

ZUKUNFTSSTARK.  
THE FUTURE SPEAKS IT.  
WE SPEAK THE FUTURE.

## Einsatz von Datenbrillen in der Kommissionierung – Bechtle Logistics

Klaus Kratz | fh Kufstein Tirol | 14th of September 2017

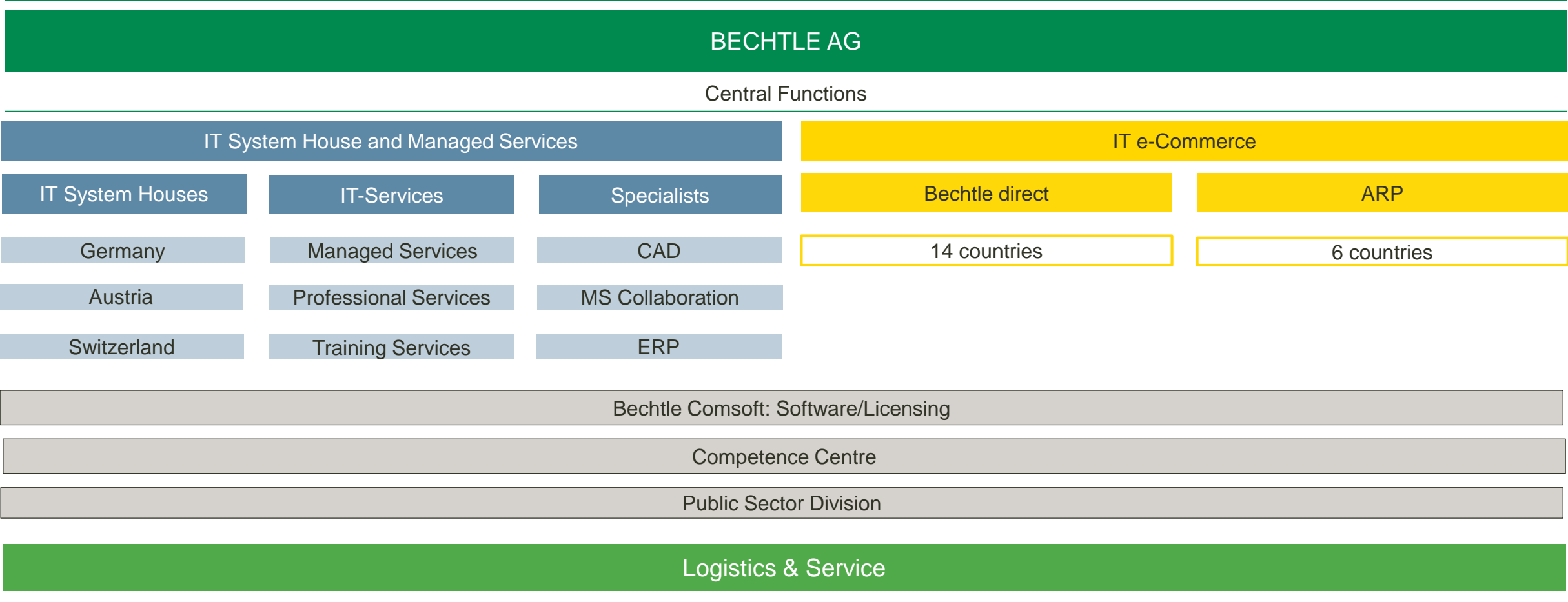


# Bechtle in a nutshell.



- Vendor-neutral, comprehensive portfolio for all aspects of IT infrastructure
- Over 30 years of experience
- Represented in 14 European countries
- Around 8,000 Employees
- 3.09 bn. € revenue (2016)

