

# TestConX 中国

China™

October 29, 2019

InterContinental Shanghai Pudong Hotel

# Archive

## Getting Ready for the Next Wave of Growth

**Hanning Shi**  
**VLSI Research**



**Shanghai • October 29, 2019**

**VLSIresearch**

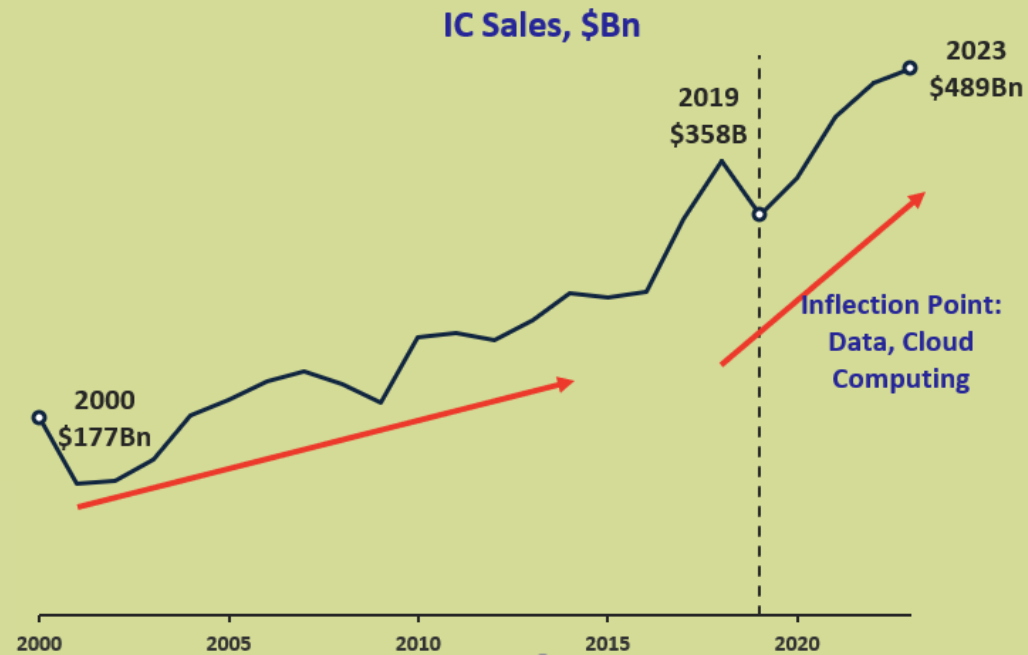
**The next wave of growth has already started...**



