Tripletail Ventures, Inc.
Video Barcode: A New Technology Breakthrough

Until now, video screens were not thought of as a medium from which barcodes could be scanned. This limited the realm of barcodes strictly to paper, giving them a low-tech stigma. Barcodes have been categorized as an old technology while Radio Frequency Identification (RFID) has been described as the technology of the future. However, the ability to read a barcode directly from a video display is a technology whose time is right because of the ubiquity of devices with video displays and network connectivity. A printed barcode is static and unchanging, but a video barcode is dynamic. There are four key attributes of video barcodes. First, a video barcode is a portable data file like an RFID tag, and is dynamic when connected to a network and can be written to by a controlling application or database. Second, a video barcode can be made more secure than an RFID tag, it is read optically so there are no electronic signatures that can be detected. Third, a video barcode can be distributed and controlled over existing communication networks without requiring its own special network like RFID. And, lastly, a video barcode is many orders of magnitude less expensive than an RFID tag that can range in cost from $0.10 to $100.00 (depending on the read/write range). Video barcodes will not replace RFID tags; however, for some uses they provide more functionality than RFID at an attractive cost.

In 2006, Tripletail received US Patents 7,070,103 and 7,118,040 "Method and apparatus for bar code data interchange." This patent pertains directly to scanning and utilizing barcodes from virtually any progressive or interlaced video display technology (TV, CRT, LCD, PDP, etc.) The delivery of data in a barcode to any video display is an exciting technology for many applications. Also, in 2004, Tripletail received US Patent 6,764,009, "Method for bar code date interchange", which describes the use of tagged information to sum up data for interchange in both printed and video formats.

What new business solutions and opportunities are opened with this patent? How is data transferred using video barcodes (VBC)? Let's begin by explaining the business impact of this newly patented technology.

Industry Applications

VBCs have a wide range of applications that can lead to many real business solutions. The Telecommunications, Entertainment, Retail, and Consulting industries are the first of many businesses that can realize improved services and greater customer loyalty with the help of VBCs.

Retailers can use VBCs both internally and externally to increase efficiency and improve customer satisfaction. Internally, a video parts catalog can streamline the process of updating, publishing, and scanning barcodes for small items at a hardware store, or perishables and bulk items at a supermarket. Checkout clerks will have up-to-the-minute pricing for bulk commodities that lack individual barcodes (like nuts and bolts or apples and oranges) at their check-out station monitors. Instead of flipping through a binder of

printed barcodes, they will efficiently search or scroll to an item and capture the centrally controlled price from the barcode on the screen. Management of a centralized database for such bulk commodities becomes as easy as management of more traditional labeled or packaged products with barcodes.

Retailers will be able to connect externally to customers using VBCs as well. With VBCs, retailers can push personalized coupons directly to cell phones and PDAs that customers can use instantly without needing to print. An electronics retailer will be able to send coupons for DVDs to a customer's cell phone based on a recently purchased DVD player. Instead of printing such an offer, the customer can present the video barcoded coupon over the check-out scanner and receive a discount off the movie purchase.

The entertainment and sports industry can revolutionize its ticket processing with VBCs. Customers can buy a ticket to a movie, concert, or sporting event online, download an encrypted and PIN protected video barcode to a cell phone or PDA, and securely enter an event by swiping their cell phone screen across a scanner. Without the need to print a ticket, customers will be free to find, buy, and use event tickets either last-minute or well in advance. The encryption of the VBC on the cell phone adds a high level of anti-forgery security.

In addition to improved mobile use of tickets, entertainment companies can benefit from bringing VBCs into the home. Barcodes on TV screens and computers will allow customers to buy products directly from an advertisement. With one scan, the customer can instantly go to a web page and all of the relevant purchasing information can be entered and sent off to fulfill the order.

The telecommunications industry can benefit from VBCs by allowing customers to utilize their networks in more ways more often. By increasing the daily utility of the video screens that customers carry in their pockets, telecoms will enjoy increased demand for their services.

Consulting firms have an opportunity to coordinate and utilize disparate information that needs to be organized in a proprietary system using VBCs. For example, a report generated in Excel by a client can be emailed with a 2D barcode optimized by Tripletail's *Data Without Boundaries*™ (DWB), received at headquarters, scanned directly from the computer screen, and accurately entered into a software program. Consultants can increase productivity by gathering information from many sources and compiling it in one central location without ever manually reentering or reformatting data, taking reports to paper, or compromising the security or accuracy of the data.

