



# VOICE ANALYTICS IN CUSTOMER SERVICE

Mobile Voice Conference 2014 - Dr. Joachim Stegmann, Deutsche Telekom AG



LIFE IS FOR SHARING.

# THE WORLD IS CHANGING

## CHANGED CUSTOMER BEHAVIOUR & EXPECTATIONS



Customers now have **unlimited access to information** and **can instantly share it**.



Social networking and mobile commerce have dramatically changed **the dynamic between customer and provider**.



**Customers expectations** for service, price, and delivery are growing.



Impacts the way products and services are sourced and distributed – making business **more complex than ever**.



**Customers have moved to a position of power that has strongly changed the relationship they have with our business.**

# CUSTOMER SERVICE FACES NEW CHALLENGES

## BIG DATA ANALYSIS CAN PAY OFF

### CHANGING CUSTOMER EXPECTATIONS ...

make an impact on customer service. It would be naive to believe in customer's loyalty.

### BIG DATA ANALYSIS ...

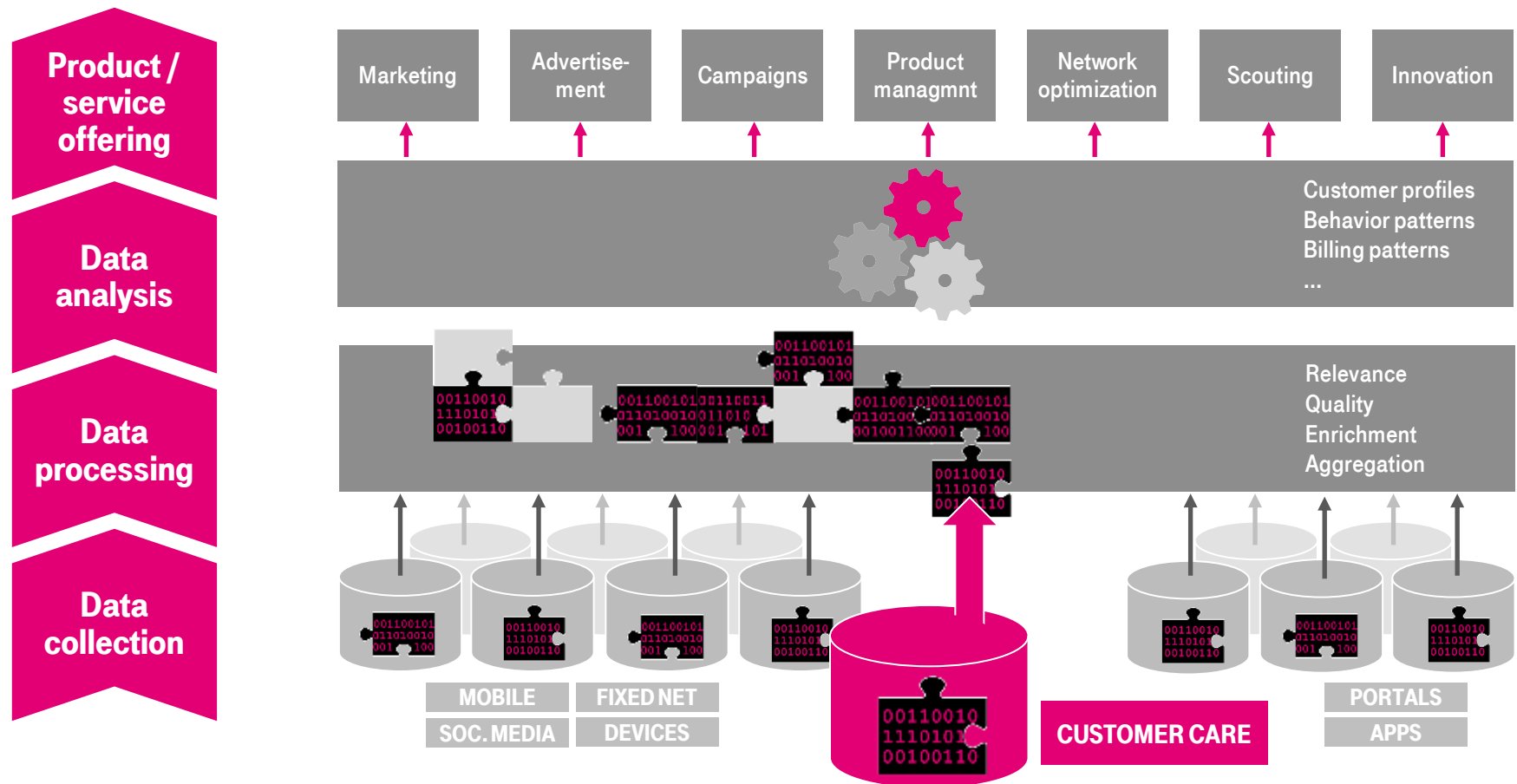
can help

- to recognize and monitor these changes and
- to make the right decisions to stay in business.



# TELEKOM'S BIG DATA VALUE CHAIN

## CUSTOMER CARE WITH SUBSTANTIAL DATA PROPORTION



# BIG DATA ANALYSIS IN CUSTOMER SERVICE

## WHAT SOURCES DO WE HAVE?

### TYPICAL DATA GENERATED BY CUSTOMER SERVICE

account data, call volume, call handling time, recurring calls, customer complaints, first contact resolution rate, customer satisfaction, ...

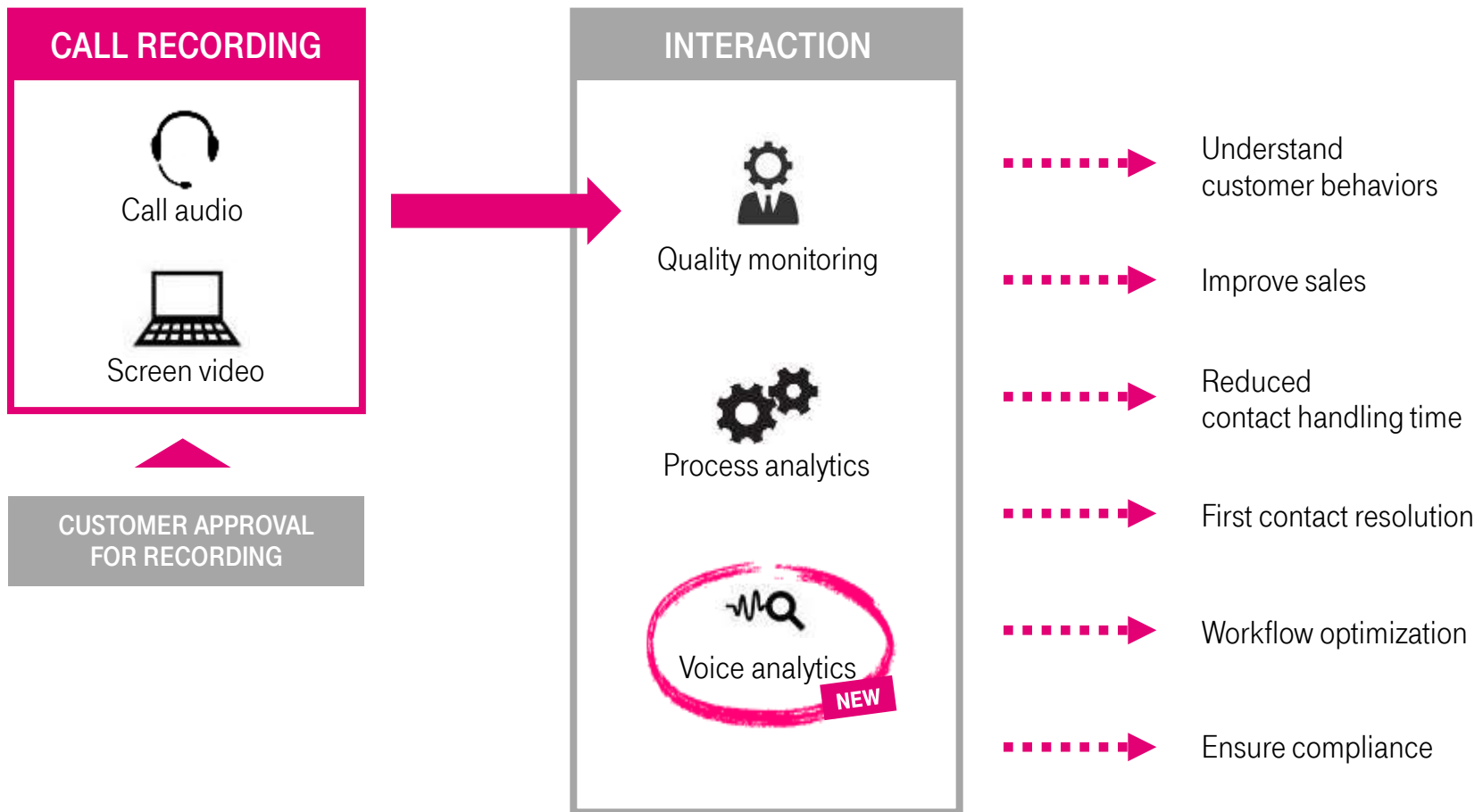
### ARE THEY APPLICABLE ...

