

# Unique identification of pharmaceuticals in Austria

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From the national "Pharmazentralnummer"  
to an international "Global Trade Item Number"

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GS1 Healthcare Conference  
Vienna  
2009-03-19

# Original Work

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Florian Past, Diploma Thesis 2009:

“Eindeutige Identifikation von Pharmazeutischen Produkten in Österreich.

Von der nationalen Pharmazentralnummer (PZN) zur internationalen Global Trade Item Number (GTIN)”

Fachhochschule Joanneum Graz

Studiengang “Health Care Engineering”

# Content

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- Pharmazentralnummer
- PZN-EAN-Code
- Pharma production in Austria
- Global Trade Item Number
- DataMatrix

# Pharmazentralnummer – PZN

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- ❑ Nationally unique – 6+1 digits
- ❑ For pharmaceutical articles:
  - ❑ Trade Name
  - ❑ Manufacturer
  - ❑ Trading unit (e.g. Package size)
- ❑ Connected to dataset
  - ❑ Basic, Barcode and Addictive drug data
  - ❑ Sub-items

# Pharmazentralnummer – PZN II

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- Similar to the German system:
  - 6-digit-structure, error checking number

“Pharmazentralnummer” PZN Structure:

Basis Number						
X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>E</sub>
Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Error Checking

- Reserved Numbers:
  - 8xxxxxx drugstores, public authorities
  - 9xxxxxx pharmaceutical wholesale
  - ~ 730.000 valid PZN

# Pharmazentralnummer – PZN III

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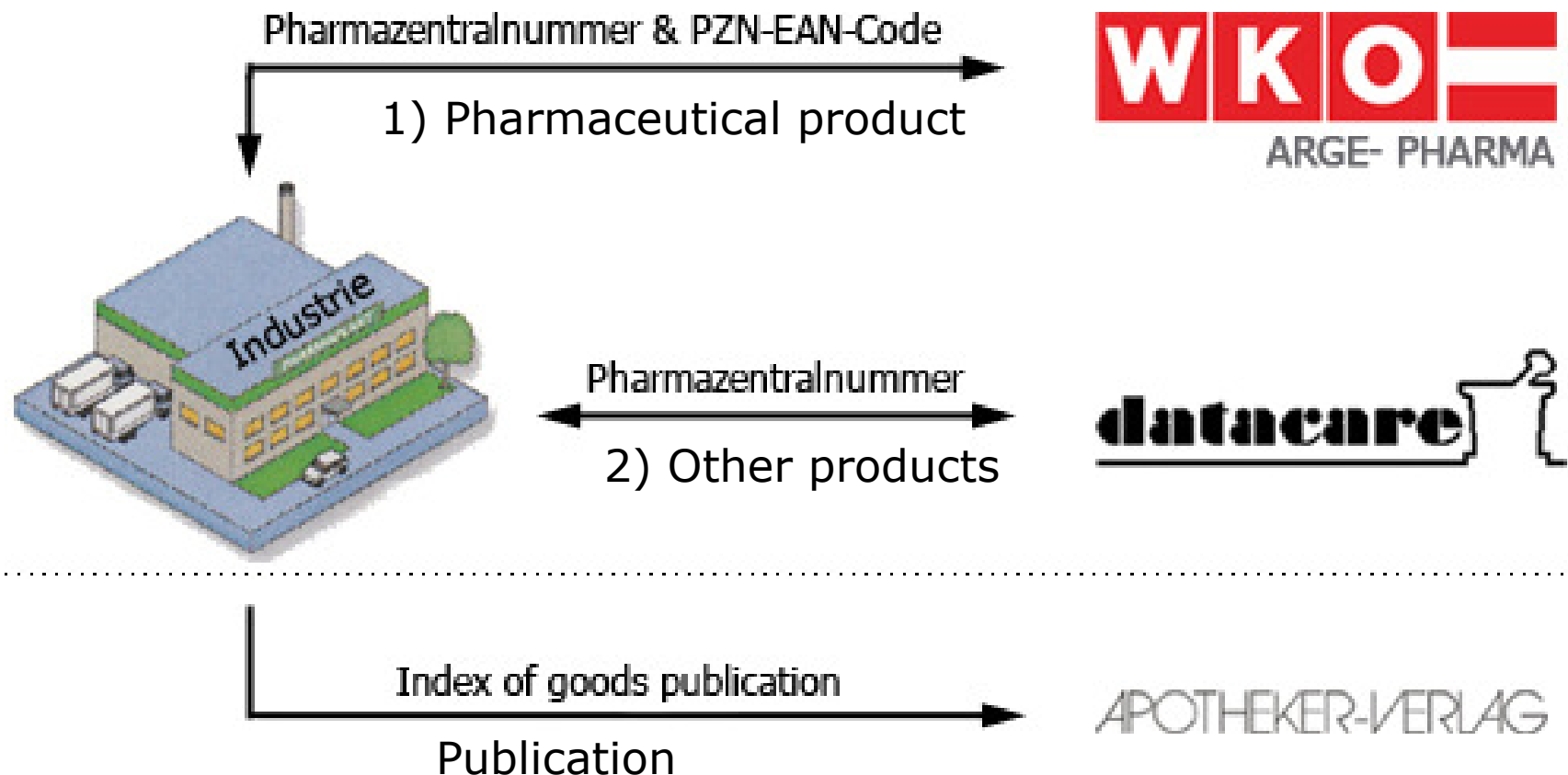
- Fast & reliable reading with EAN-13 Barcode (PZN-EAN-Code)