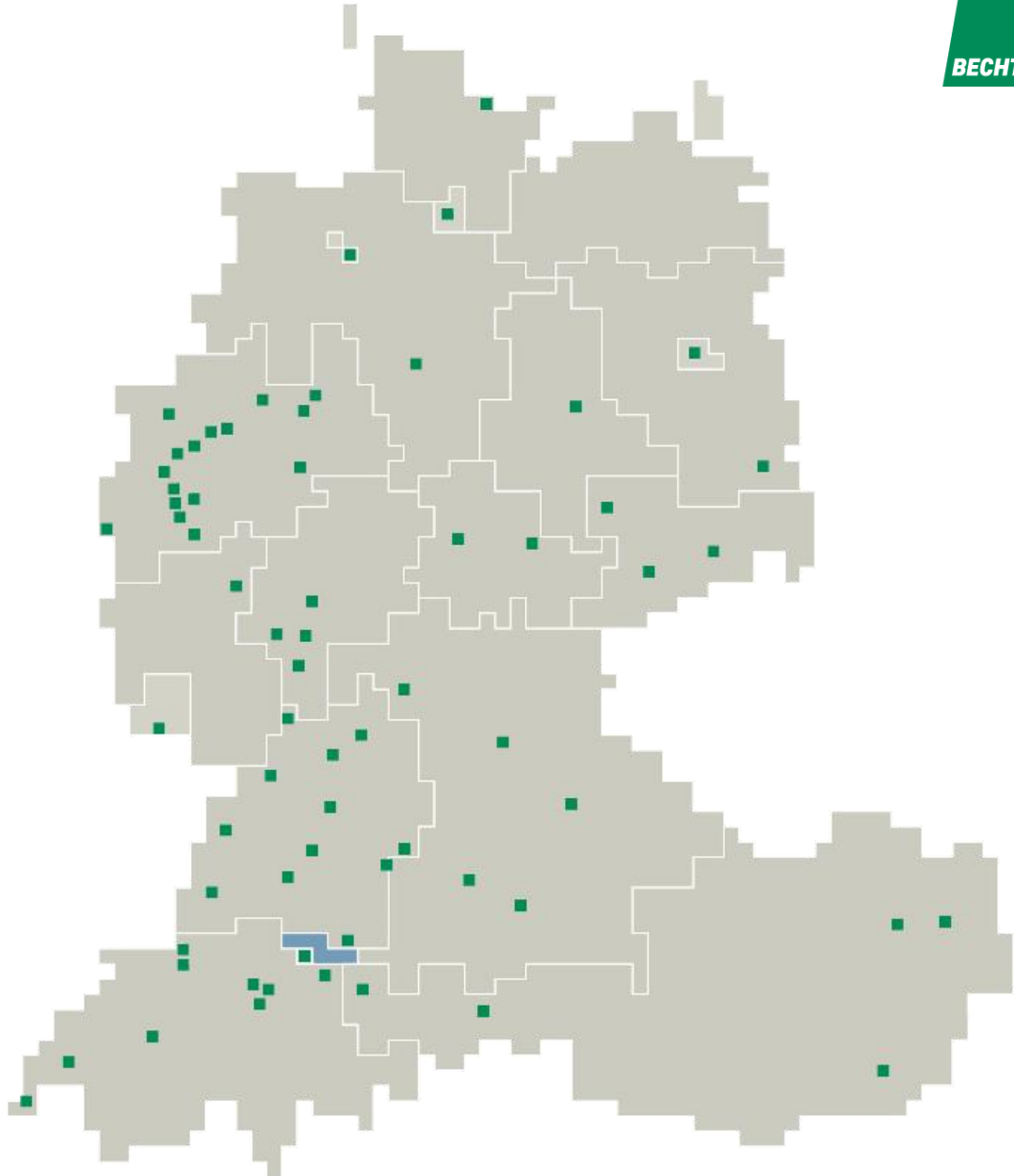
# Two-part Business Model.