- to administrate customers? **YES!**
- to classify customers? **YES!**
- to analyze trends? **LIMITED!**
- to recognize short-term abnormalities of critical importance? **VERY LIMITED!**
- to understand and track the customer's journey? **VERY LIMITED!**

... BUT THERE IS ADDITIONAL INFORMATION AVAILABLE.

# RECORDING OF CUSTOMER-AGENT CONVERSATIONS

## A KEY PILLAR OF QUALITY MANAGEMENT



# A LOT OF INFORMATION HAS TO BE ANALYZED

## SOME FACTS\*



**83 million** operator-assisted customer contacts per year



**70 m** calls per year

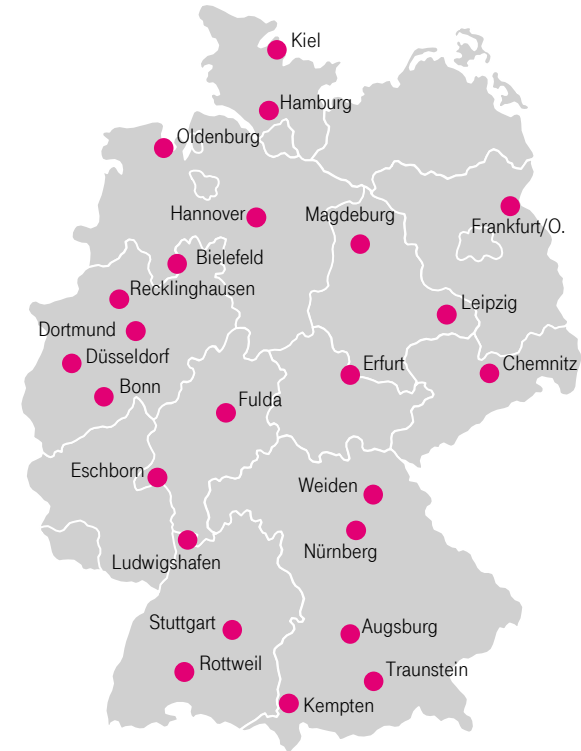


**13 m** letters/ faxes/ emails per year

DT customers in Germany:

