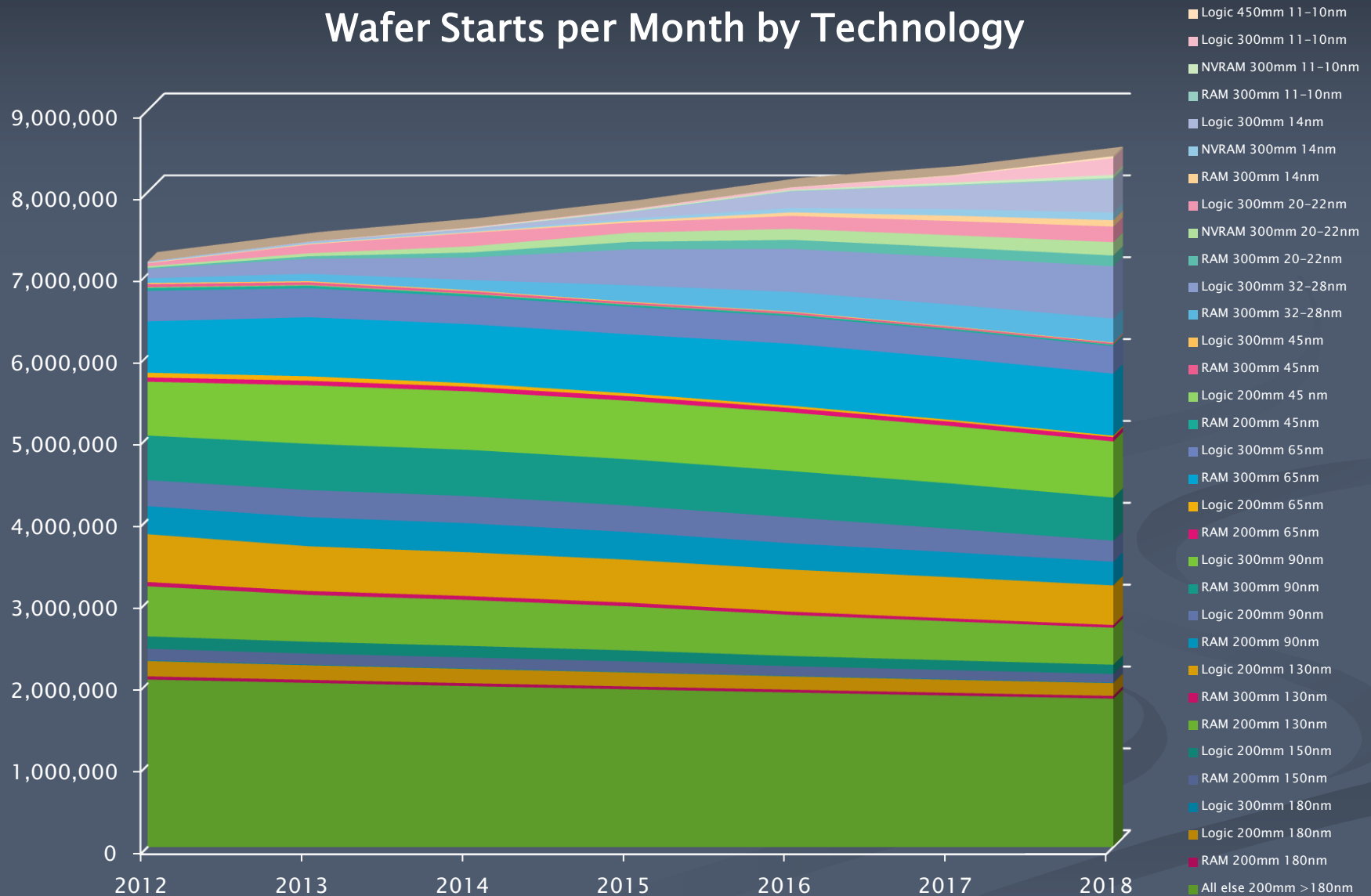
Annual Wafer Starts (200mm Equivalent)