Getting Ready for the Next Wave of Growth

**2019**

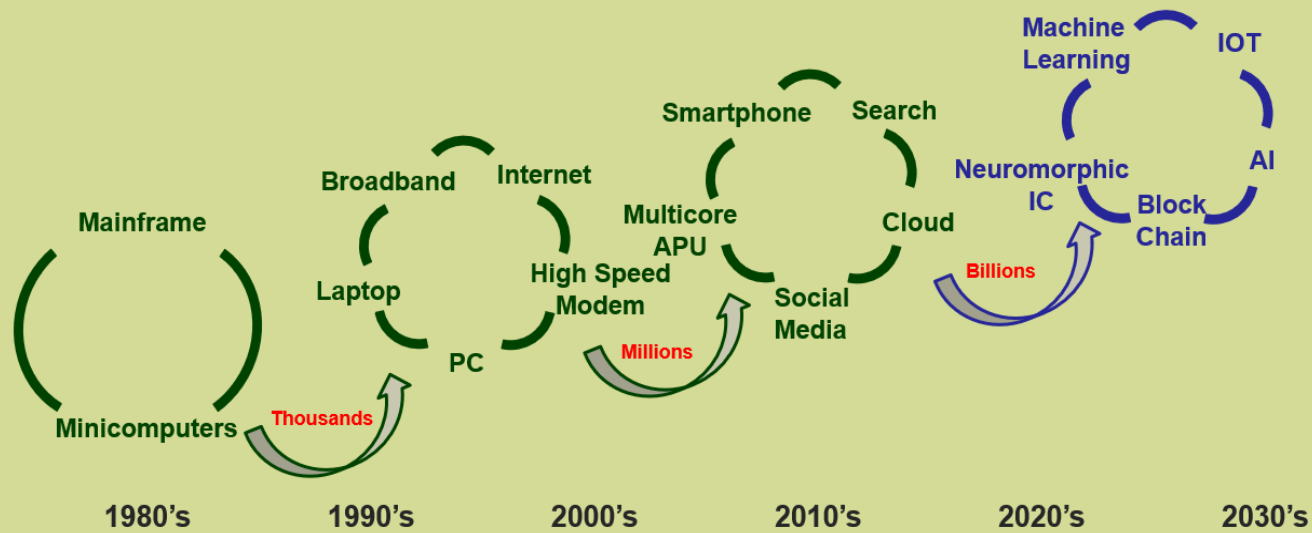
## Here is the data to back it up



Getting Ready for the Next Wave of Growth

# 2019

## But this new wave is different to the previous three



From hundreds to billions...

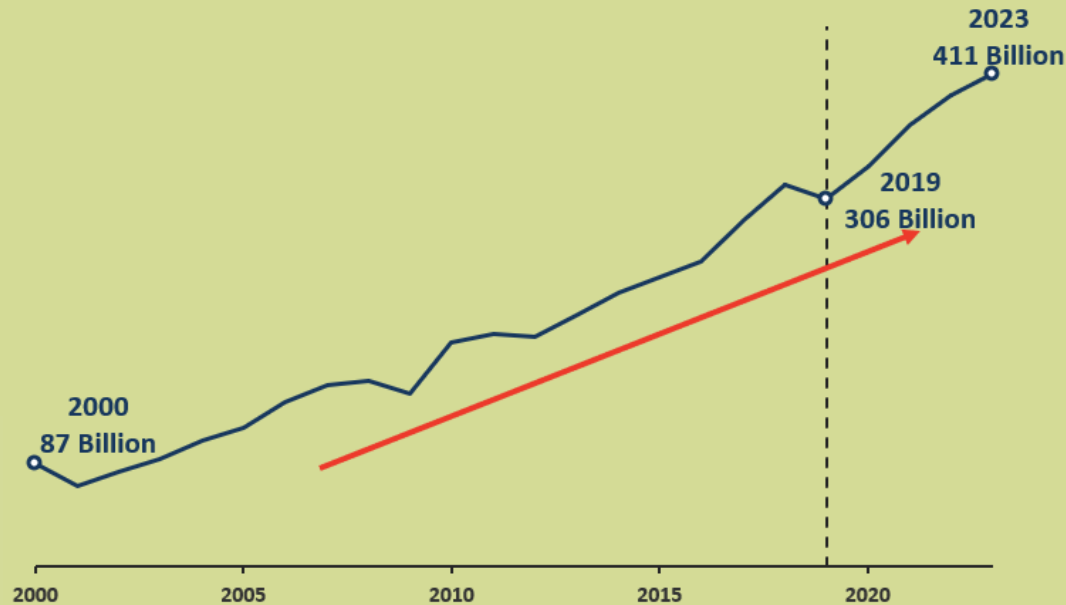


Getting Ready for the Next Wave of Growth

# 2019

## Complexity increasing which means that units becoming more valuable

IC Units, Billions of units



Getting Ready for the Next Wave of Growth

2019

Are you ready?



Getting Ready for the Next Wave of Growth

2019

## The Main Problem for the industry

Moore's Law is slowing which means...

- 2D shrinks more difficult
- New architectures and devices required
- New materials
- Advanced packaging technology

This is driving structural change within the industry  
so the industry has to innovate