**22.1 million**  
customers in fixed line

**36.6 million**  
mobile customers



**33** call center locations in Germany,  
more than 16,000 agents

\*Germany only



# VOICE ANALYTICS IN CUSTOMER SERVICE ALREADY IN SERVICE

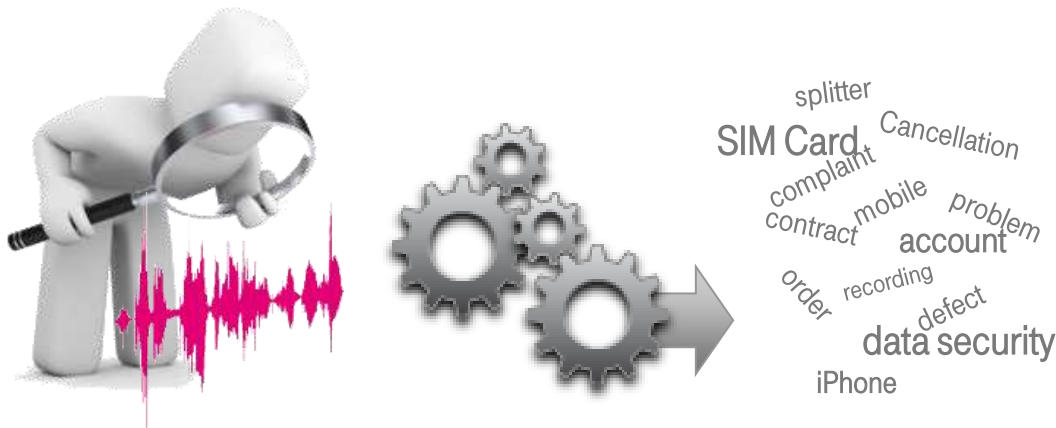
## KEYWORD SPOTTING

Started in 2012 as part of DT's process performance management for quality monitoring and process optimization.

Thousands\* of recorded customer dialogues (voice and agent's screen) available.

Ensures a neutral analysis based on standard criteria.

### Keyword spotting based on voice stream



\*Due to data-protection considerations, recordings are stored for only a short period



# VOICE ANALYTICS IN CUSTOMER SERVICE

## PROCESS PERFORMANCE MANAGEMENT (EXAMPLE)

**SUCCESS STORY**  
POWERED BY USE OF  
VOICE ANALYTICS

### INDICATION FOR IRREGULARITIES!

**Around 30,000 duplicates of invoices per month requested – but why?**



### ANALYSIS BASED ON ASSUMPTION'S DESCRIPTION

Several analysis jobs performed and voice of the customer analyzed.

### CAUSE IDENTIFIED, SUBJECT SUCCESSFULLY COMPLETED

Forced migration to „Invoice Online“ identified as driver for re-order of paper invoices (Migration was only announced in an supplement to the invoice and ignored by the customer)

# VOICE ANALYTICS IN CUSTOMER SERVICE

## LESSONS LEARNED

### DISADVANTAGES OF KEYWORD SPOTTING USE

Creating a keyword list requires detailed knowledge of terminology used by customers.

Parameter settings for analysis jobs are a potential source of error.

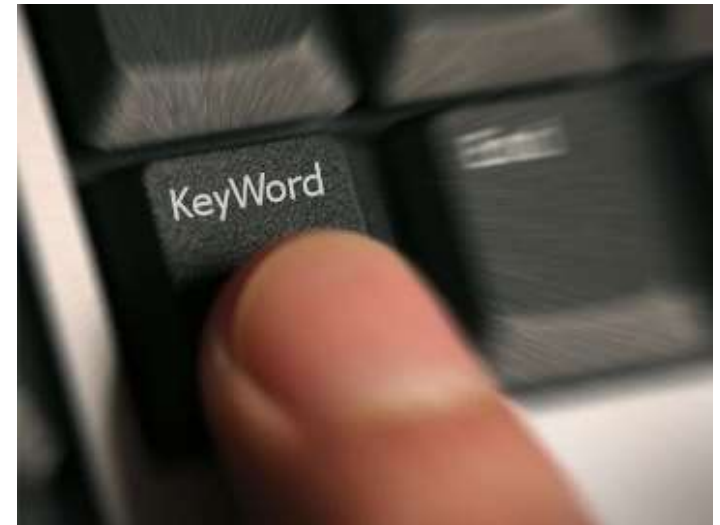
Analysis process (backward analysis) can take several hours (or even days).

### BUT THE LARGEST DEFICIT, HOWEVER, IS ...

Analysis is always initiated by the user itself.