# Close, closer, closest—to you. In Germany, Austria and Switzerland.

## Bechtle IT System Houses.

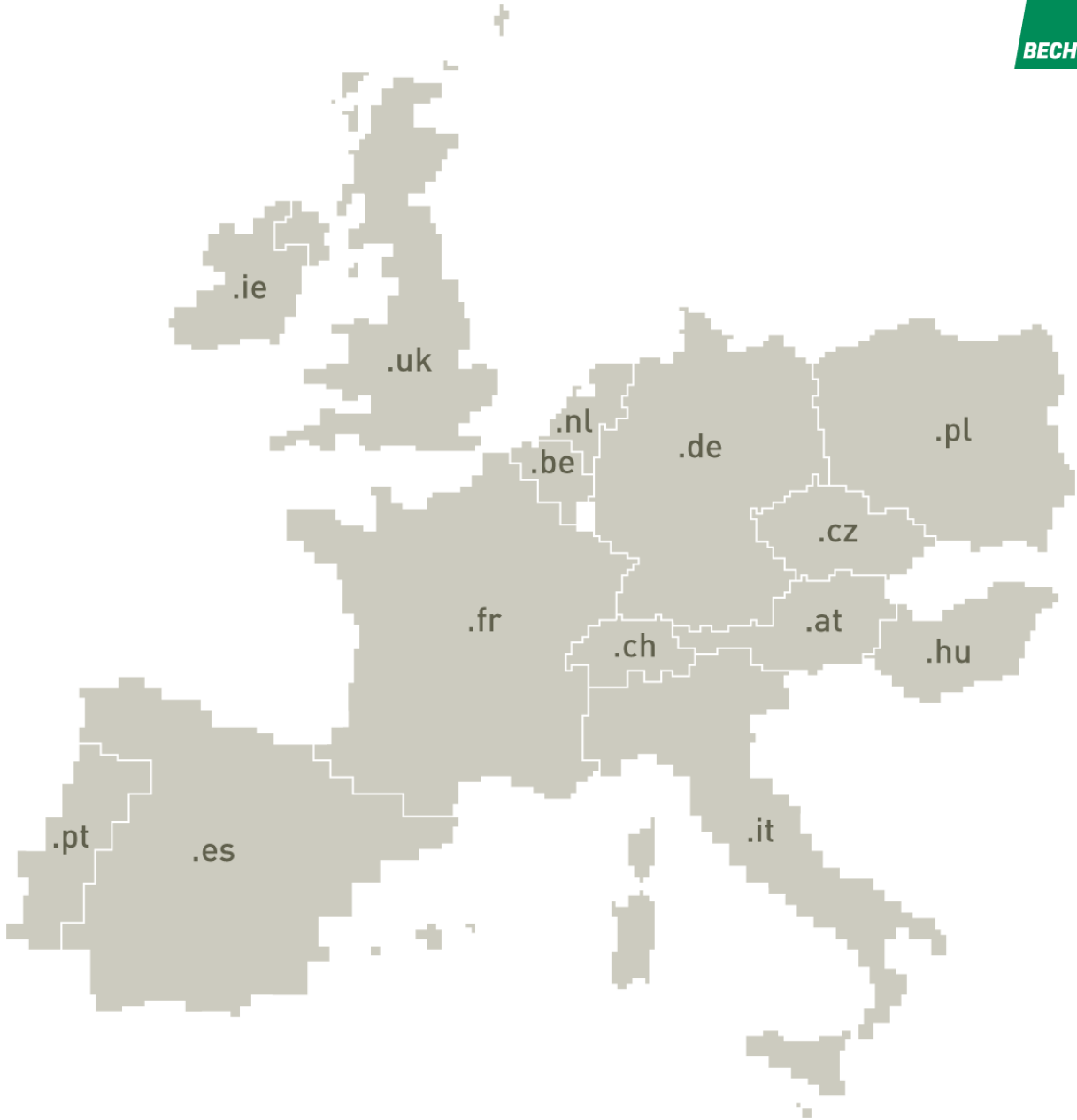
- On-site systems integrator