Source: Techcet Group, 2013

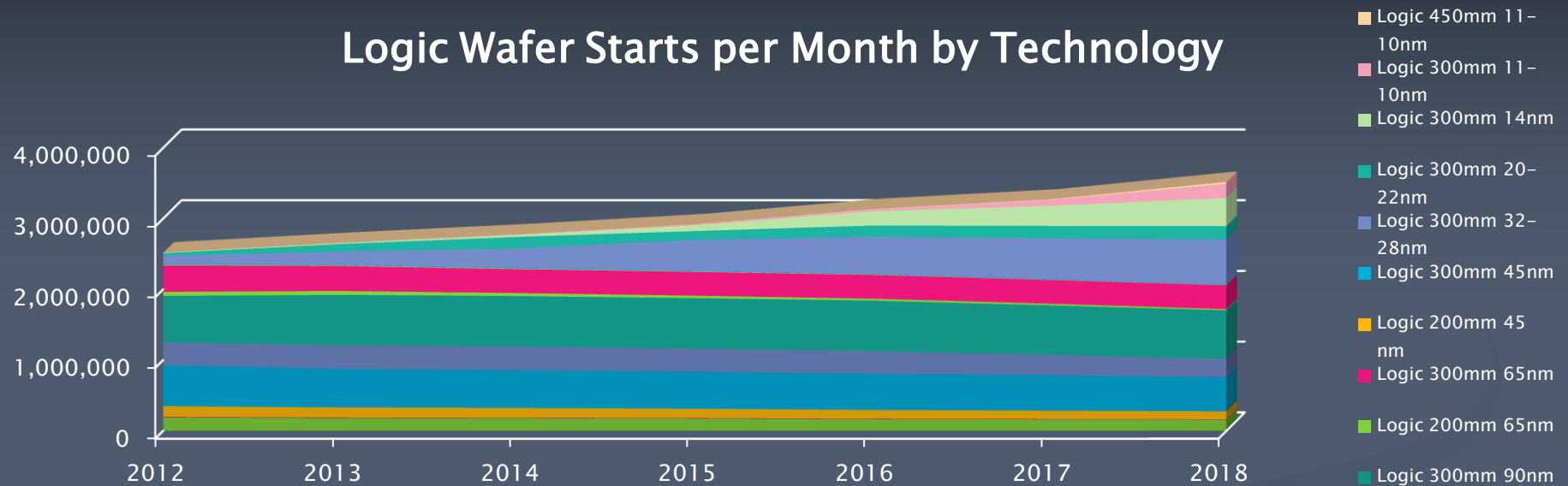
The Business of Semiconductors

Wafer Starts per Month by Technology

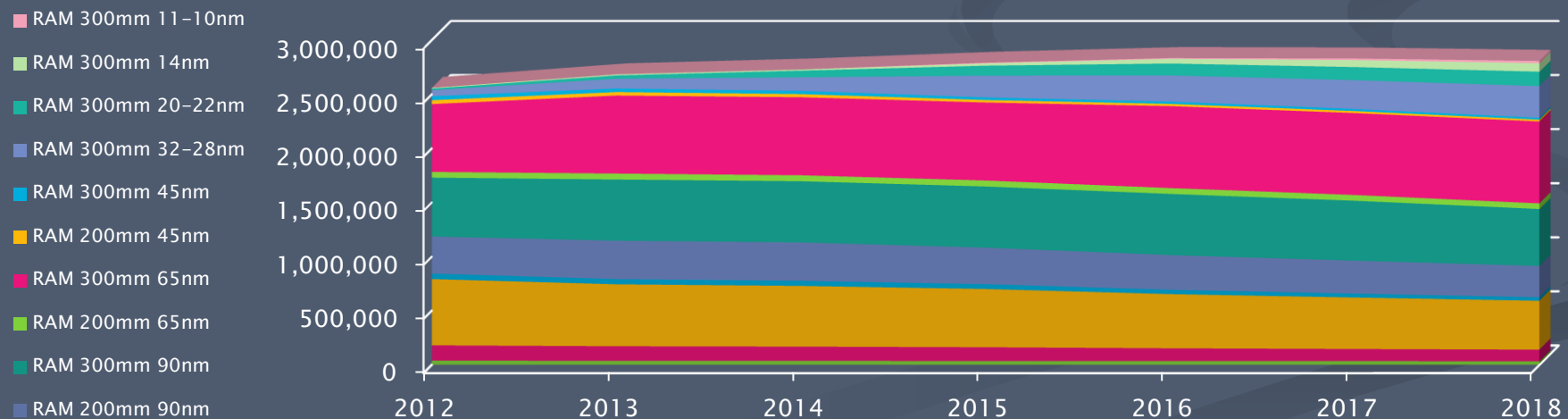


The Business of Semiconductors

Logic Wafer Starts per Month by Technology

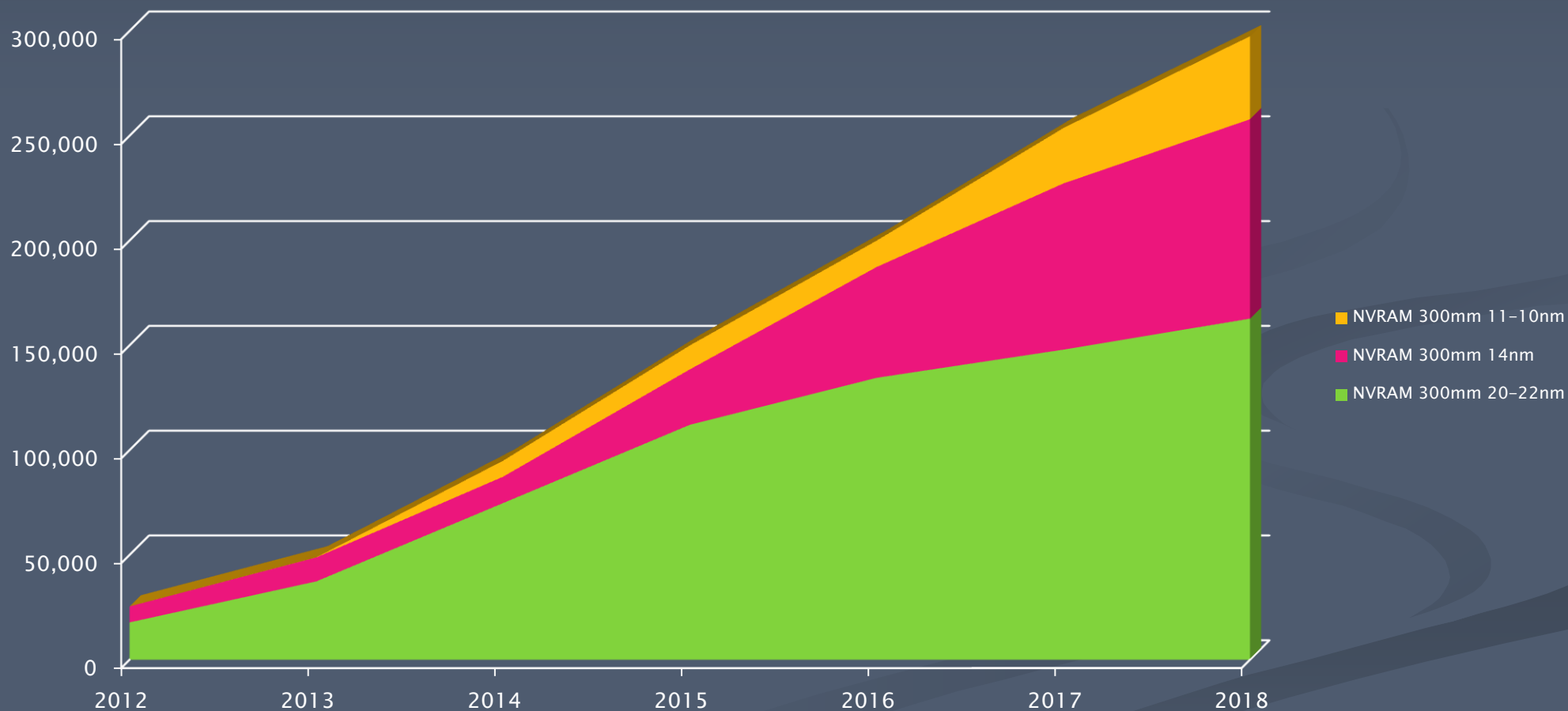


RAM Wafer Starts per Month by Technology



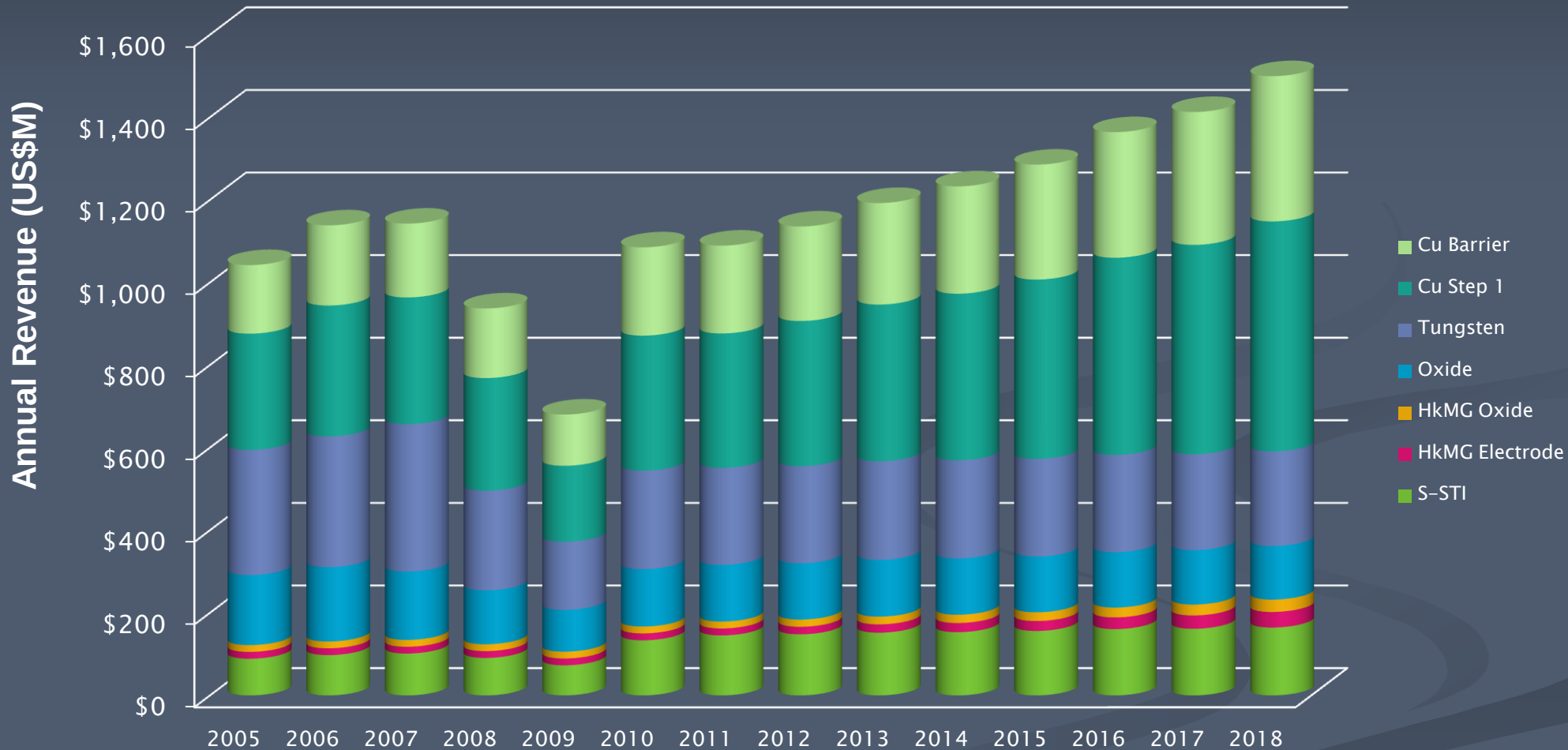