9 0	8 8 8 8	X <sub>1</sub> X <sub>2</sub> X <sub>3</sub> X <sub>4</sub> X <sub>5</sub> X <sub>6</sub>	Y
Country Code „Austria“	Identifier „ARGE Austria“	Pharmazentralnummer	Error Checking

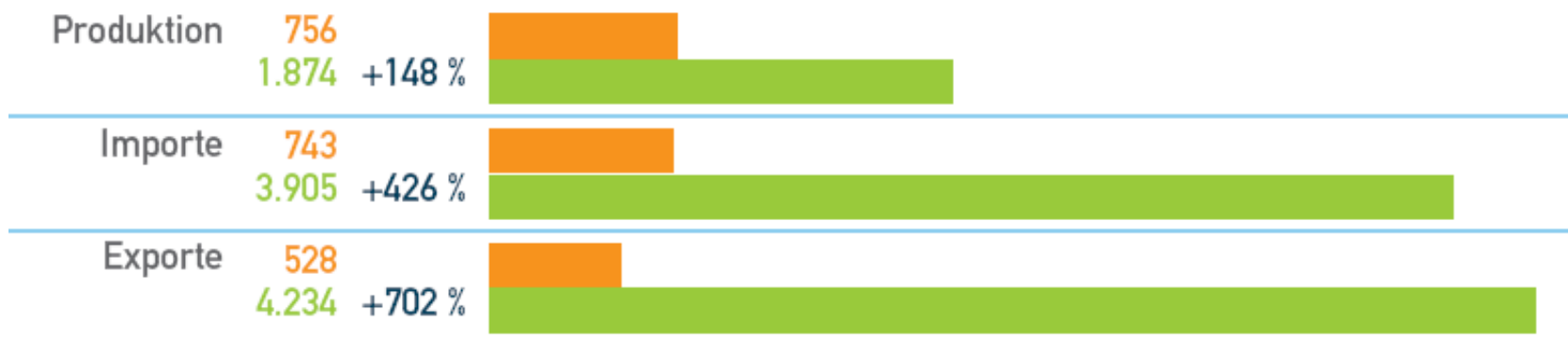
# PZN allocation

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# Pharma production in Austria

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1990  
2006

in Millionen Euro

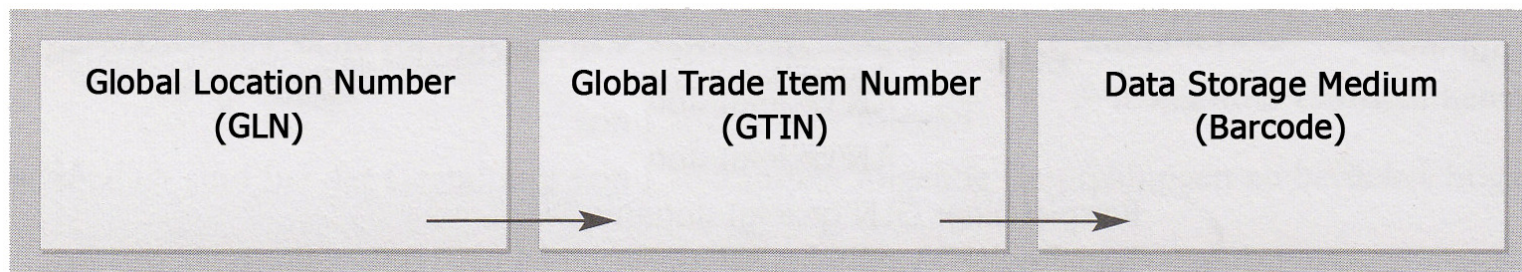
Quelle: WKÖ, Statistik Austria



# Global Trade Item Number

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- ❑ Globally unique identification number
- ❑ Used for:
  - ❑ Primary Article Identification
  - ❑ Electronic Data Interchange
  - ❑ Automatic Data Capture