- Around 70 locations in Germany, Austria and Switzerland
- Employees in 2016: 6,125
- Revenue in 2016: €2,09bn



# The Entire IT World At Your Fingertips.

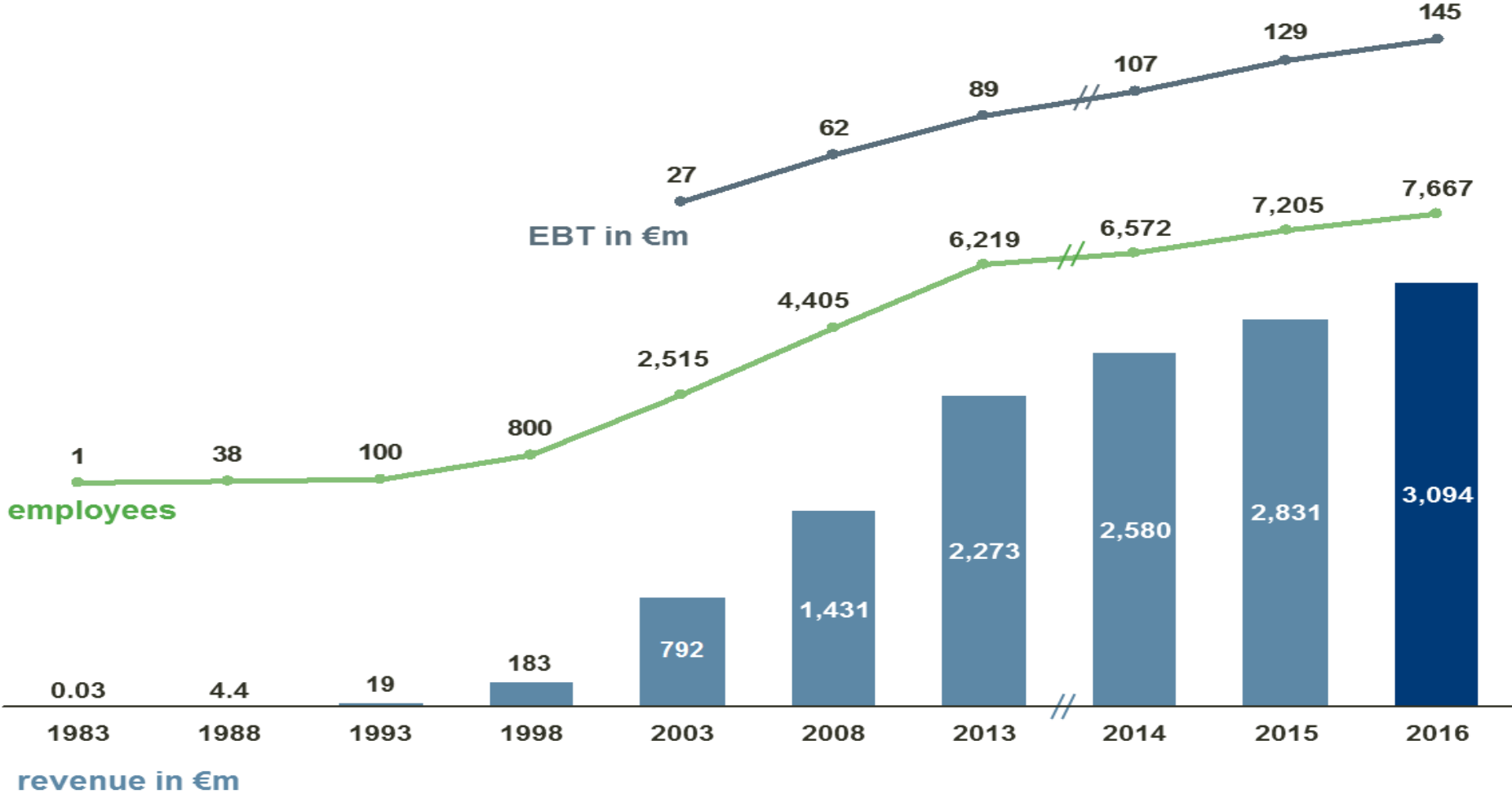
## Bechtle IT e-commerce.