The Business of Semiconductors

NVRAM Wafer Starts per Month by Technology



The Business of CMP

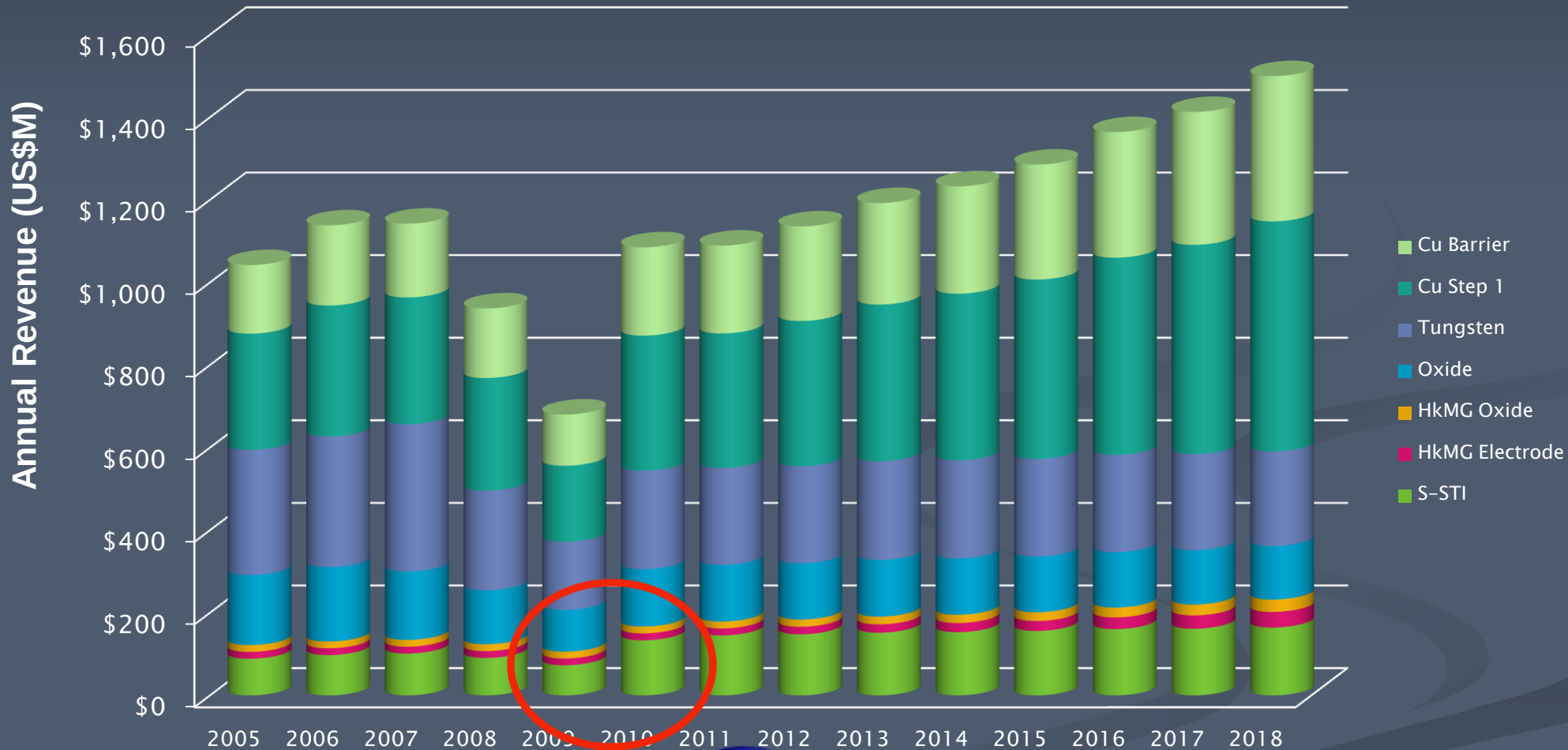
Pad & Slurry Revenue by Application



Source: Techcet Group, 2013

The Business of CMP

Pad & Slurry Revenue by Application



Source: Techcet Group, 2013

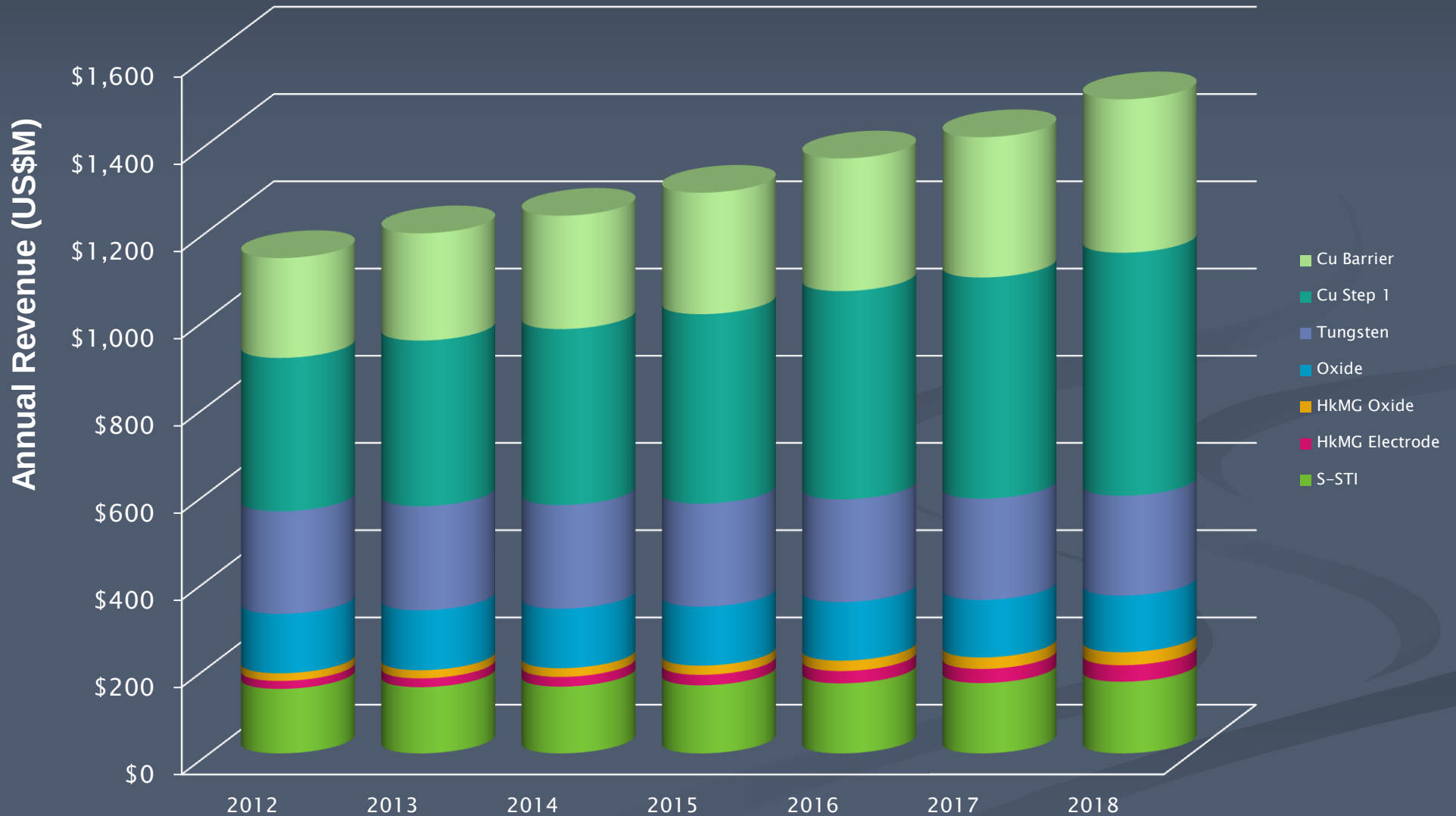
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Ceria Price Jump

