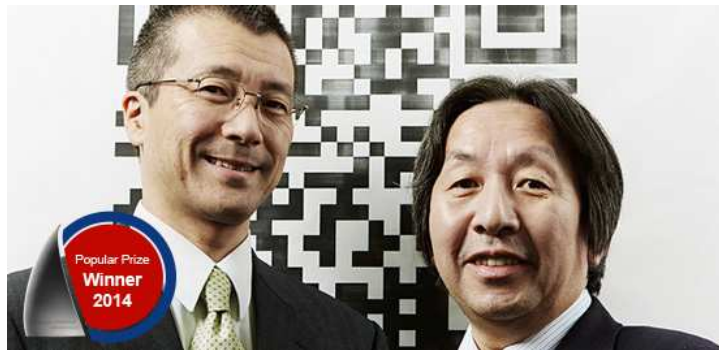



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Masahiro Hara, Motoaki Watabe, Tadao Nojiri, Takayuki Nagaya, Yuji Uchiyama (Japan)

Winners of the Popular Prize



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[About the invention](#)

Category: Non-European Countries

Sector: Telecommunications

Company: Denso Corporation

Patent number: [EP0672994](#)

Invention: The QR code

QR codes, the ubiquitous black-and-white squares found everywhere from billboards to product packaging, have completely changed our concept of what bar codes can do. Uniquely suited to the digital age, the QR code pervades virtually every facet of contemporary consumer life, and it increasingly connects the physical world to the virtual worlds in our pockets.



Since a pack of Wrigley's Juicy Fruit gum was scanned at an Ohio supermarket in 1974, the familiar black-and-white stripes of the most popular bar code type - the one-dimensional UPC - have become an integral part of modern life.

With the intent to better track parts in car manufacturing, a team at automotive component manufacturer Denso Wave, then a division of Denso Corporation, led by Masahiro Hara decided to go even further: They developed a two-dimensional bar code. The result was the square "Quick Response Code", or QR code, released in 1994. It allows the scanner to find and interpret the code's information 20 times faster than previous matrix codes - and opens up countless new possibilities for meshing our physical and virtual lives.

Societal benefit:

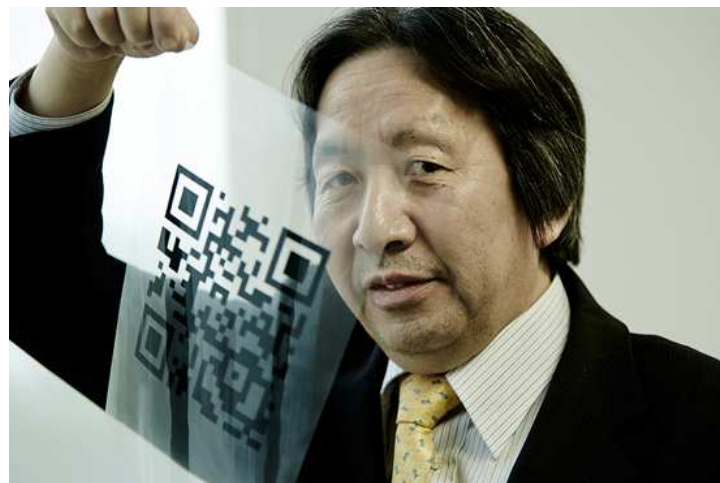
Using a smartphone as a scanner, consumers can connect directly to websites - and marketers are putting this ability to some creative uses: A QR code in a magazine ad can send readers to a website to buy a product; shoppers in a store are provided with more detailed information by QR codes on product labels; in South Korea, commuters can even shop by scanning QR codes from billboards depicting supermarket shelves.

Economic benefit:

The number of European smartphone users scanning QR codes increased by 96% between 2011 and 2012 to 17.4 million users. A study by mobile computing company Nellymoser has shown that the use of QR and other mobile action codes in the Top 100 US magazines increased by 617% from January 2011 to December 2011, and QR code market share from 66% in January to 80% in December.

Meanwhile, Denso Wave has further developed QR technology with the iQR code to meet the industrial market's demand for a code with a higher data capacity, a reduced size, and a rectangular format.





How it works:
The inventor:
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