Getting Ready for the Next Wave of Growth

2019



## What this means for you...

### This breaks down into three fundamental areas

- Product
- Capacity
- Sales strategies



Getting Ready for the Next Wave of Growth

2019

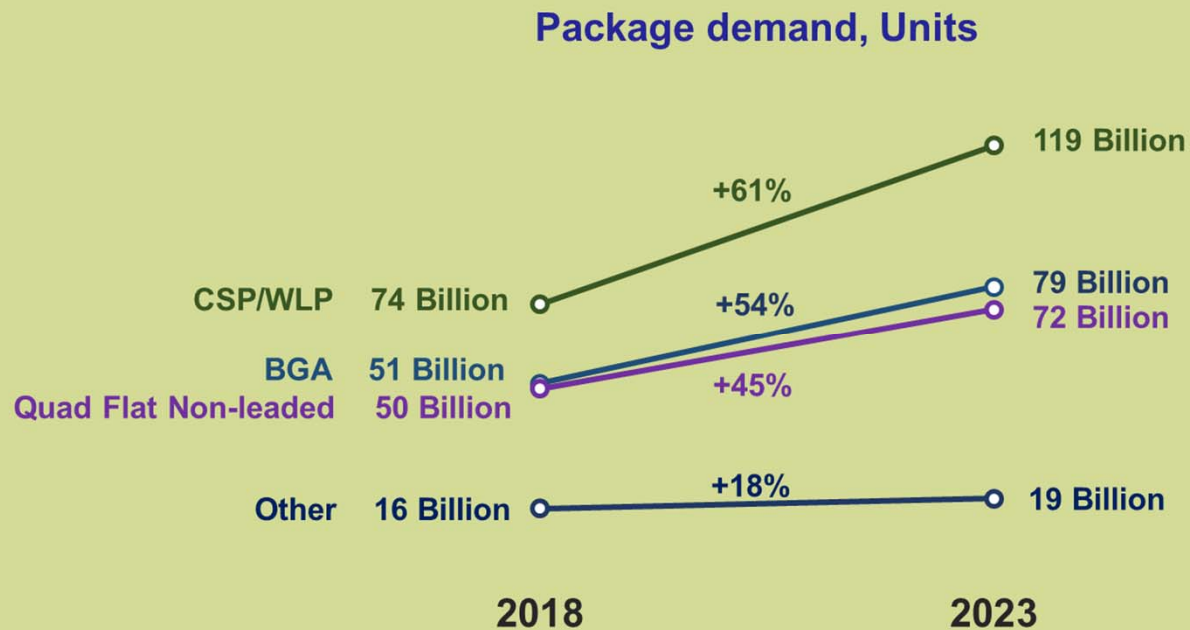
## Product

- In the future there will be more of all socket types, but the trend will be for...

Larger sockets: more pins / higher pin density

High performance pins: higher frequencies, higher power, wider temperature ranges, etc

## Chip Carriers the fastest growing package types

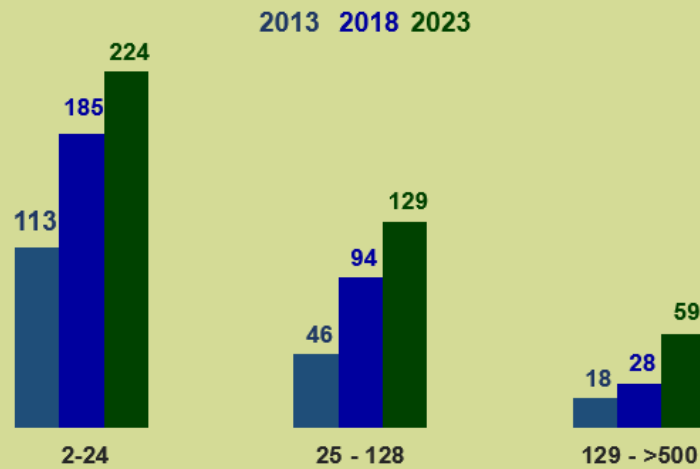


## Capacity

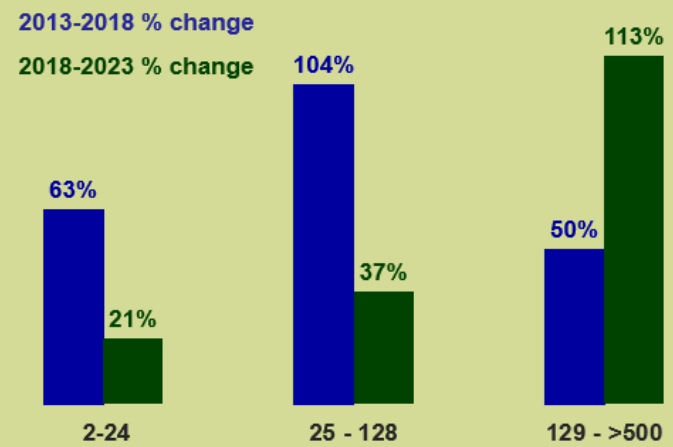
- Capacity:
  - Some segments growing rapidly
  - Manufacturing technologies: materials, methods