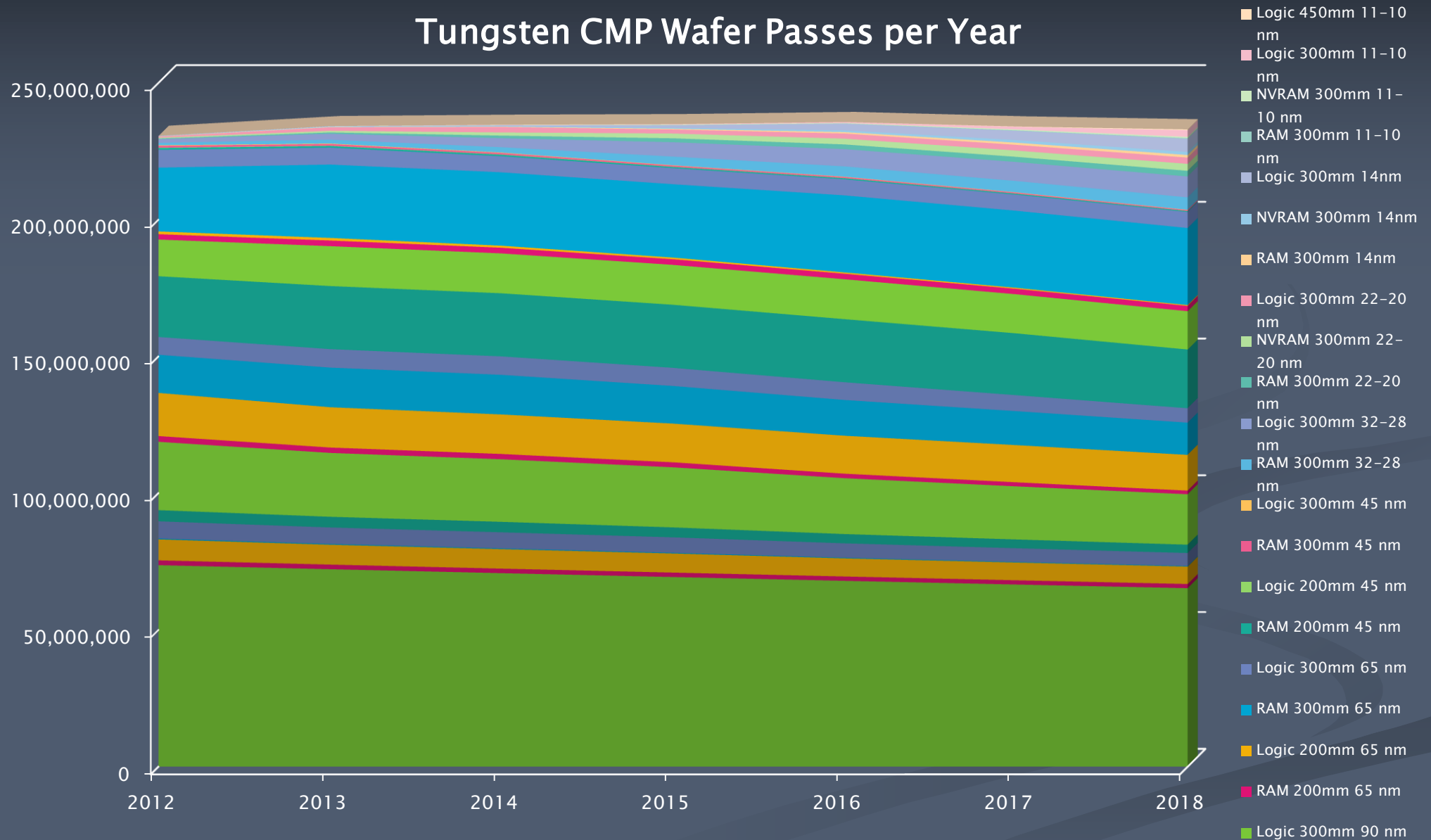
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Pad & Slurry Revenue by Application