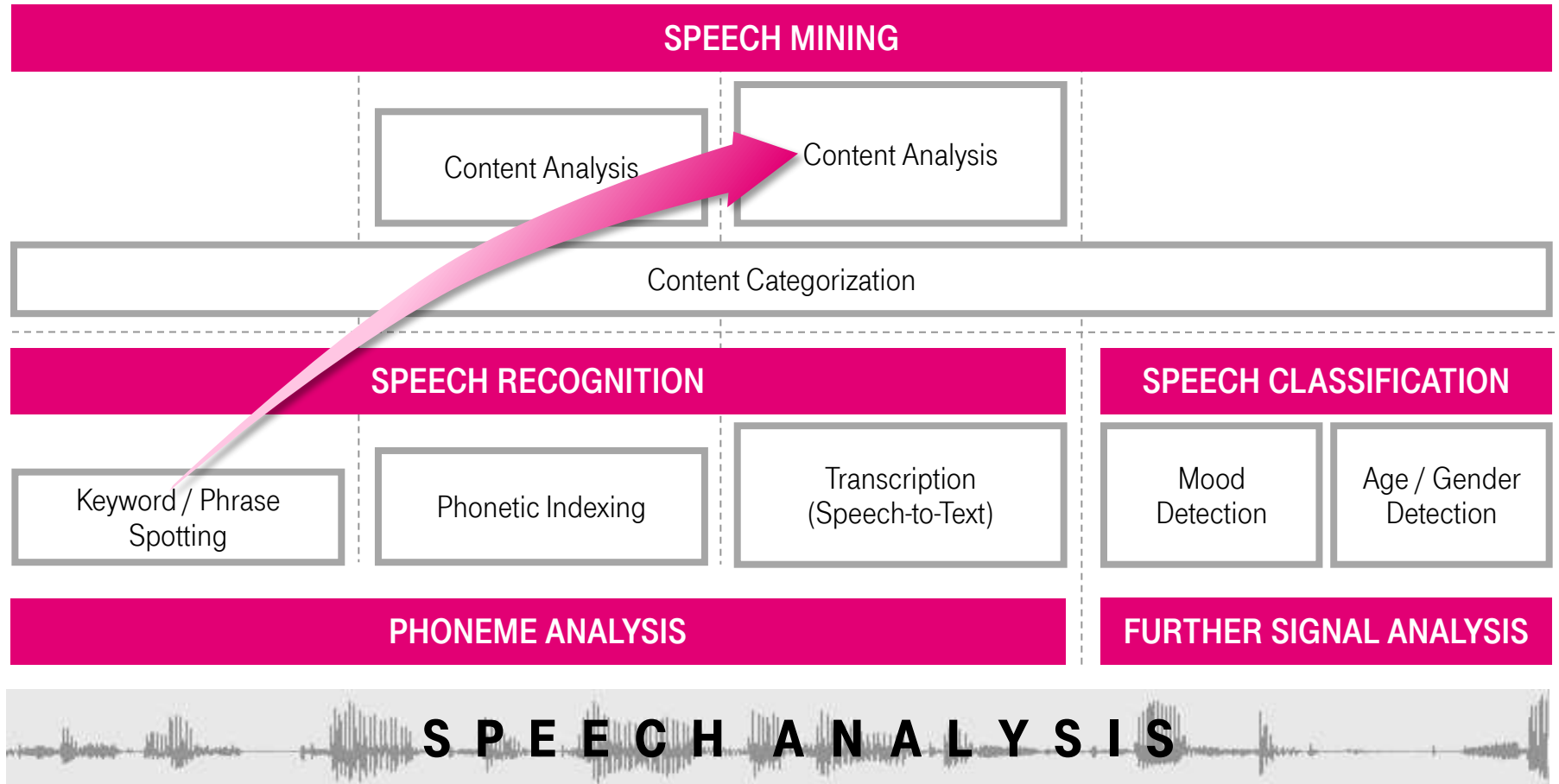
Always an indication is needed on processes whose analysis seems important.

**"INTERESTING"  
TOPICS REMAIN  
UNDETECTED!**



# VOICE ANALYTICS IN CUSTOMER SERVICE

## WHAT COMES NEXT?



Based on <http://www.contactprofessional.com/solutions/speech-technology/81510-2270>