## Capacity requirements – are you going to run out?

Package demand by lead count, Billions of Units



Package demand percentage change



Getting Ready for the Next Wave of Growth

2019

## A bit of inside information about the capacity

- Chipmakers are concerned there is a gap emerging between what they need and what the industry can deliver

## Sales Strategy:

If you don't align your sales strategies with the changing environment, you will lose customers

- Customers:
  - are on the move
  - priorities are changing
- Competitive landscape:
  - It's changing
  - Suppliers are getting smarter



Getting Ready for the Next Wave of Growth

2019

## Solutions: How to use data to plan future growth



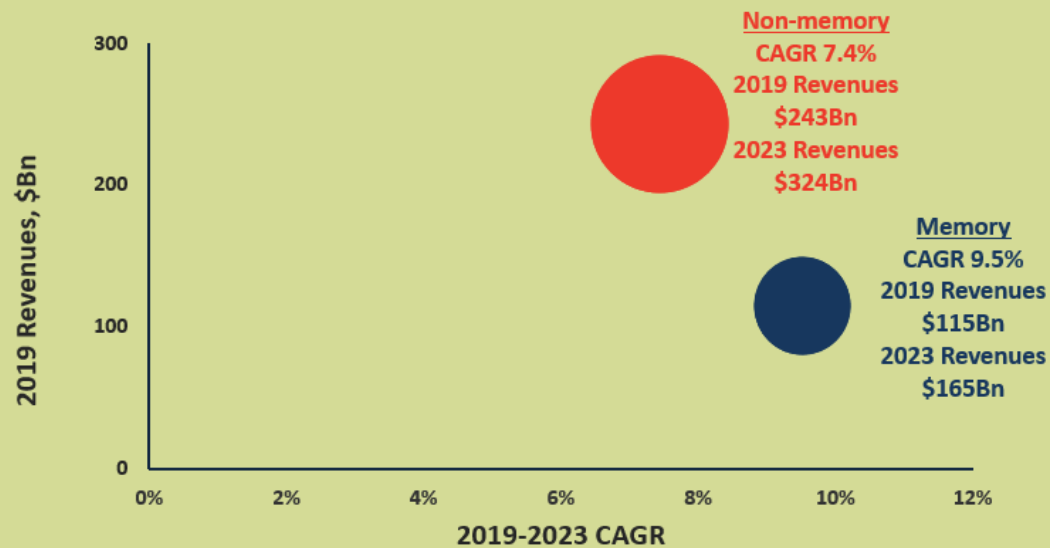
Getting Ready for the Next Wave of Growth