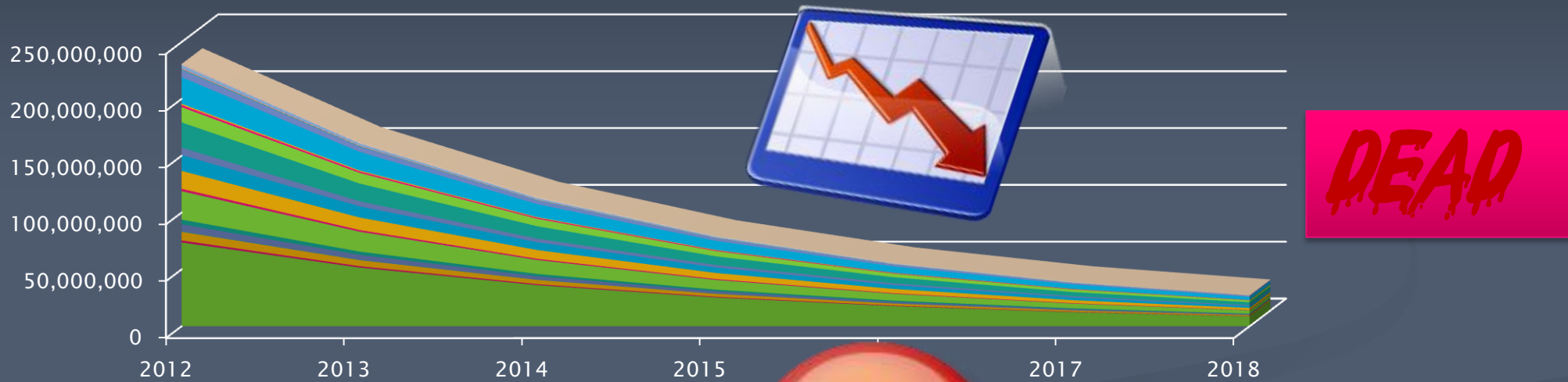


The Business of CMP

Tungsten CMP Wafer Passes per Year



The Business of CMP

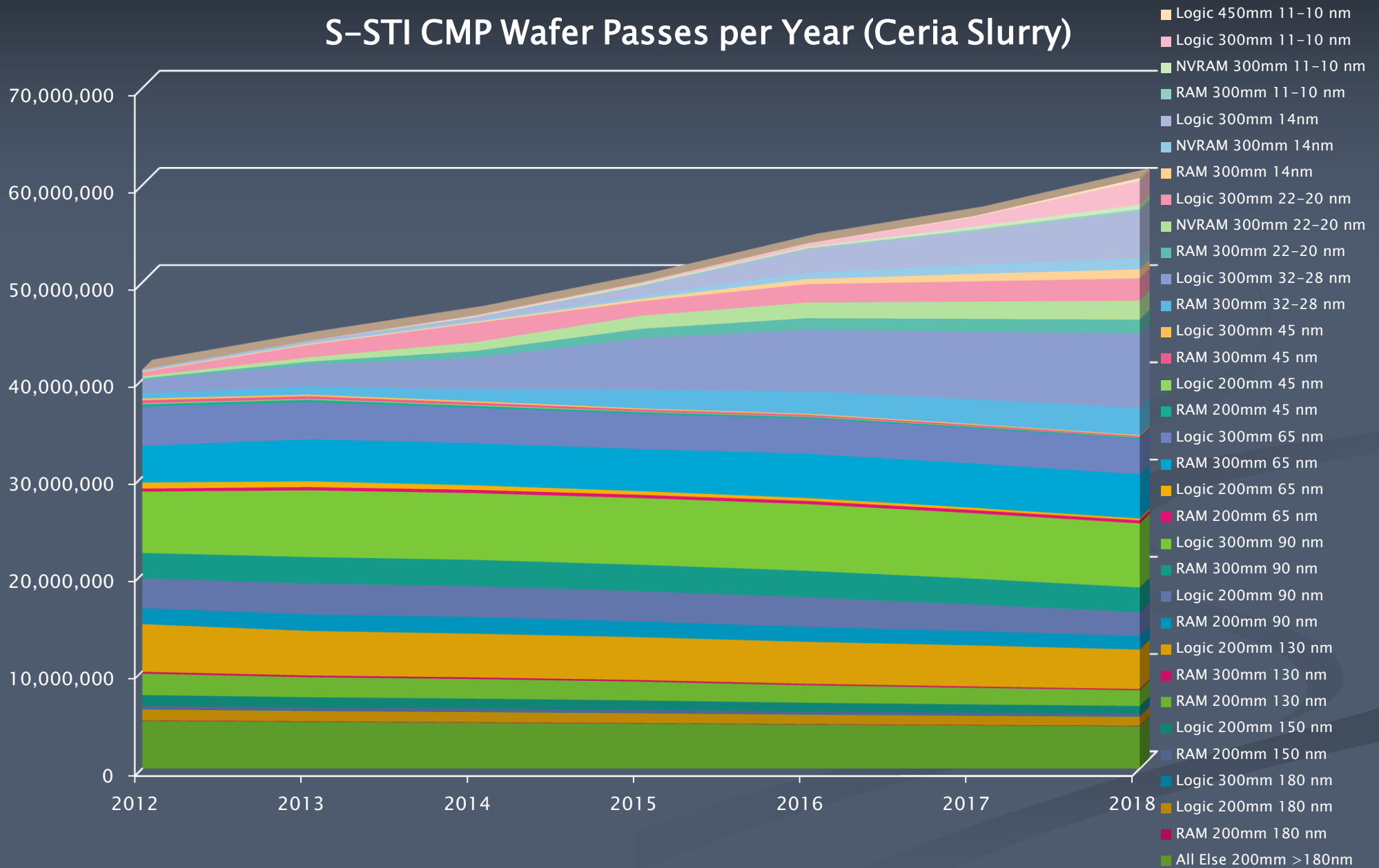


***NOT
Dead***



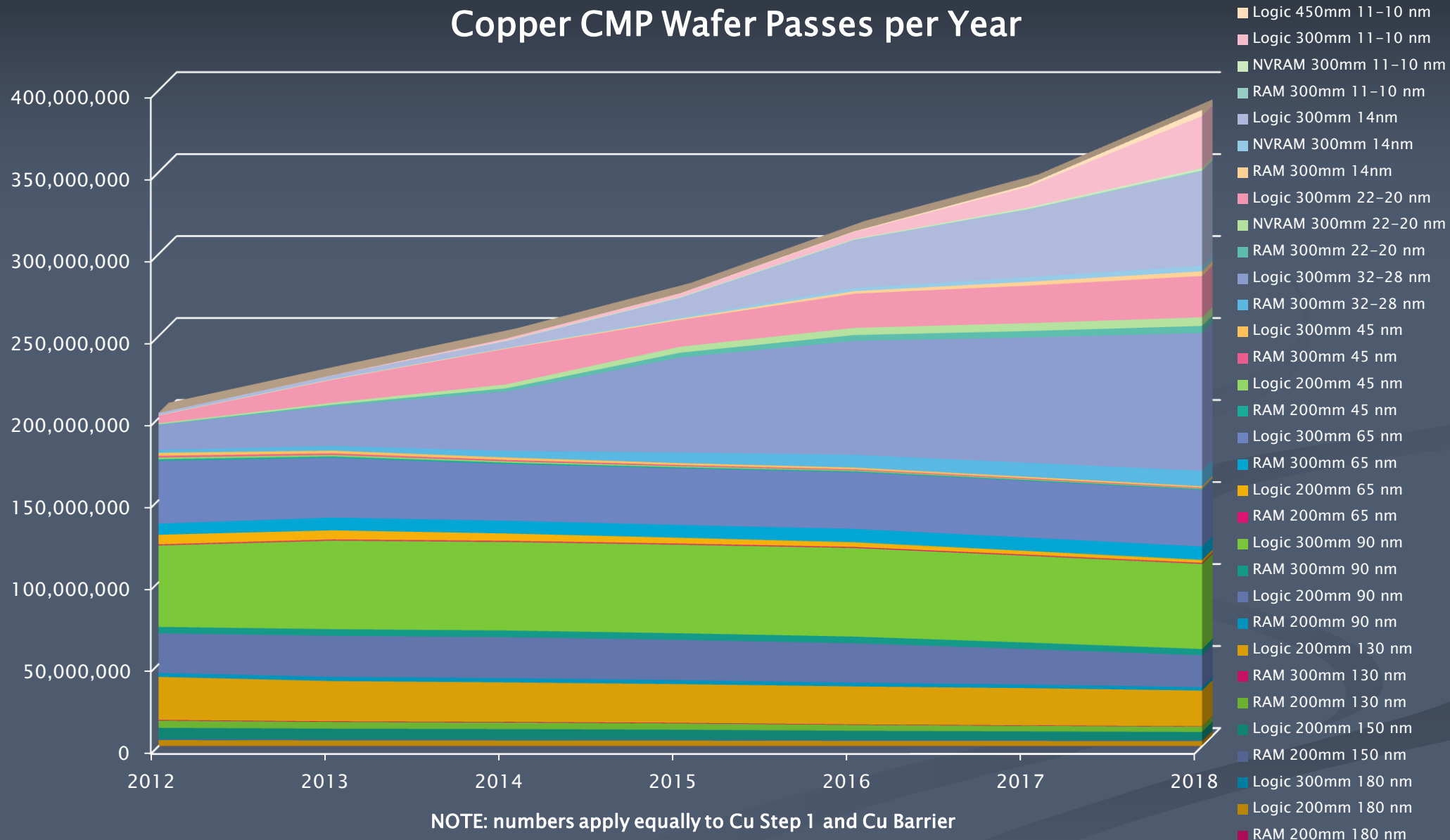
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S-STI CMP Wafer Passes per Year (Ceria Slurry)



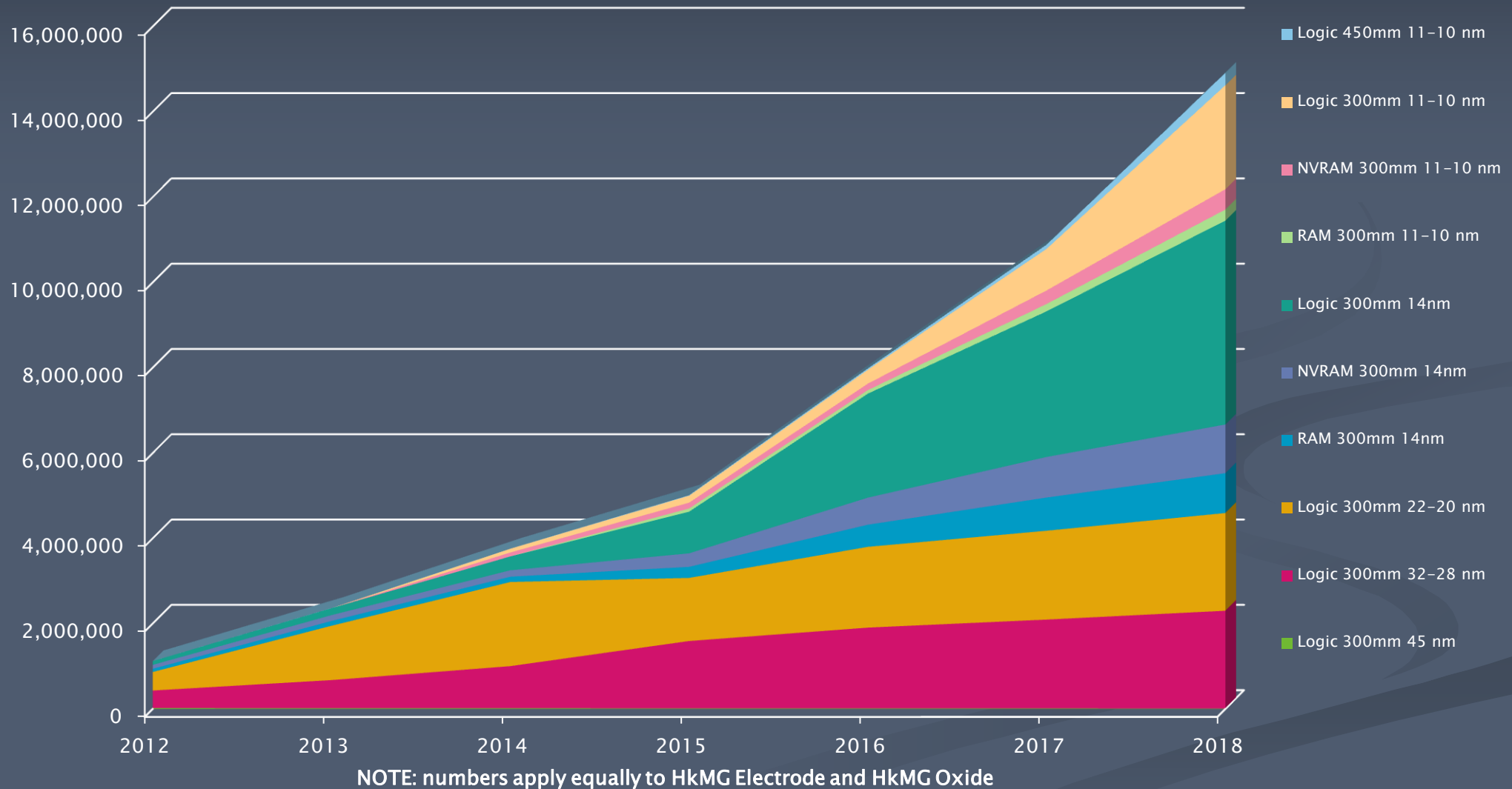
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Copper CMP Wafer Passes per Year