Video Barcode Technology

Barcodes
Barcodes are a means of encoding data for input into a computer system. Barcodes encode alpha-numeric, keyboard, or binary information in a machine-readable format.

When the barcode is scanned, the data contained in the barcode is decoded, and the device attached to the scanner interprets the scan as standard computer keyboard keystrokes. A simple 1D product barcode contains up to 30 text characters (letters and numbers).

1-dimensional barcode   2-dimensional barcode
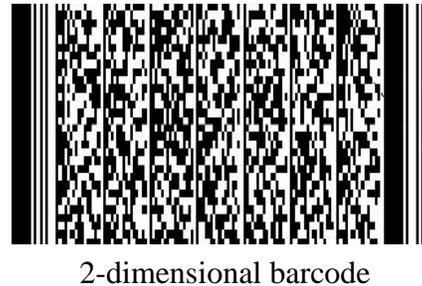
2D barcodes, which are essentially stacked barcodes, can contain significantly more information than conventional one-dimensional barcodes. Conventional barcodes get wider as more data is encoded. 2D barcodes make use of the vertical dimension to pack in more data. Two-dimensional code systems have become more feasible with the increased use of moving beam laser scanners, Charge Coupled Device (CCD) scanners, and Linear Imaging scanners. The 2D barcode stores data along two dimensions and is therefore capable of containing much more information than the 1D barcode (seen on many food products) or the magnetic stripe (seen on credit cards and some drivers' licenses). Depending on the type of 2D barcode protocol used, it can hold from 2,000 up to 7,000 characters, or enough to encode the text of a form. As an example, this particular paragraph contains roughly 1,000 characters. 2D barcodes are used for many applications. Currently 39 states include a 2D barcode on the backside of state issued drivers' licenses. Also, 2D barcodes are a highly accurate means of capturing and entering data because they include built-in error correction that eliminates false positive decodes.

Video Barcodes
Tripletail Ventures has developed a portfolio of intellectual properties and applications that leverage the proven benefits of barcodes, now in video displays. Exciting solutions for several industries and multiple applications will come from the combination of barcodes, optional tagging of data fields, and keeping barcodes off of paper. Video barcodes (VBCs) offer considerable advancements in the art of data capture, storage, and interchange by extending their application to a new medium - video displays. Barcodes have long demonstrated their utility in printed format, and Tripletail Ventures has greatly extended their utility by creating another format.

Video barcodes give rise to a tremendous opportunity to develop significant and meaningful applications in prepackaged software, custom software, television, digital radio, the Internet, and ATM machines. Tripletail Ventures has developed operational prototypes of several such applications that offer mass-market appeal, both at a consumer level and for business. Due to the breadth of these applications, the ease of widespread

implementation, and the functionality they offer, these applications will drive demand for new scanner-enabled devices, such as computer mice, cell phones, PDAs, etc.

VBCs possess several inherent qualities that offer significant advancements in this digital age. First, VBCs are interactive, allowing for a two-way interchange of data. Secondly, VBC interaction is not constrained by operating systems, software, hardware, or the compatibility of such systems. Any data represented by a video barcode may be universally interchanged across disparate systems, without expensive middleware. By simply scanning the video barcode, in a similar manner as performed at the grocery store checkout lane, data is instantaneously transferred.

Video barcode benefits include:
- A universal data interchange across any operating system at point-of-use without middleware
- A universal data interchange across any software platform at point-of-use without middleware
- Enhances the functionality of B2B and B2C transactions
- Eliminates the need to re-key data and overcomes the errors associated therewith
- Reduces the need for complex integration in management information systems
- An easy-to-use, interactive two-way electronic data interchange

Conclusion
Tripletail Ventures' video barcode technology is ready to enhance the way people interact with businesses, advertising, and their environment in general. We've outlined some of the first applications for development in this brief paper, but there are other solutions to be developed. Working with customers and collaborators, Tripletail will be able to bring innovative and focused video barcode solutions to market.

For More Information
Contact Paul Staman at Tripletail Ventures, Inc., (319-622-5178), or e-mail info@tripletailventures.com.

Tripletail Ventures, Inc: Video Barcode