- Direct sales
- Represented in 14 European countries
- Over 70,000 listed products, more than 24,000 customised shops (bios®)
- Employees in 2016: 1,542
  - 538 in Germany
  - 1,004 in other European countries
- Revenue in 2016: €1,00bn



# Sustainable Growth.

## All Sights Set on Vision 2020



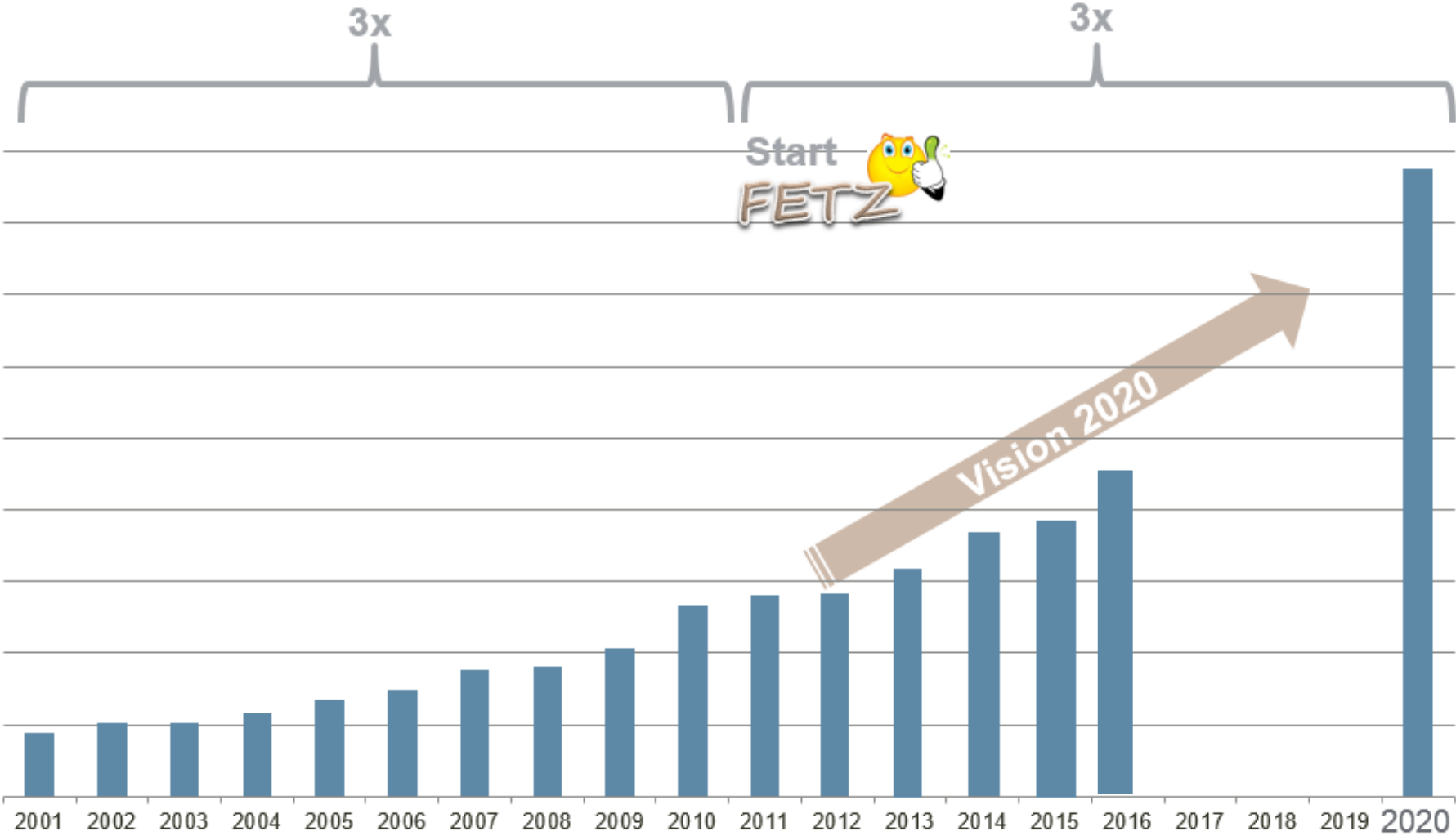
**Vision 2020**

- 5% margin
- 10,000 employees
- €5bn in revenue



# Sustainable Growth.

## Development Parcel Shipping 2001 => 2010 => 2020



# PROJECT FETZ.

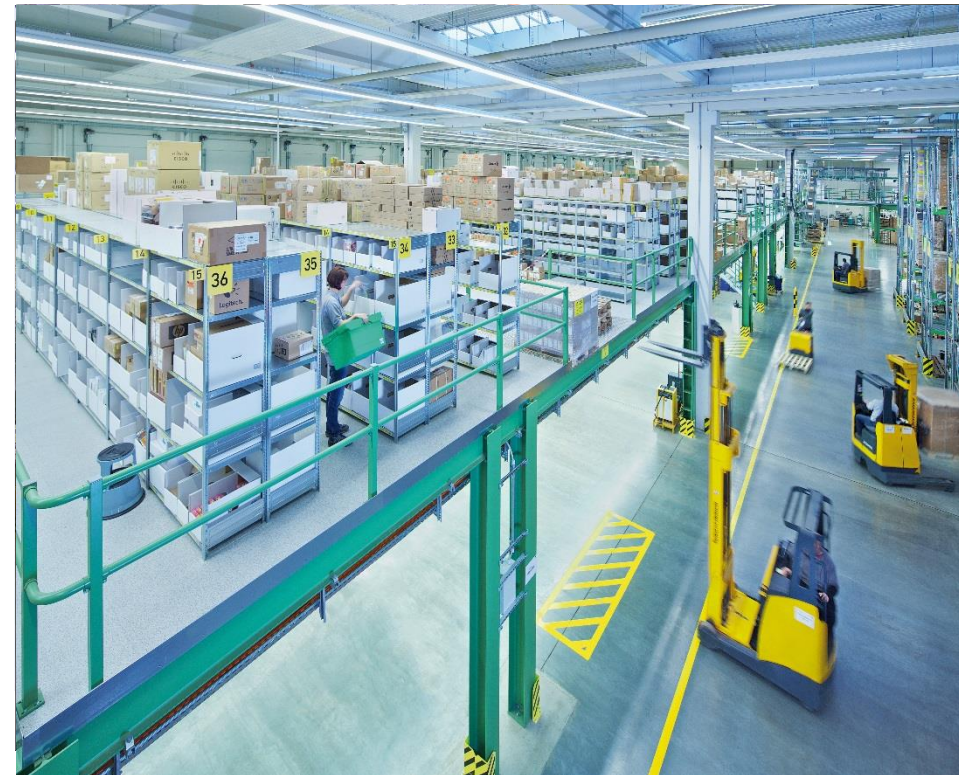
## 4 parallell Activities

### Key Tasks.

- Extension of Warehouse (+ 3.000 Storage bins)
- Build new Mezzanine (+ 3.500 m<sup>2</sup>)
- Implementation of a new Conveyor Technology (+ 1,5 km conveyor belts)
- Implementing SAP EWM

Realization within

14 months (from Kick-Off until Go Live).





# Central Logistics Hub in Neckarsulm/Germany.



- 12,000 products on stock
- >99% same-day shipping rate



# PROJECT FETZ.

## Summary

- The Logistics Project „Fetz“ set a stable foundation for the next steps into the future.
- SAP EWM enabled Bechtle to fulfill the ‚Vision 2020‘. We are now ready to develop more customer individual solutions and start innovation projects like „Pick-by-Vision“.