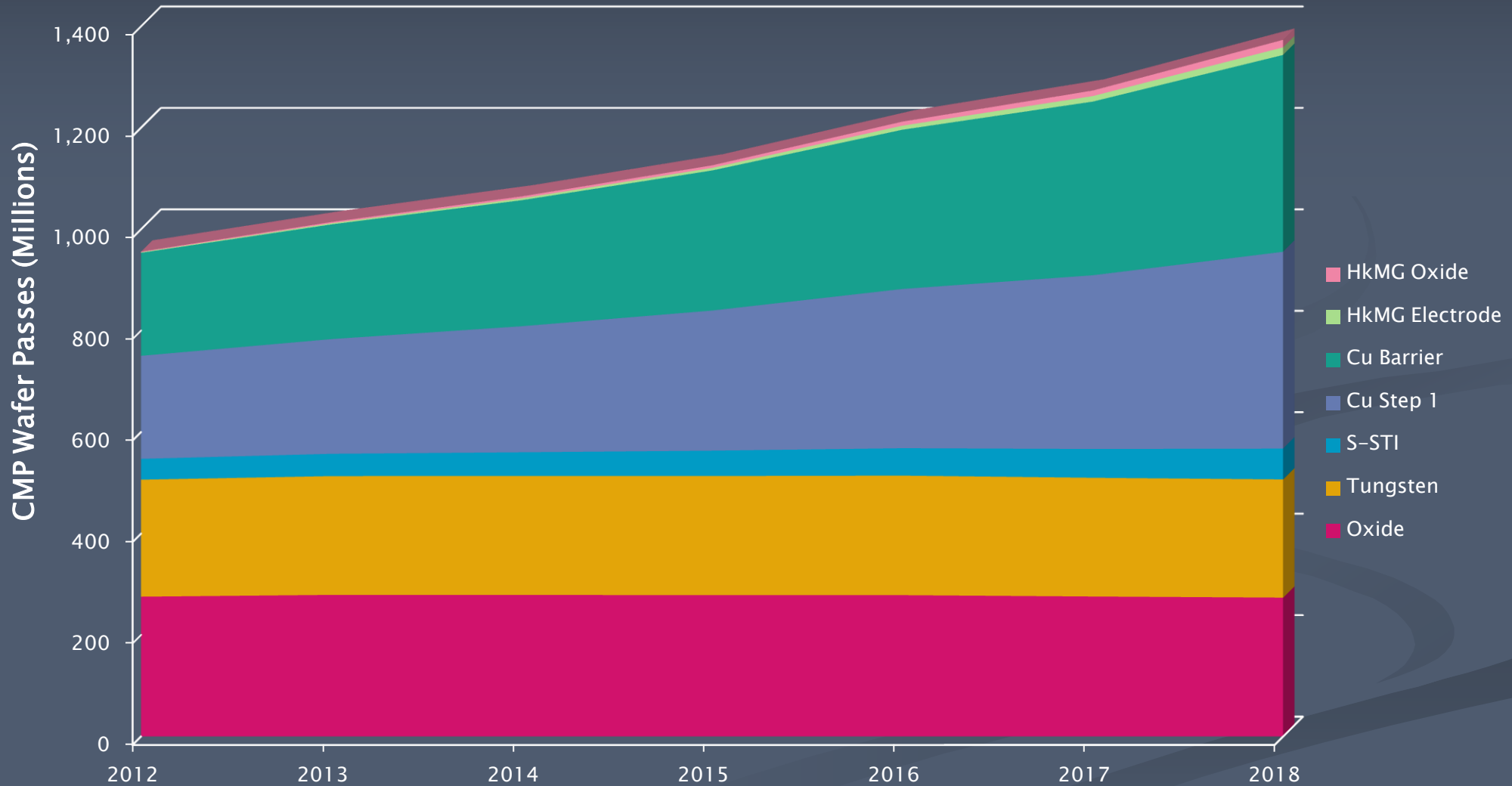
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HkMG CMP Wafer Passes per Year



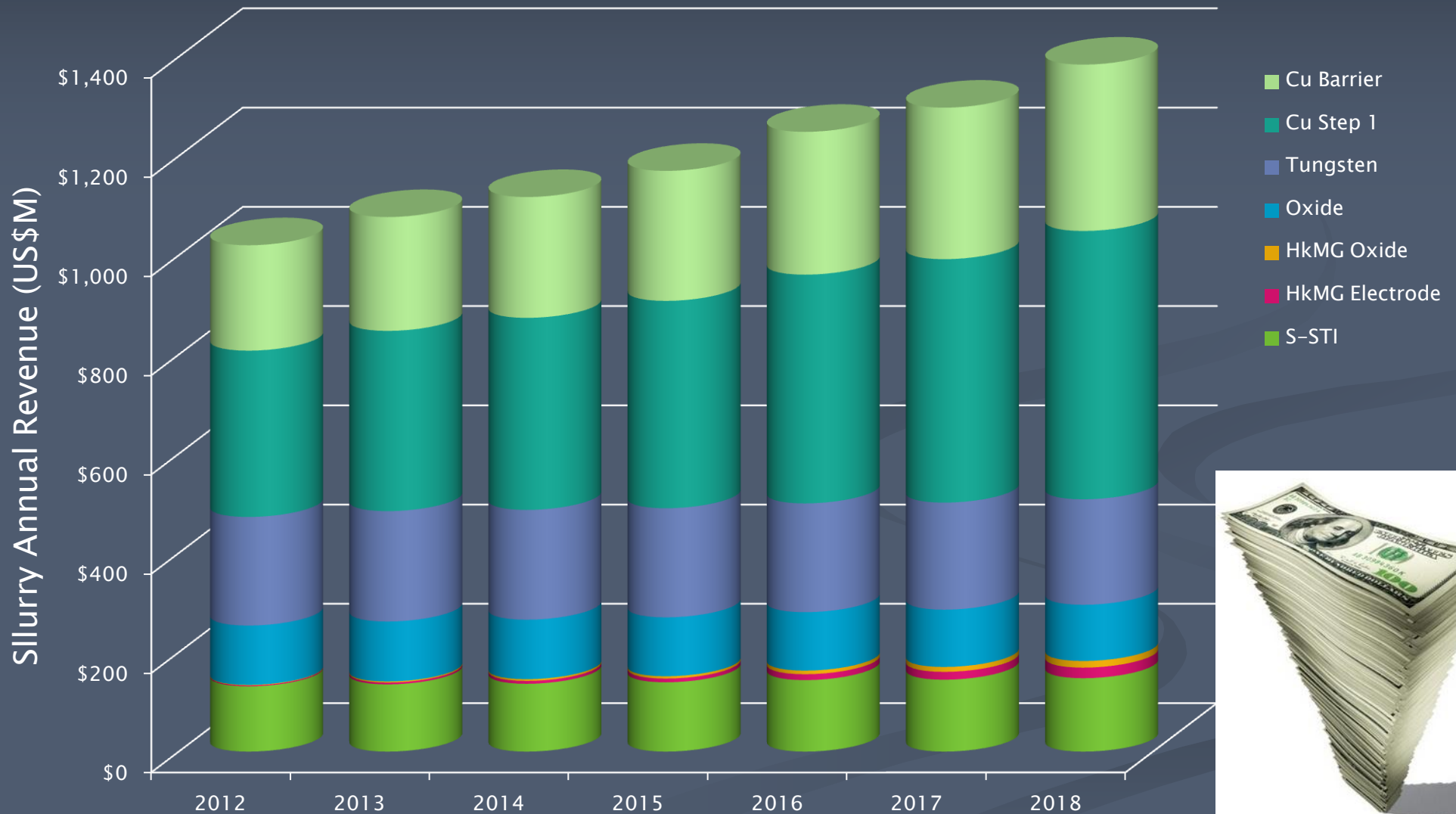
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Total CMP Wafer Passes per Year



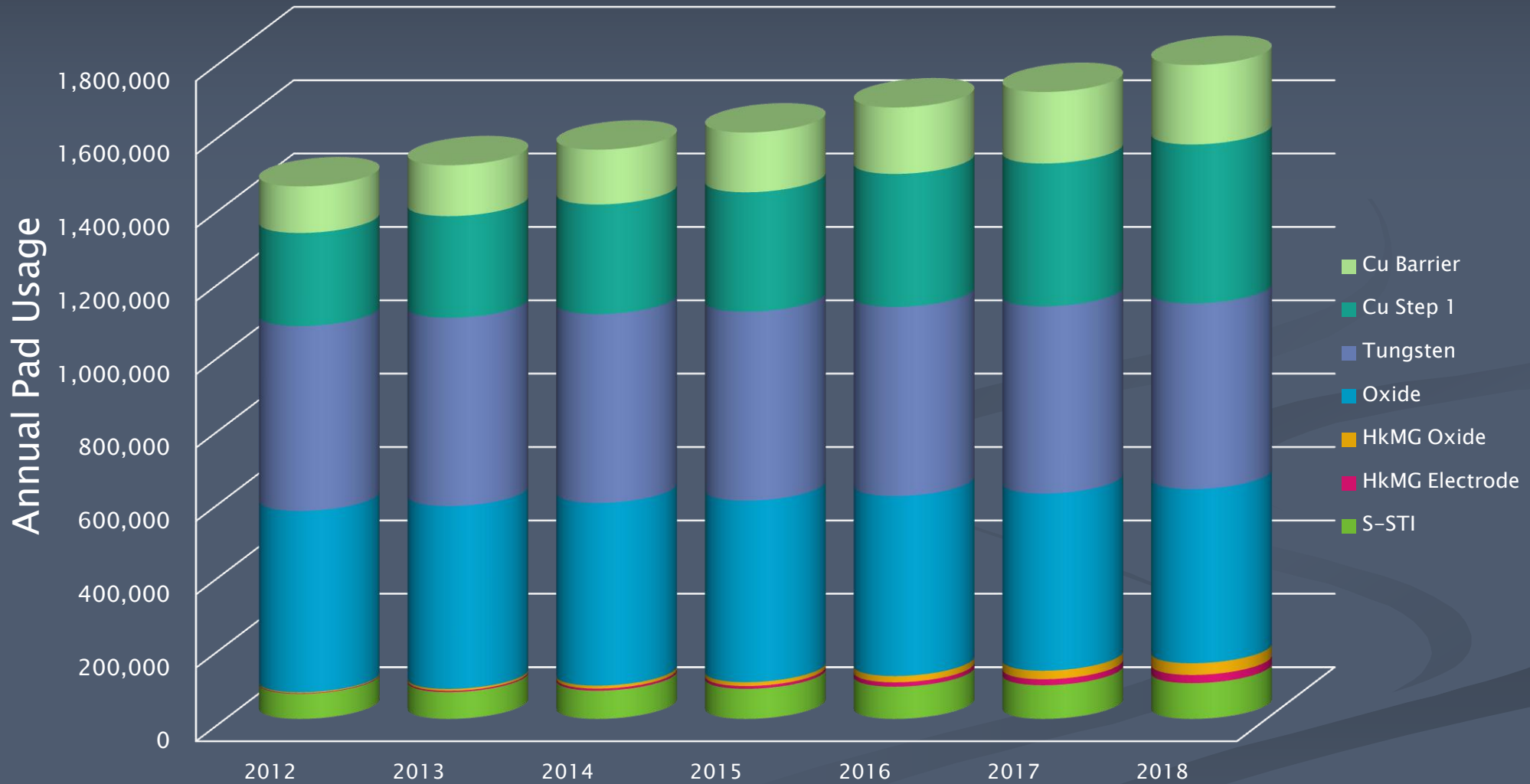
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Slurry Revenue