# GS1-System

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- GLN: Identification of locations
- GTIN: Identification of products

GS1 Basis Number		Article Number	
X <sub>1</sub> X <sub>2</sub>	X <sub>3</sub> X <sub>4</sub> X <sub>5</sub> X <sub>6</sub> X <sub>7</sub>	X <sub>8</sub> X <sub>9</sub> X <sub>10</sub> X <sub>11</sub> X <sub>12</sub>	X <sub>13</sub>
Country Code	Company Prefix (Allocated by GS1)	Item Reference (Allocated by manufacturer)	Check Digit

- Data storage medium:  
EAN-13, DataMatrix, RFID

# Advantages – GTIN

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- ❑ International harmonization of product numbers<sup>1</sup>
- ❑ Unique identification system (national/internat.)
- ❑ Higher capacity of numbers
  - ❑ PZN ~ 730.000 / Austria
  - ❑ GTIN ~ 100.000 / manufacturer
- ❑ Development of int. communication standards, based on GTIN (EANCOM)

1) EFPIA (2008) "Towards safer medicines supply – A vision for the coding and identification of pharmaceutical products in Europe "

# Requirements – GTIN

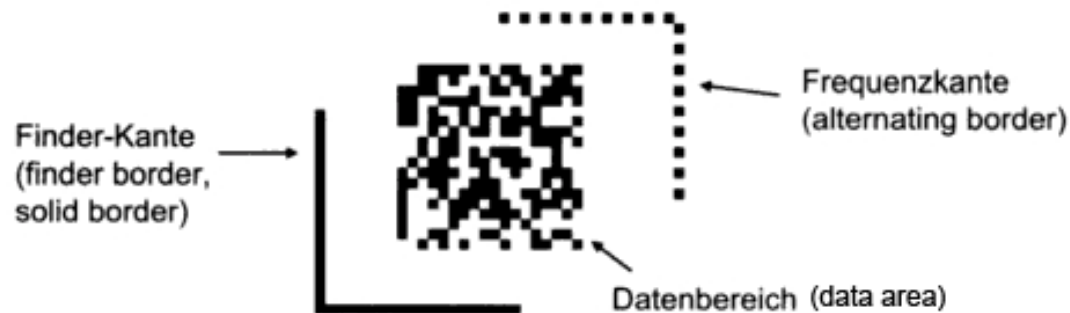
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- ❑ Adopting product datasets (index of goods)
- ❑ Concurrent use of GTIN and PZN in transition period to adapt
  - ❑ Administration software
  - ❑ Communication standards
- ❑ Pharmacy:
  - ❑ Administration software (Feasibility study)
  - ❑ Accounting data (health insurance company)

# DataMatrix vs. EAN-13

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- ❑ Smaller Symbology = more data based on area
- ❑ Higher maximum data capacity (depending on size)
- ❑ High data security (Reed-Solomon error correction)



# DataMatrix vs. EAN-13 II

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- ❑ Accommodation of additional information
- ❑ Realised with Application Identifier (AI):
  - ❑ Serial number
  - ❑ Batch number
  - ❑ Registration number
  - ❑ Expiration date



# Advantages – DataMatrix

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- ❑ Automatic Data Capture of additional information – lower error rate
- ❑ Automatic identification of expired products
- ❑ Efficient recall with automatic reading of batch number

# Advantages – DataMatrix II

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- Preventing counterfeiting with possibility of authentication via GTIN and additional data

→ Enhanced patient safety!



# Requirements – DataMatrix

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- DataMatrix readable Scanner
- Consistent using by manufacturers concerning:
  - Type (Standardised data structure)
  - Dimension
  - Position
  - Data-stream

→ GS1 verification service

# Conclusion

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- Advantages GTIN
  - More product-IDs available
  - Facilitating international trade
  - Transparency
  
- Advantages DataMatrix
  - Like GTIN + Improving Safety
  - Simplifying processes
  
- Costs? → Mainly Software adaptation

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**THANK YOU!**



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