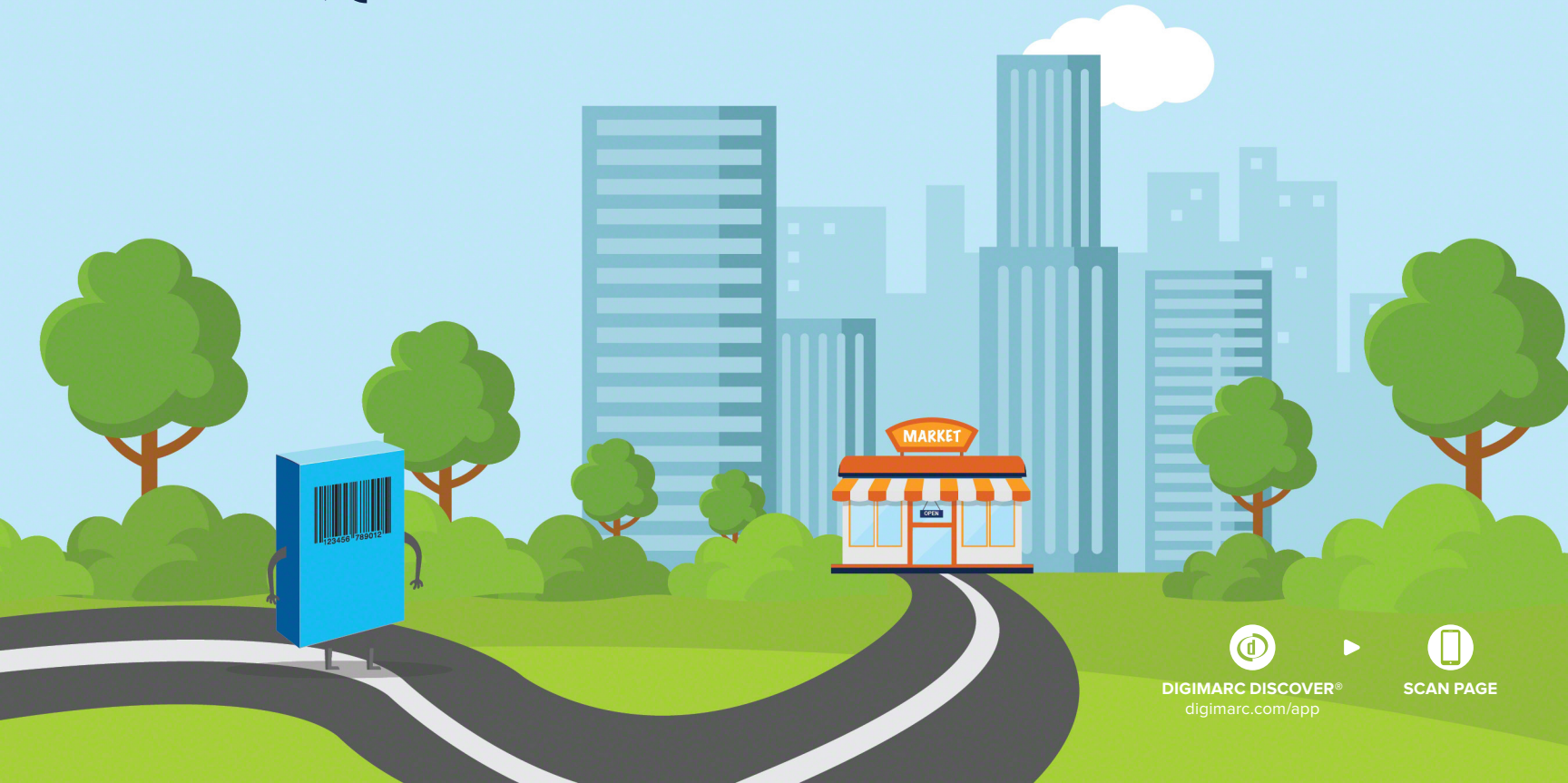


The Barcode Comes of Age

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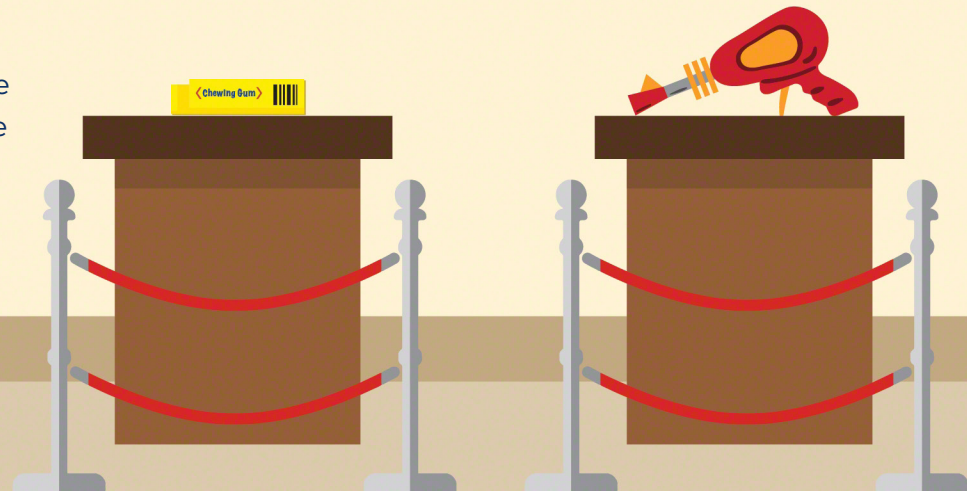
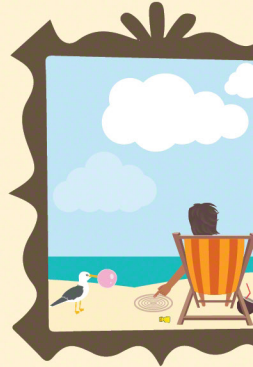
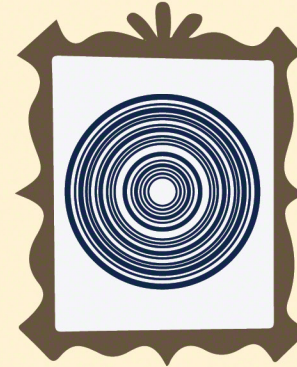
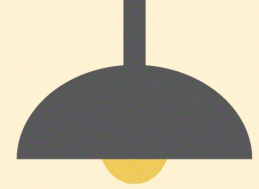
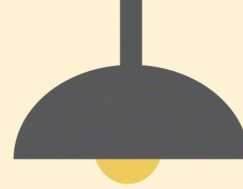
SCAN PAGE

The Birth of the Barcode

The beginning of the UPC barcode is a story of imagination, persistence and ingenuity, with everything from lasers, bull's eyes and inspiration on a beach.

The story began in the late 1940s with frustrated retailers closing stores just to take inventory, and with no reliable way of tracking purchases.

The development of today's familiar barcode had its share of dead-ends and sidesteps, but on June 26, 1974, modern retailing began when a package of Wrigley gum passed over a scanner at Marsh Supermarkets in Ohio.



SCAN PAGE



WATCH
CHAPTER ONE

Kicked to the Curb

The barcode had a triumphant debut, but its future was still uncertain. **Retailers, brands and manufacturers waited on one another to see who would take the first steps**, each having their own concerns about the new technology. Retailers balked at the price of point-of-sale (POS) scanner equipment, and manufacturers were not eager to redesign and print new product packaging.



Experts had expected 1,000 retail stores to be equipped by the mid-1970s, but by 1976 that number was just 50.