# Project Pick-by-Vision.

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# Augmented Reality. Definition



Augmented Reality (AR) stands for a computer-aided visual perception/presentation of the real world, extended with virtual aspect

# Smart Glasses. Types



Source: [www.augmentedworldexpo.com](http://www.augmentedworldexpo.com)

# Smart Glasses.



Quelle: [www.sueddeutsche.de](http://www.sueddeutsche.de)

## Characteristics

- Miniature computers on eyeglass frames
- Information will be beamed directly onto the visual field of its user
- Combination of information and viewing direction of the particular user through an integrated digicam
- Information processing and forwarding via Internet access of the glasses

# Development of Pick Process at Bechtle. From Analogue to Visual

As of 1983  
Analogue



As of 2011  
Digital



<https://www.youtube.com/watch?v=7nIL7kV5bAI>

[https://www.youtube.com/watch?v=r9fGRcX\\_o9s](https://www.youtube.com/watch?v=r9fGRcX_o9s)

[https://www.youtube.com/watch?v=r9fGRcX\\_o9s](https://www.youtube.com/watch?v=r9fGRcX_o9s)

As of 12.12.2015  
Visual



Vuzix M100



Trivision LOC.20

# “Handheld” vs. “Hands-Free”.



VP1a	03-040-07-0...	<input type="checkbox"/>
VHU	20035907	
HUEn	<input type="checkbox"/>	PVB <input type="checkbox"/>
Pro.	225225	<input type="checkbox"/>
USB-Kabel 2.0 A/m-B/ ...		
1	<input type="checkbox"/>	
IMng	<input type="checkbox"/>	SI <input type="checkbox"/>
NHU	41000661	
Position auf HU <input type="checkbox"/>		
F1 Det	F2 Abfr	> <input type="checkbox"/>
F4 LBLs	F3 HUEn	

## Scan Barcodes & QR Codes

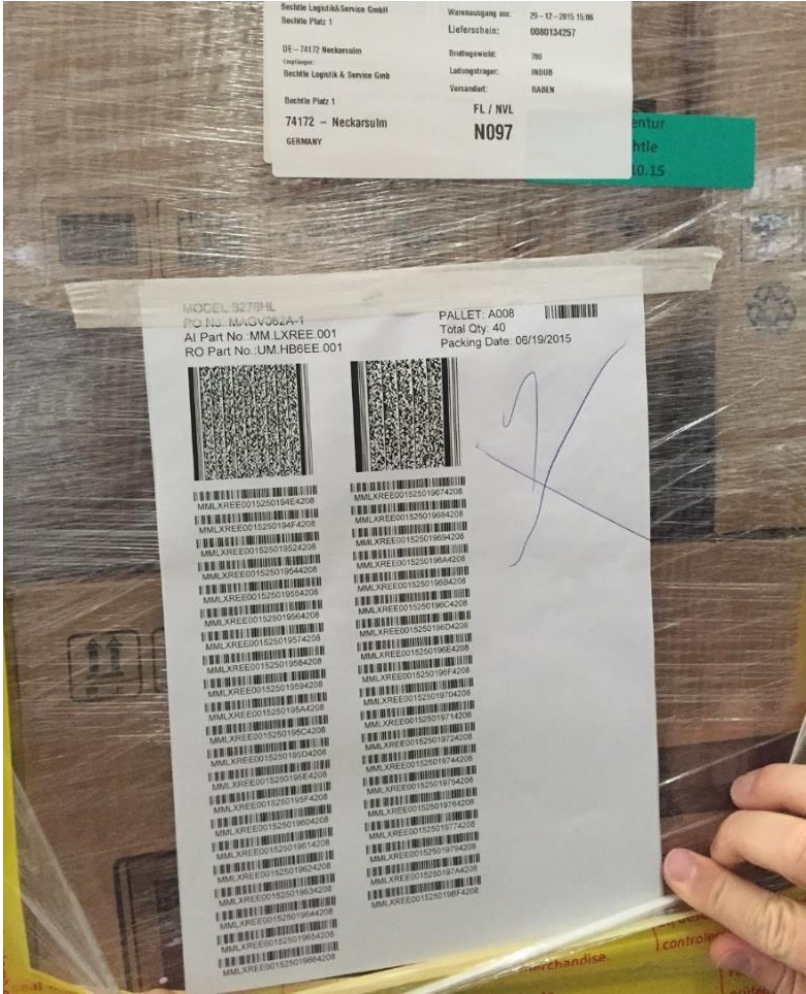




Find the right Barcode amongst many.