2019



## Product Solutions: Opportunities in both memory and non-memory

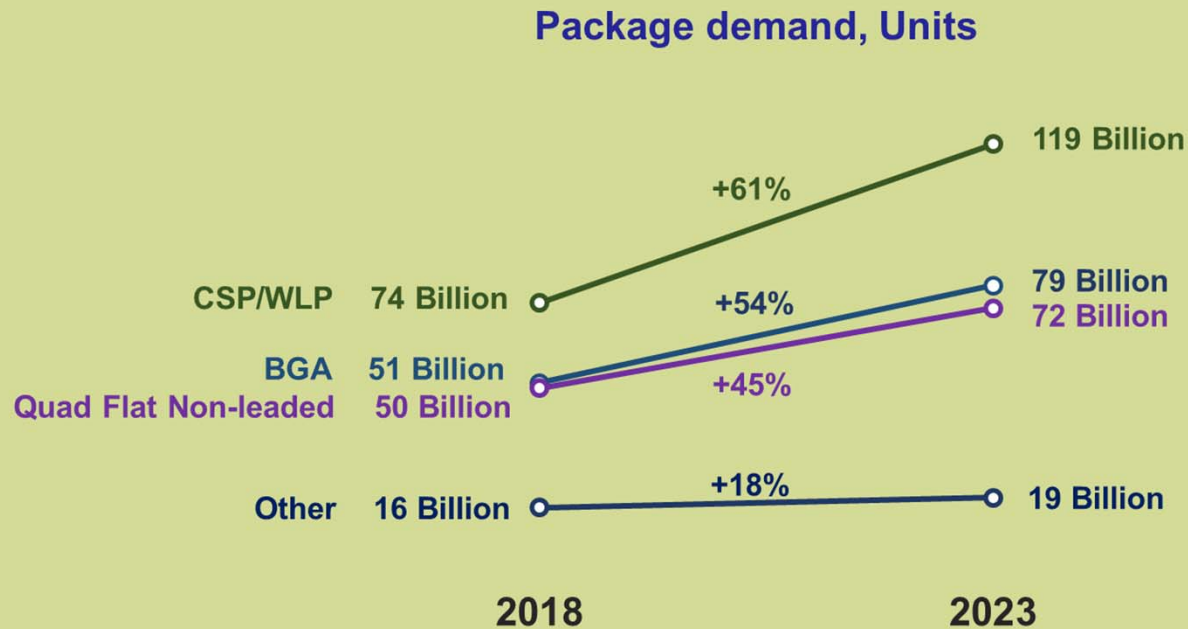
Memory and Non-memory revenue growth 2019 - 2023