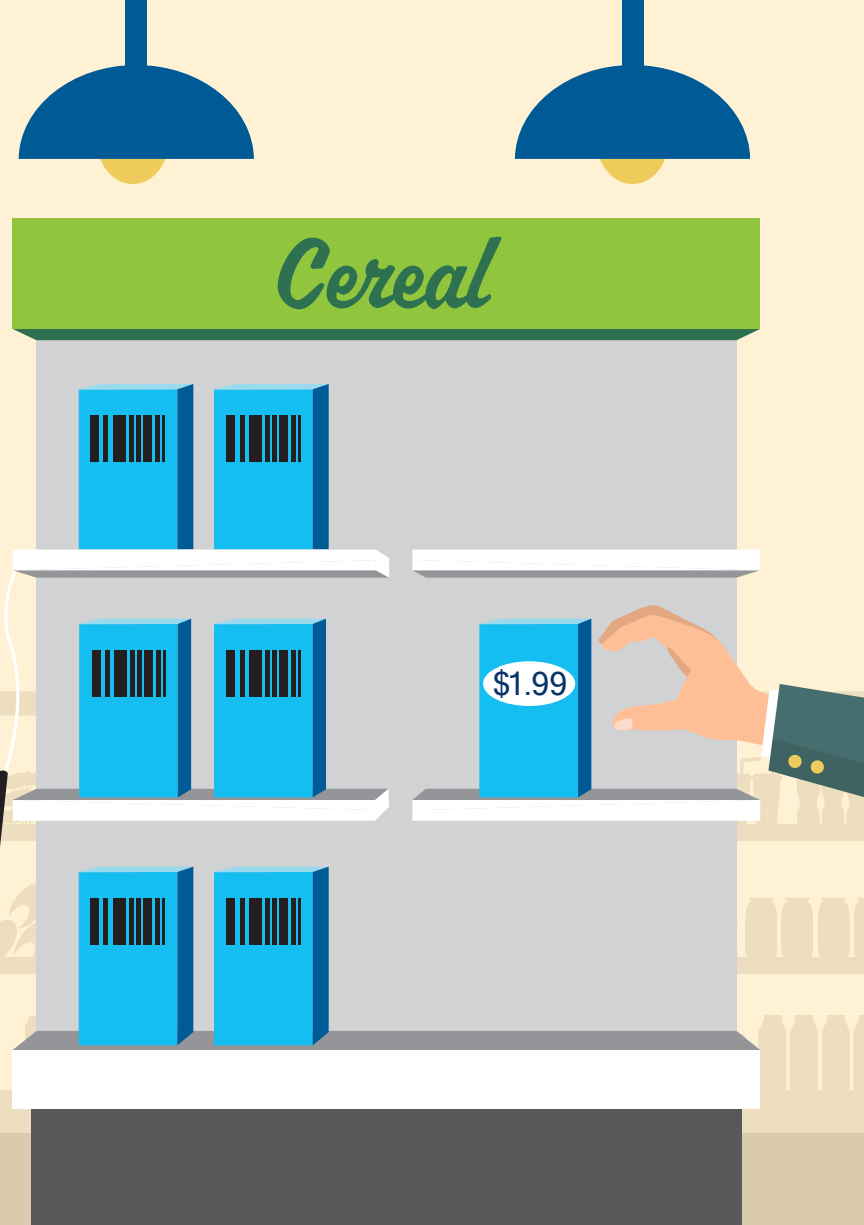
‘You’re Charging Me How Much?’

Shoppers were understandably wary, and naturally suspicious of a technology that led to the elimination of price stickers; some believed they were being overcharged.

Retailers tried to ease concerns by providing grease pencils, so shoppers could write the price on products, but it didn’t work. Shoppers remained concerned, and faced with federal legislation, retailers once again manually priced products.

Passing the Bar(Code) Exam

Kroger created a flyer in the early 1970s to educate their customers. It included instructions like, “Watch the display window, the price of each item will appear there.”



Creeped Out by the UPC

While retailers and manufacturers were struggling to integrate the UPC barcode into their ecosystem, the barcode was already entering popular culture in curious ways. Conspiracy theories about the UPC began to percolate. **Some thought it was an ominous surveillance device by “Big Brother.”** Others feared it was demonic, containing the number “666,” while Mad magazine thought it was simply ugly; they put the barcode on their April 1978 cover and called it “yecchy.”

‘It Does What?’

