

Barcodes- The Perfect Credential

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Abstract— In 1948, a local food chain store owner approached Drexel Institute of Technology in Philadelphia asking about research into a method of automatically reading product information during checkout and that's how the so called barcodes were invented.

Keywords— barcodes.

I. WHAT IS A BARCODE?

A barcode is an optical machine-readable representation of data.

II. BARCODE REPRESENTATION

Originally barcodes represented data in lines and was referred to as linear or 1 dimensional barcodes. They also come in square, dots and are termed as 2 dimensional barcodes.

III. BASICS OF BARCODES

Barcodes provide a simple and inexpensive method of encoding text information that is easily read by inexpensive electronic readers. It also allows data to be collected rapidly with extreme accuracy. A barcode reader decodes it by scanning a light source across the barcode and measuring the intensity of light reflects back by the white spaces. The pattern reflected is detected with a photodiode which produces an electronic signal that exactly matches the printed barcode pattern.

IV. BARCODE SYMBOL CHARACTERISTICS

A. Magnification

The magnification size of the barcode symbol is determined by x-dimension (narrow module width) in relation to normal size. To print an accurate barcode of high quality symbol a number of factors like

- Printing process
- Ink quality and
- Substrate must be taken into consideration.

B. Bar height

Once the magnification of bar code symbol has been determined, it is important to ensure that the height remains in proportion to the magnification and does not drop below the minimum specified.

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C. Quiet zones(Light margins)

The quiet zones of the barcode symbols are the solid, light areas before the first bar and after the last bar. These areas are extremely important as they allow the scanner to recognise the beginning and end of bar symbol.

D. Colours

The colours and type of ink you choose for your barcode symbol is very important. As a scanner reads a Barcode using an infrared light source it sees the symbol differently to the human eye.

The most suitable and reliable colour combination is black bars in a white background.

E. Substrate

The substrate is the material the barcode symbol is printed on. Different packaging materials reflect light differently, which have an effect on the scanning ability of the barcode symbol.

V. ANATOMY OF BARCODES

A barcode contains number code below the symbols which refers to a system of characters which are listed below:

- 0- Standard UPC number
- 1- Reserved
- 2- fruits, vegetables, meats and so on
- 3- Pharmaceuticals
- 4- In-store code for retailers
- 5- Coupons
- 6,7- Standard UPC number
- 8,9- Reserved

VI. CONCLUSION

Barcodes have slowly become an essential part of modern civilization. Their use is widespread, and the technology behind barcodes is constantly improving.

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