

# UPC Bar Codes: Case Study for Standards Adoption

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**Federal Energy**

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# Universal Product Code (UPC)

- Bar codes invented late 1940s
- First grocery bar codes (Kroger), 1966
- Grocery industry bar code standards
  - Universal Grocery Products Identification Code, began in 1970
  - Industry adopts Universal Product Code, 1973
- UPC scanner, NCR, 1974
  - First item scanned, Wrigley's Juicy Fruit gum

Source: Russ Adams, <http://www.adams1.com>



# UPC, EAN, EDI, CPFR, XML

- Variation of UPC, European Article Number, 1976
- EAN now refers to all non-North America regions, not just Europe
- UPC/EAN extended to case, shipping, and container codes, 1980s
- UPC/EAN numbers used in EDI messages, throughout supply chains, 1990s
- UPC/EAN the basis for Collaborative Planning, Forecasting, and Replenishment (CPFR) using XML, 2000 - present



# Getting from idea to standard - everyone wins

- Benefits for all trading partners
  - Manufacturers
  - Distributors
  - Retailers
- Fewer stock outs
- Less spoilage
- Lower costs for customers
- Thus, everyone has stake in outcome



# Getting from idea to standard - trading partner pressure

- First proposed by major grocery retailers
- Later endorsed by larger food manufacturers
- Extended to wide variety of product lines
  - Required special work for some products: perishable goods, magazines
- Large retailers made compliance mandatory
- Strong technology vendor support



# Getting from idea to standard - standardization practices

- Strict image production standards
  - Keeps printer and scanner costs low
- Industry specs referred to national and international standards bodies
  - Assures wide consensus
  - In some places, codified into regulations
- Neutral third-parties organizations
  - Can act as referee for disputes
  - Assures professional management