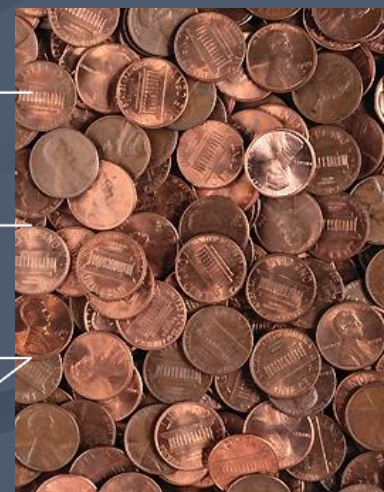
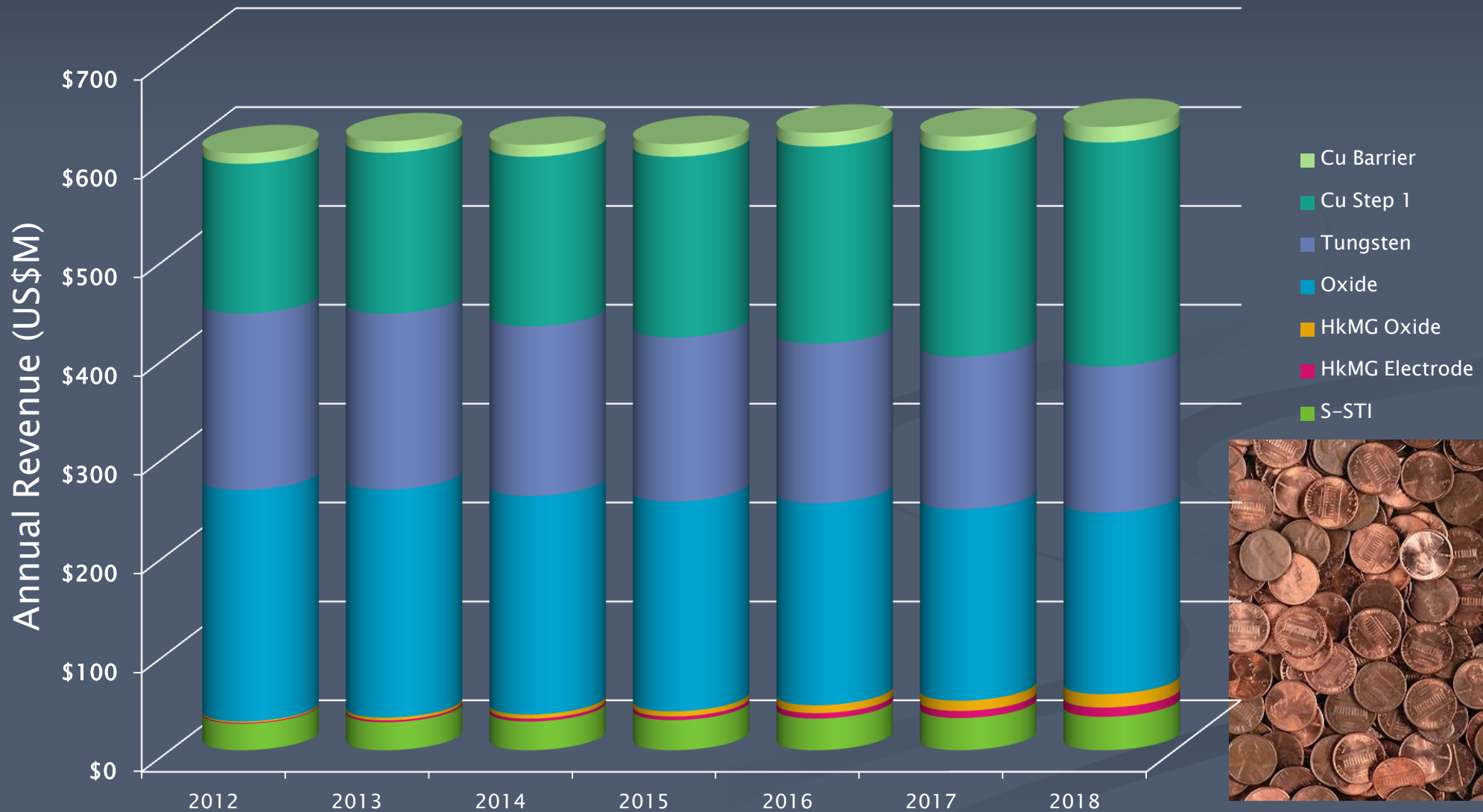
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Number of CMP Pads Used by Application



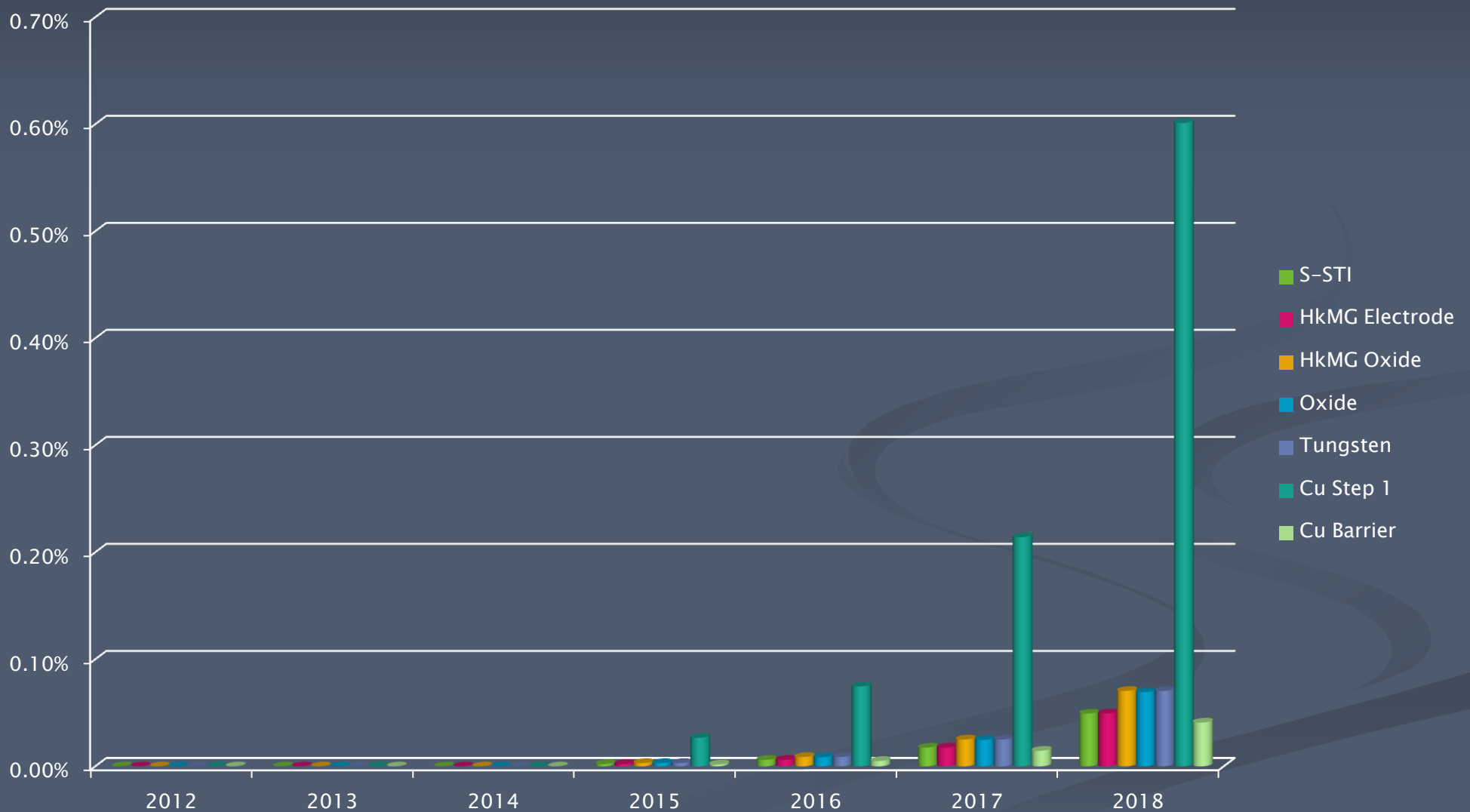
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Pad Revenue