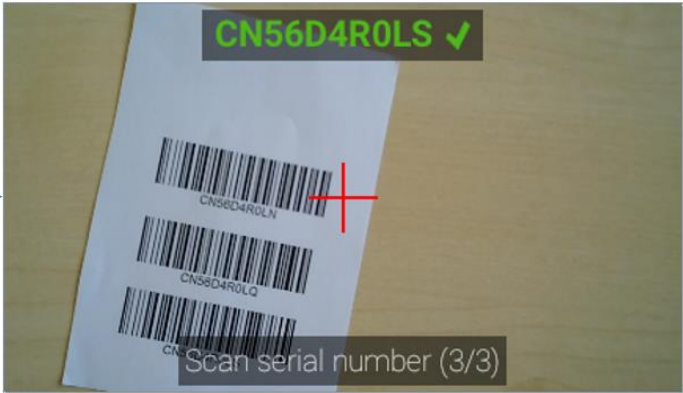
# Scan multiple Barcodes at once.



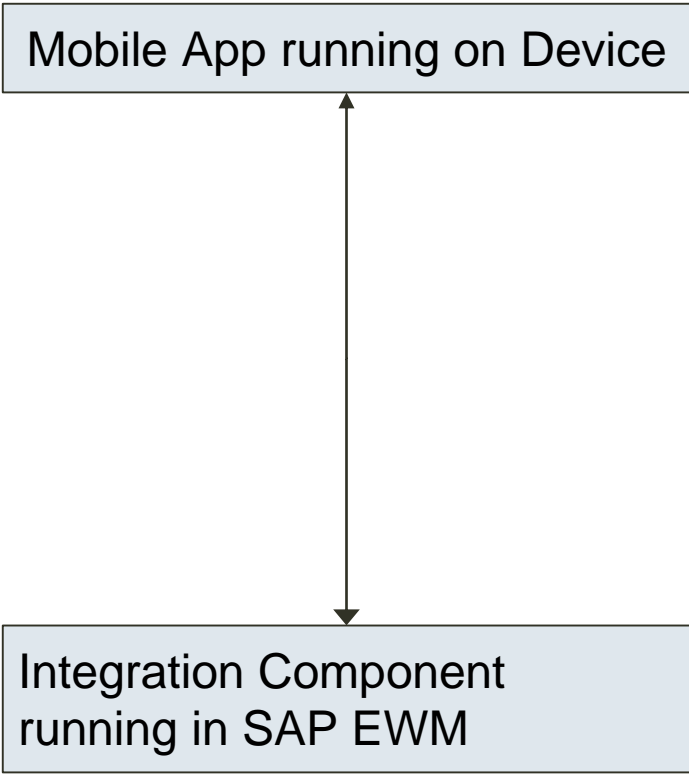
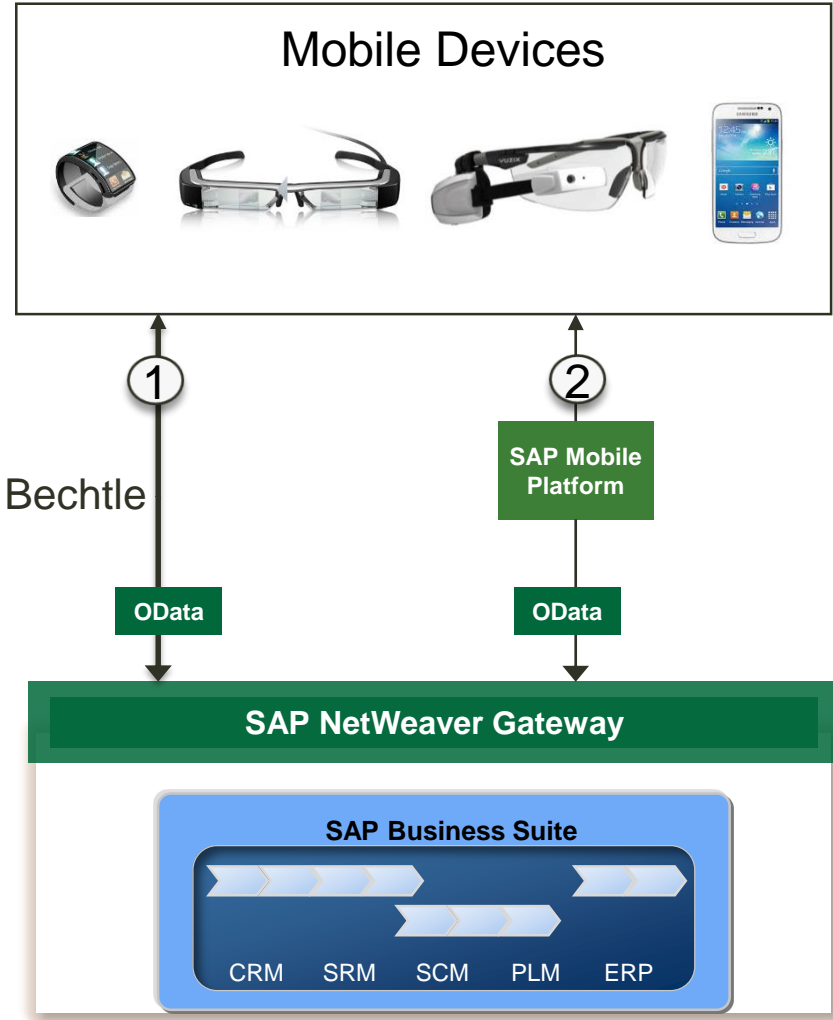
Serialnumbers  
not in SAP EWM