In 1992, President George Bush encountered a supermarket scanner for the first time—and was amazed.



Mom & Pop Turns Mass Merchandiser

In the early 1980s, the barcode had established a foothold in retail and was contributed to the transition from family-run operations to mass merchandisers, who could absorb the cost of purchasing many scanners.

In time, the original promise of barcodes and scanners proved true: **Reliable and efficient inventory tracking was now a reality**—and all without having to close the store and do a manual count.

Kmart Goes All In

In 1980, 8,000 U.S. stores adopted UPC-A scanning. The tide changed when retail giant Kmart went all in with scanning and barcodes.

Digimarc Store

Barcodes Welcome!

MARKET

OPEN



A Star Is Born

In the 1980s, retailers began to understand the potential benefits of scanner data. Some of them realized they could gain massive efficiencies in their supply chain by having the POS system automatically order products.

Retailers could also get comprehensive data on regional and national sales activity for particular items, giving them more up-to-date actionable data on purchasing numbers. **This led to a new era of brand and retailer relationships.**



The Barcode Hits the Board Room

Prior to the barcode, cash registers had been cash depositories. But eventually, **retailers realized their POS system held databanks of valuable sales data.** This was sales intelligence that once had been owned only by manufacturers via warehouse inventories.

This launched a new era of data analysis in the '80s. For example, Pepsi executives dissected purchased data from retailers and found that point-of-purchase displays increased sales far more than reduced prices, an insight only the data could have revealed.



Join the Club

Barcodes and scanners resulted in sales data that could be linked to an individual customer, paving the way for customer loyalty programs.

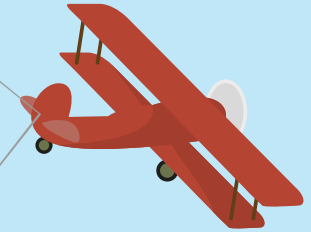
The Barcode Goes Abroad

Business leaders around the world studied the U.S. efforts with barcodes and soon decided they wanted in.

In 1988, the Uniform Code Council/EAN International reached an agreement on a new standard EAN-128 code for the tracking of goods and consignments in the global supply chain. This code supported more numerical elements and paved the way for accurately monitoring products in a complex, global supply chain. **This opened global trade as we know it today, and now allows U.S. retailers to efficiently work with manufacturers overseas.**

Words Can Be Deceiving

Although EAN stands for European Article Number, the standard was adopted worldwide.



‘Mad Scientist’ Sees New Barcode

In 1990, an astronomer named Geoff Rhoads quit his job at an electronics manufacturer and began research into space imagery and content protection.

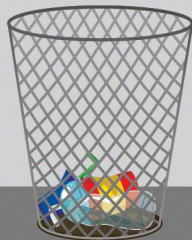
Rhoads was a self-described “mad scientist,” and he concentrated on removing noise from digital photos of deep space imaging. He soon hit on a commercial product: **digital watermarking technology that could serve as a unique identifier for image copyright protection.**