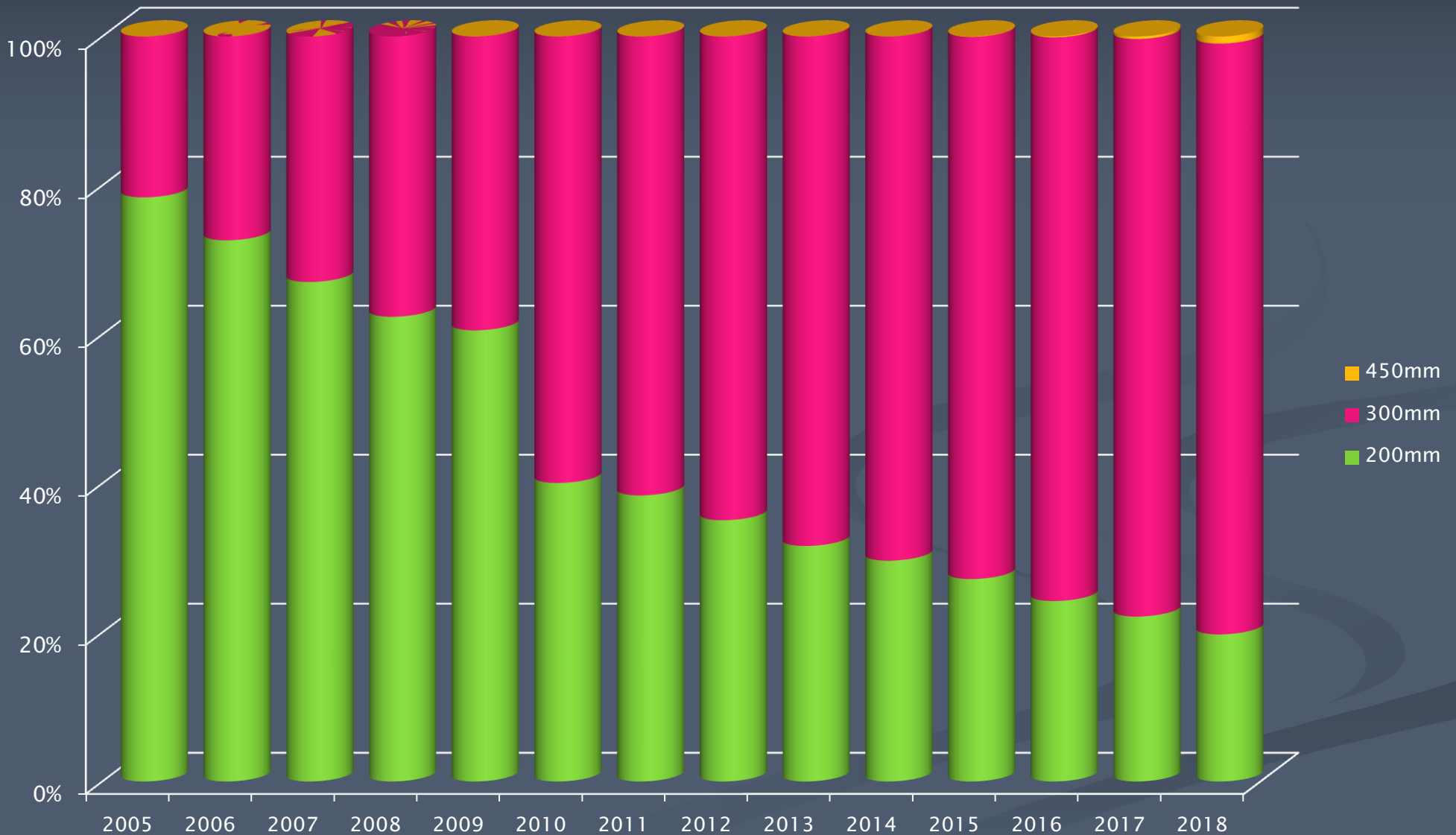
The Business of CMP

% 450mm Pad Revenue by Process



The Business of CMP

% Pad Revenue by Wafer Size



The Business of CMP

% Pad Revenue by Wafer Size



Wrap Up

- * Steady revenue with low/no growth
 - ✦ Oxide slurry for $>32\text{nm}$
 - ✦ Tungsten slurry
 - ✦ CMP pads overall
- * These businesses are neither small nor dead



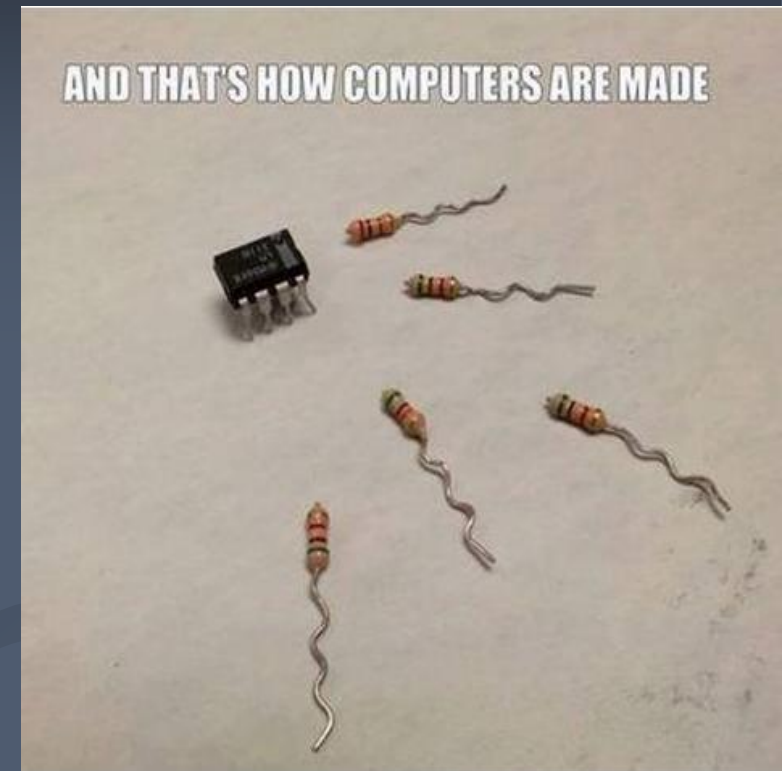
Wrap Up

* Technology drivers

- ✦ NVRAM
- ✦ Sub-20nm device structures
- ✦ 450mm

* Beneficiaries

- ✦ Slurries for HkMG & new structures
 - ✦ *Single pass, thin films, low volumes*
- ✦ Oxide slurry for $\leq 32\text{nm}$
- ✦ Pads for 450mm



The Techcet Group, LLC

Techcet Partners

Karey Holland, Ph.D.

Lita Shon-Roy

John Housley

Steven Holland, Ph.D.

Technology & Market Analysts

Katherine Derbyshire

Gerald B. Elder, Ph.D.

Paul M. Feeney

Michael Fury, Ph.D.

Jiro Hanaue

Maggie Lee

Gary Ray, Ph.D.

Larry Thompson, Ph.D.

Allan Wiesnoski



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✧ CMP Consumables Report

- ✧ Available by individual consumable
- ✧ Some content available by the page

✧ Lita Shon-Roy

- ✧ 480-336-2160 orders
- ✧ 480-275-3101 fax orders
- ✧ LShonRoy@Techcet.com
- ✧ www.Techcet.com