Getting Ready for the Next Wave of Growth

2019

## Chip Carriers the fastest growing package types

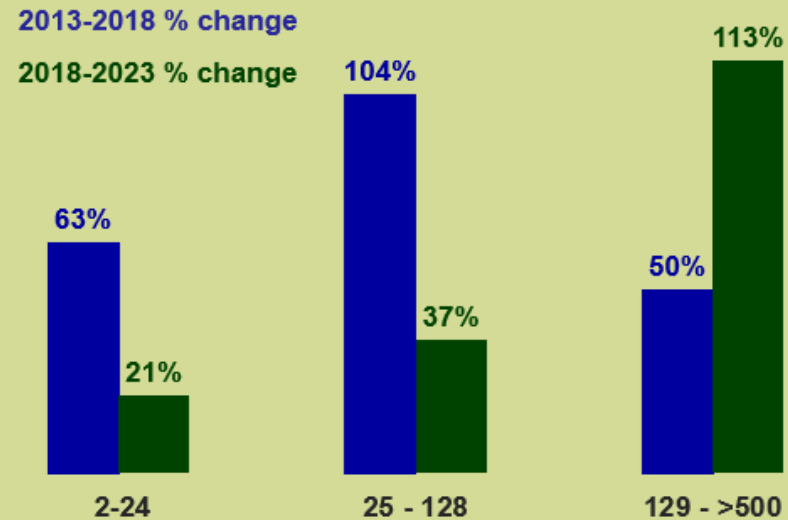


Getting Ready for the Next Wave of Growth

# 2019

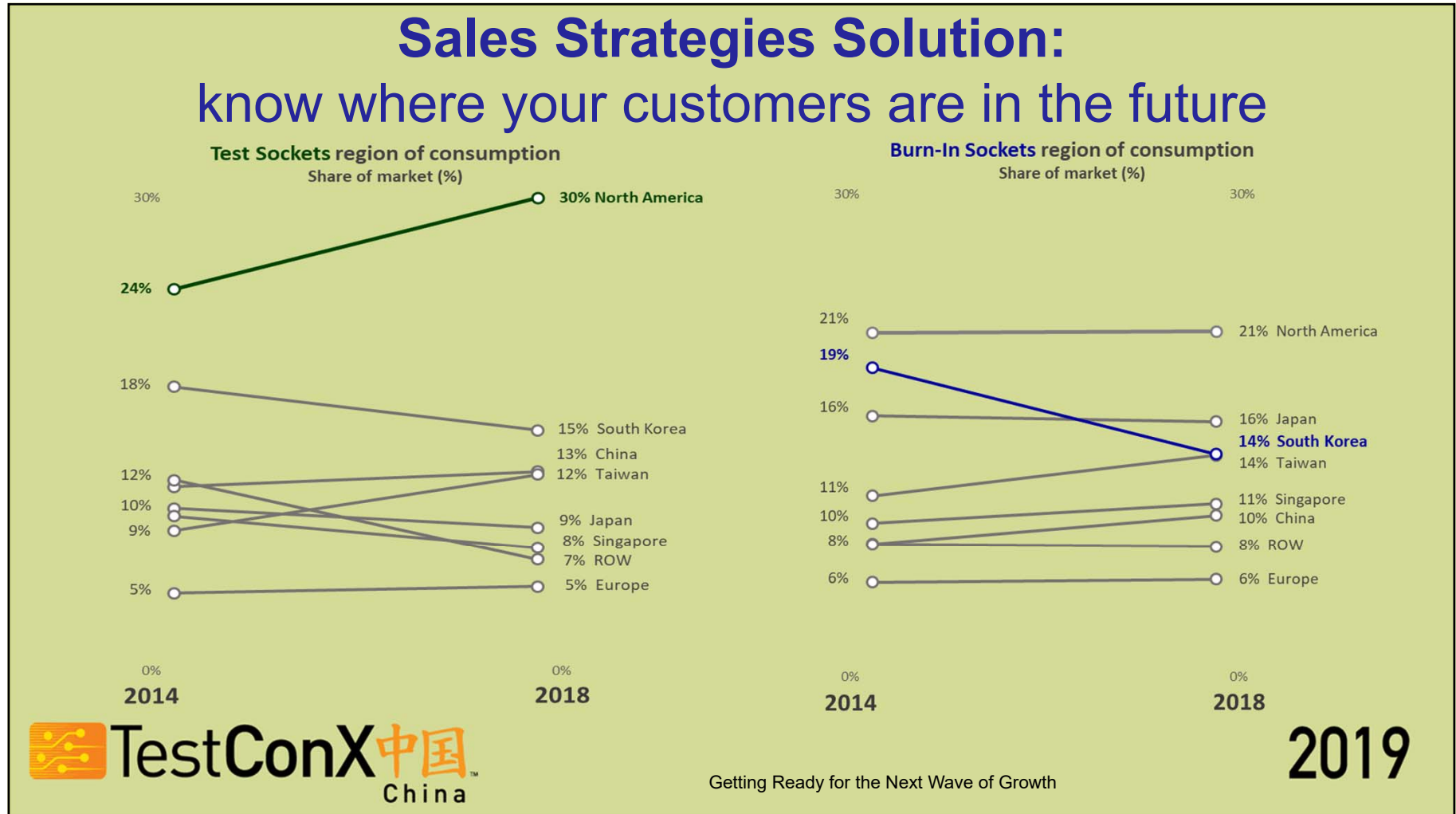
## Capacity Solutions: You need to invest now

Package demand percentage change



Getting Ready for the Next Wave of Growth

2019



## Sales Strategies Solution: gain a deep understanding of customers' pain... it's not just price

### Burn-in socket price decline is stifling growth

Cost per pin over last 10 years (rebased to 2009)



Getting Ready for the Next Wave of Growth

# 2019

## So what happens next?

- To succeed you need to understand
  - What products are required
  - Which manufacturing technologies to invest in
  - How your customers priorities are changing

And to do this effectively you need data and the stories behind the data so that you can be more solid in the discussions that are sure to come in this new wave of growth



Getting Ready for the Next Wave of Growth

# 2019

# COPYRIGHT NOTICE

The presentation(s)/poster(s) in this publication comprise the Proceedings of the 2019 TestConX China workshop. The content reflects the opinion of the authors and their respective companies. They are reproduced here as they were presented at the 2019 TestConX China workshop. This version of the presentation or poster may differ from the version that was distributed in hardcopy & softcopy form at the 2019 TestConX China workshop. The inclusion of the presentations/posters in this publication does not constitute an endorsement by TestConX or the workshop's sponsors.

There is NO copyright protection claimed on the presentation/poster content by TestConX. However, each presentation/poster is the work of the authors and their respective companies: as such, it is strongly encouraged that any use reflect proper acknowledgement to the appropriate source. Any questions regarding the use of any materials presented should be directed to the author(s) or their companies.

The TestConX China logo and TestConX logo are trademarks of TestConX. All rights reserved.

**[www.TestConX.org](http://www.TestConX.org)**