Rebirth of the Barcode

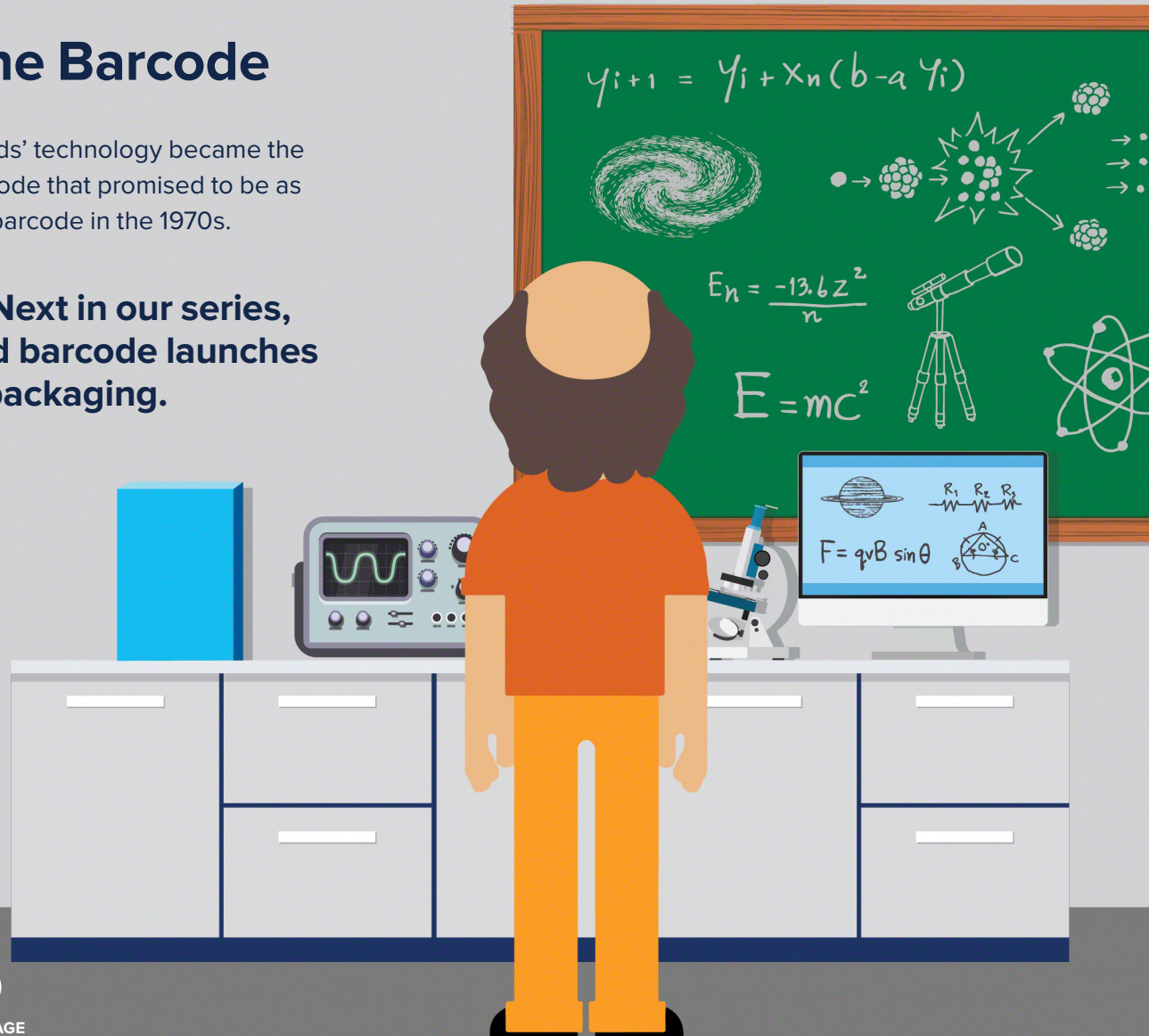
Over a decade later, Rhoads' technology became the basis of an advanced barcode that promised to be as revolutionary as the UPC barcode in the 1970s.

To be continued. Next in our series, Rhoads' advanced barcode launches the era of digital packaging.



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ABOUT DIGIMARC CORPORATION

Digimarc Corporation (NASDAQ: DMRC) is a pioneer in the automatic identification of everyday objects such as product packaging and virtually any media, including print, images, and audio. Based on the Intuitive Computing Platform (ICP™), Digimarc provides innovative and comprehensive automatic recognition technologies to simplify search, and transform information discovery through unparalleled reliability, efficiency and security. Digimarc has a global patent portfolio, which includes over 1,100 granted and pending patents. These innovations include state-of-the-art identification technology, Digimarc Barcode, as well as Digimarc Discover® software for barcode scanning, and more. Digimarc is based in Beaverton, Oregon, with technologies deployed by major retailers and consumer brands, central banks, U.S. states, film companies and professional sports franchises, among others. Visit digimarc.com and follow us @[digimarc](https://twitter.com/digimarc) to learn more about The Barcode of Everything™.

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