# VOICE ANALYTICS IN CUSTOMER SERVICE

## IN PROCESS OF PLANNING

### CONTENT ANALYSIS

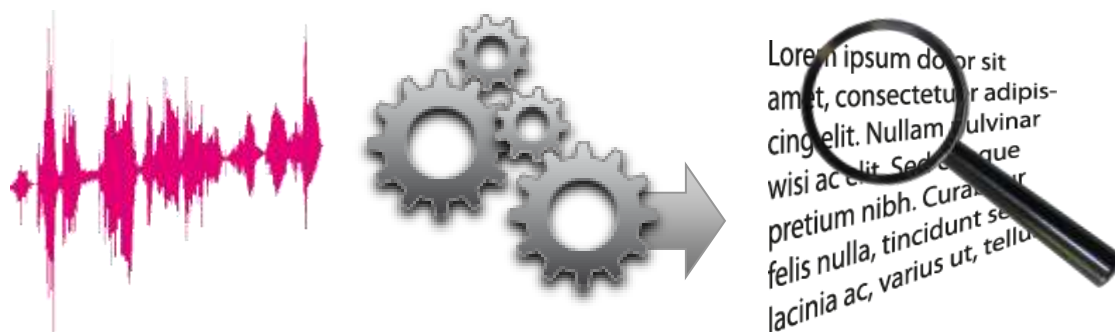
Complete transcription (speech-to-text) of incoming service calls for instant content analysis.

Automated trend analysis to spot upcoming problems - take actions to reduce call volumes.

Content analysis to get customer and market insights promptly.

Usable as Backward-Analysis (already stored calls) and Forward-Analysis (immediately incoming calls).

#### Content analysis based on speech-to-text



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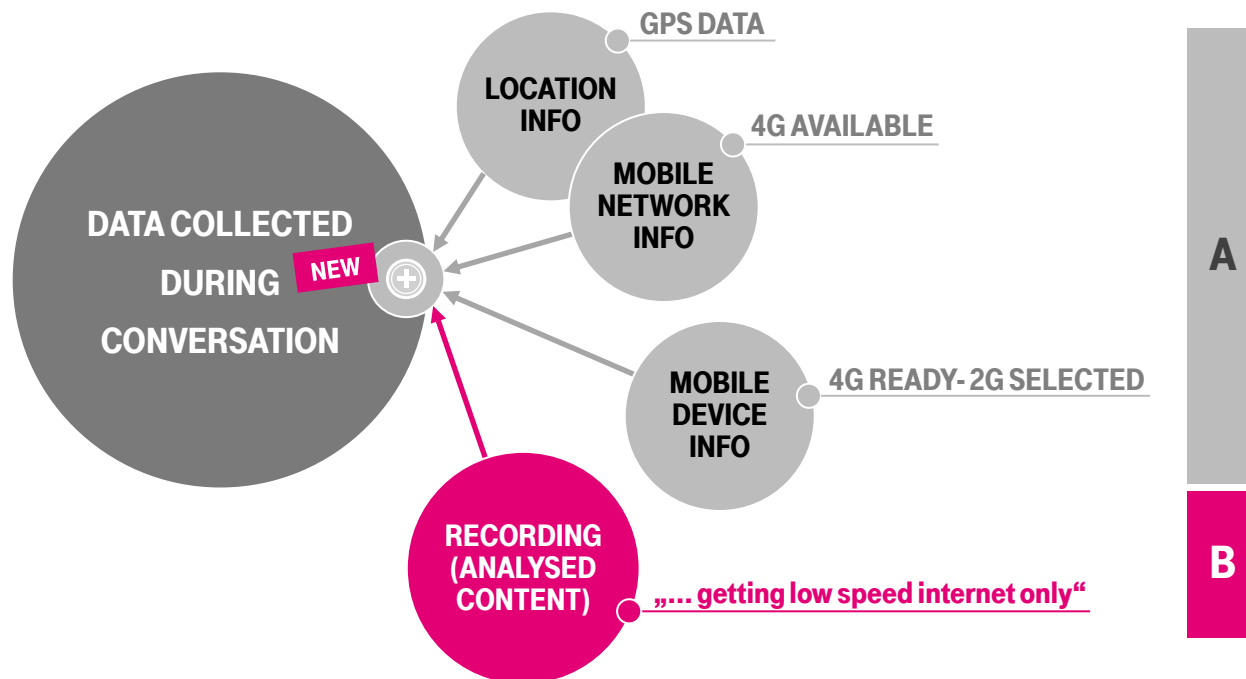
## GATHERING MOBILE META DATA DURING CONVERSATION

Today's mobile devices can gather sensor data during customer-agent conversation.

Data may be associated with content of the conversation – or regardless of that:

**A + B** Helps to get a more comprehensive picture of the customer's situation / requests.

**A** Enriches (only) the big data corpus – with little additional efforts.



**LETS FACE THE FUTURE AND USE INNOVATIONS TO  
OUR ADVANTAGE**

**THANK YOU!**

