



# CONNECTIVITY

**Enabling new functions & designs**

Henkel Investor & Analyst Day 2019

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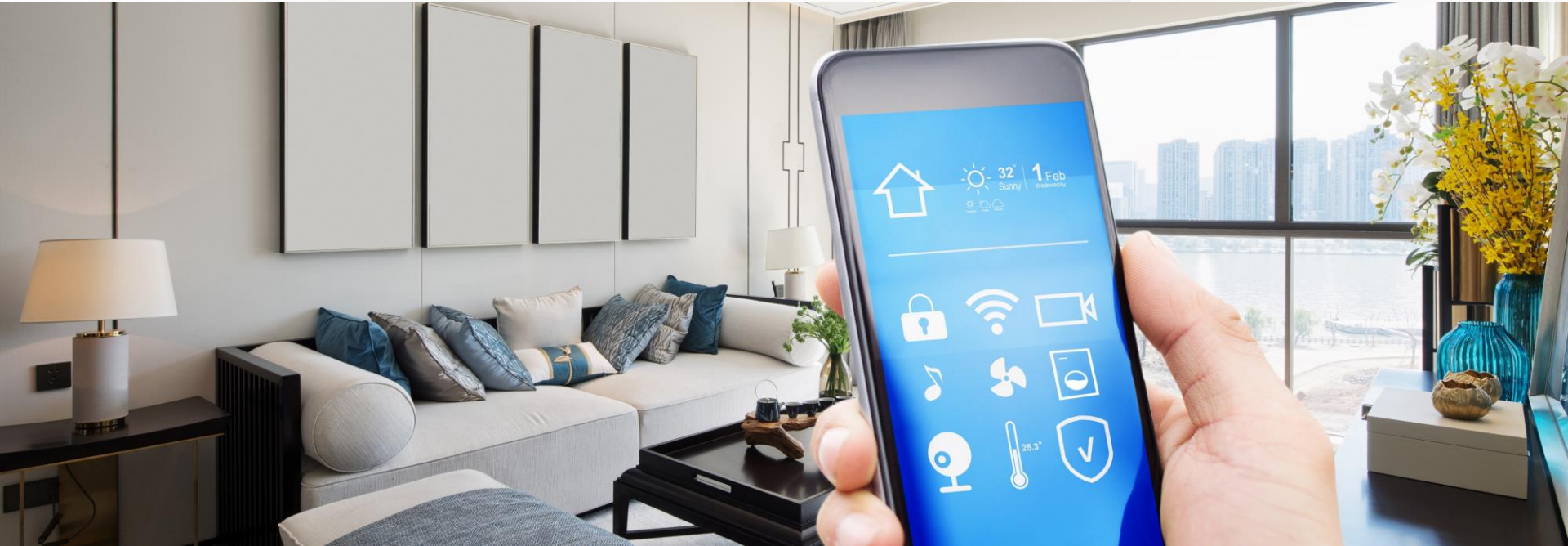
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# Connectivity: the internet of things



# Up to today: fun and convenience





# Starting now: dependence and safety





An aerial night view of a city skyline, likely New York City, featuring prominent skyscrapers like the Empire State Building and One World Trade Center. The city is illuminated with warm lights, and a network of white lines with glowing nodes is overlaid on the image, symbolizing connectivity. A white rectangular box is positioned in the upper left corner, containing the text "The fully connected future!".

The fully connected future!





The fully connected future!

THE INFLECTION POINT IS NOW!