Serialnumbers  
stored in SAP EWM



# SAP AR Warehouse Picker. Architecture



# SAP AR Warehouse Picker. Roadmap

## Version 1.0

- Show instructions (“Go to storage bin xy”, “Scan article 123”...)
- Scan Barcodes
- Online Voice Interaction
- SAP EWM Integration

## Version 1.1

- Exception Codes
- Improved Performance
- Improved UI
- Gesture Interaction
- SMP3.0 integration
- Stabilization of the application

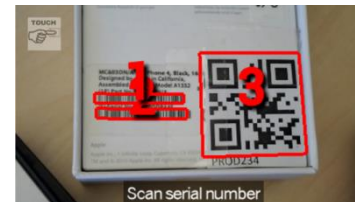
...

## Version 1.5

- Improved Exception Code handling
- Multi-languages support (based on hardware)
- Serial Numbers
- Low Stock Check
- Pick, Pack & Pass
- Putaway

## Version ??

- Offline Voice Interaction
- Physical Inventory
- Replenishment
- Bulk Picking
- Batches
- Re-Packing



available



planned



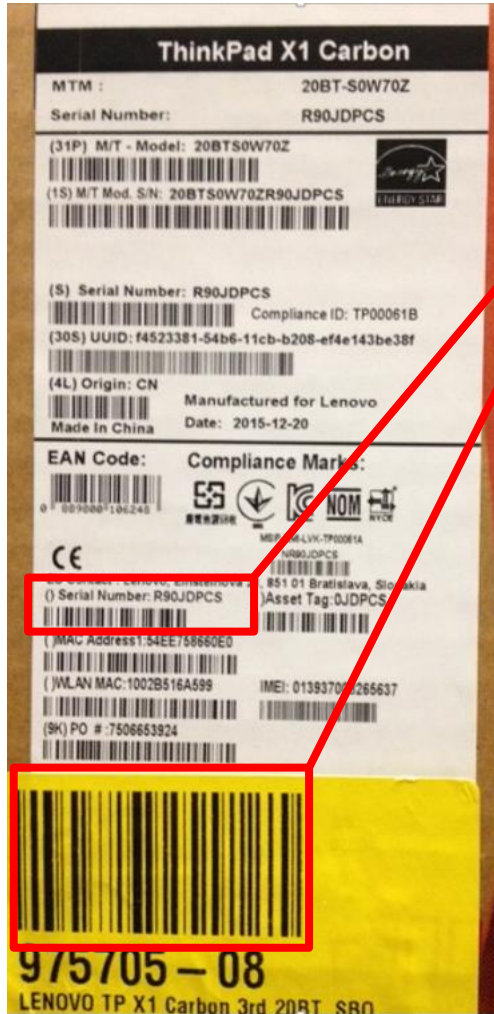
# Augmented Reality. Why?

- World is moving faster
- Complexity increases



Quelle: [www.giphy.com](http://www.giphy.com); [www.photaq.com](http://www.photaq.com)

# Pick-by-Vision. Future Thoughts



## Goal: Scan & Process

- Look at the label once, find the right 2 barcodes (serial number & article number) and get those processed
- Business Value: Increase in Productivity and Quality

# Pick-by-Vision. Next Steps

## Timeline

- Upgrade of SAP-EWM ✓
- Implementation of SAP Add-On „SAP AR Warehouse Picker“ ✓
- Ongoing Optimization (CIP) of Pick-by-Vision in productive environment since 01.01.2016 ✓

## Project Management SAP / Bechtle

- Analysis of errors/gaps/etc.
- Analysis of questionnaires filled out by smart glass users.

## Key Take-Aways

- Smart Glasses are ready to be used in a productive environment.
- But Smart Glass devices need to get better (wearing comfort, battery, etc..) to become a commodity.
- Low risk implementation.

# Any questions?

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