# The fully connected future!

SIGNIFICANT INCREMENTAL MARKET OPPORTUNITY

HIGHLY PROFITABLE WITH >10% CAGR TO 2025



# Realizing the connected future

**Smart devices**



**Infrastructure**

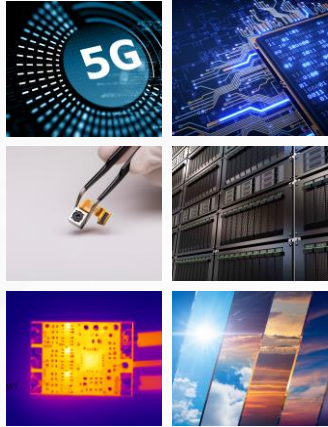


**Storage & processing**



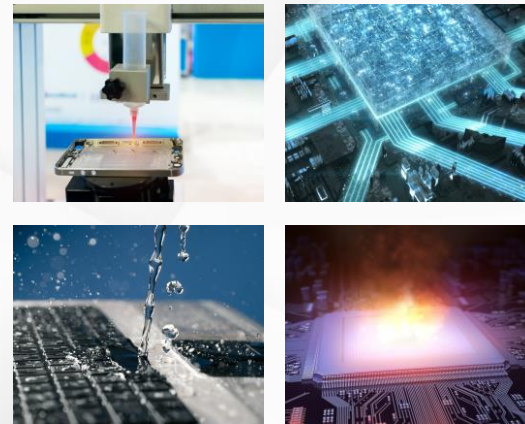
# Henkel: enabling the connectivity evolution

## Challenges



- High data speeds
- High processing speeds
- Miniaturization
- High density
- Heat dissipation
- Reliability

## Our solutions







- Bonding
- Connecting
- Protecting
- Thermal management

**> Material solutions & know-how to help create the connected future**



# Smart devices: autonomous connectivity



30 billion connected devices today, growing to 75 billion by 2025

Challenges	Our position & solutions	Sample enabling solution
 High data speeds	#1 in mobile phone assembly Increasing applications in mobile and expanding to other devices	Shielding solutions for device antenna modules
 Miniaturization	New material solutions for: <ul style="list-style-type: none"><li>▪ Interference shielding</li><li>▪ High-precision bonding</li><li>▪ Ruggedization</li></ul>	
 Reliability		

**> Expanding leading position in mobile phones and growing with smart devices**

# Infrastructure: ubiquitous connectivity

20 million 5G cells by 2025, enabling 100x faster cellular communication

Challenges	Our position & solutions	Sample enabling solution
 High data speeds	5G creates new challenges, requiring high-impact solutions	Thermal management materials for 5G base station
 Heat dissipation	Joint development with major infrastructure suppliers	
 Reliability	High value solutions for: <ul style="list-style-type: none"><li>■ Data transmission efficiency</li><li>■ Thermal management</li><li>■ Protection</li></ul>	

➤ **Solving 5G challenges to build a strong position for growth with infrastructure**



# Storage & processing: big data in an instance

By 2025, equivalent of 200 million DVDs of data is generated daily

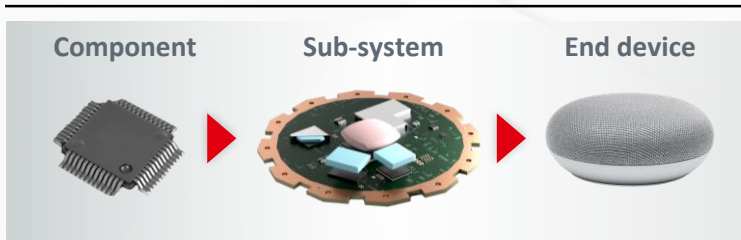
Challenges	Our position & solutions	Sample enabling solution
 High processing speeds	Shaping the future of storage by co-creating new designs	
 High density	Joint development with storage & processing market leaders	
 Heat dissipation	Novel material solutions for: <ul style="list-style-type: none"><li>▪ Multi-layer memory</li><li>▪ High-precision assembly</li><li>▪ Thermal management</li></ul>	

**> Innovating on new solutions with market leaders to grow with storage & processing**

# Unique market insight & focused innovation

Our competitive advantage

## Deep and broad market coverage



- Only specialty solutions supplier to serve the whole assembly value chain
- Unparalleled view of entire market

## Translating insight into solutions through innovation



- Unmatched application know-how and engineering capabilities
- Leveraging broadest technology portfolio in the industry for targeted solutions

➤ **Able to predict and respond to industry trends with focused innovation**



# Long-standing partnerships

Our competitive advantage

- Over 30 years of cultivated customer partnerships
- Engaged with industry leaders across smart devices, infrastructure, and storage & processing
- Established reputation as a reliable and collaborative material solutions provider



**➤ Partner of choice for connectivity pioneers seeking material solutions**



WE ARE THE SOLUTION PROVIDER  
FOR THE CONNECTED FUTURE

PARTNERED WITH INDUSTRY LEADERS

INNOVATING TO SOLVE THE CHALLENGES