

# **How to Choose a Photo ID Badge System**

**What you should know before you buy.**

A Buyer's Guide  
prepared by  
New England Security & Communications

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About BadgeBuilder®

Three systems for three budgets

# Introduction

So you're looking for a photo ID badging system for your organization.

Where do you start?

Will this be your first badging system or an upgrade? Are you looking for individual components to work with an existing system? Do you just need a replacement part?

If this is your first venture into the badging world, you probably have a number of questions running through your head ...

- What products do I need?
- What are the best products?
- How much should I expect to spend on this?
- How much of a system do I need?
- How much of a system is too much?
- How do I know if everything will work together?
- Will I be able to upgrade if my needs change?
- What can I do to shop intelligently for the right products at the right price?
- Is there anyone out there who can pull all this together for me?

We've been doing this for a long time (since 1994). We've heard all the questions. We know what your concerns are and we know how to help. Every day, we hear from prospects looking for their first badging system or customers looking for upgrades and replacement components.

We prepared this report with you and them in mind ... hoping to make your purchasing experience easier and more enjoyable. Moreover, it's been our experience that an informed shopper will become a satisfied buyer and ultimately a repeat customer.

Obviously, because we sell badging software, systems and products ourselves, we have a certain bias for our own products and technologies, but we have tried to be careful to provide you with a balanced, objective overview of the badging market.

We hope you find this report helpful. And we would appreciate your feedback.

The Team at New England Security & Communications

## **A brief history of badging systems**

Although recent events of terrorism and natural disasters have heightened our awareness of and concern for security, ID badges have been around for a long time.

Large employers, hospitals, schools and public institutions have always relied on some form of identification to ensure individuals are legitimate employees, visitors and customers.

Over the past decade or two, badging systems have gone through an enormous transformation.

The early badging systems were modest at best – paper cards with Polaroid® photographs that could then be slipped into a plastic sleeve and pinned onto a shirt or jacket.

But the world of badging systems changed dramatically with the advent of PVC card printing technology. With this new technology, high resolution photos and text can now be printed directly onto durable, tamper-proof hard plastic ID cards.

The early PVC card printers were slow and prone to breaking-down. But recent models are now delivering improved speed and consistent print quality along with more and more capabilities.

Today any organization, regardless of size, can produce high quality photo ID cards on their own using in-house staff.

## **Today's systems and technologies**

There is little doubt that the advancement of PVC card printing technology has revolutionized the badging world. And we continue to see improvements of both price and performance in the new printers that are coming onto the market.

But printing is only part of the equation.

We are also seeing incredible advancements in the technology of all of the other components – the cameras, the cards, the card readers and the software – that make up the complete badging system.

For example ...

The cameras today are, for the most part, digital and are able to produce high quality, high-resolution, professional photographs. Low-end web cameras can be used for limited applications, however, and still provide very acceptable results.

The PVC cards and the card readers can now utilize bar codes, magnetic stripes, proximity technology or smart chips for faster and easier identification and tracking.

And today's software offers unparalleled flexibility and ease of use for complete control over your badging system. **But don't forget:** your software must be designed to provide the same functionality you are looking for with your other components.

## **Photo ID card applications**

Organizations use photo ID cards for various reasons. Here's a quick overview:

### **Type of organizations**

For some organizations, the nature of the work – meaning the potential for theft, privacy invasion, sabotage or terrorism – is the driving force. Banks, hospitals, transportation terminals, power plants, government buildings and any company doing business with the Pentagon have good reason to protect themselves from outsiders.

For many of these organizations, sophisticated access control systems are put in place in addition to the photo ID cards.

### **Size of organizations**

The size of the organization – the number of employees or visitors – also determines whether a photo ID badge system is needed. Typically, the need for a badging system starts at 50 employees. In addition to large employers and buildings, photo IDs might be used for large construction sites, sporting and entertainment venues and other public events such as fairs and road races.

### **Customer confidence**

Some organizations use photo ID badges as a way to reassure their customers that their visiting employees do, in fact, work for them. This application applies to couriers, contractors, service technicians and inspectors.

### **Customer loyalty programs**

Photo ID cards can also be used for non-security applications such as loyalty cards for grocery stores, restaurants and other retailers.

### **Specialized applications**

Finally, there are the specialized applications of badging systems.

If an organization wants to keep track of all its visitors, it will need a system that can verify appointments with employees inside the building and produce customized badges on the spot while the visitor waits.

Another specialized application would be a system to help keep track of assignments and locations of emergency responders – fire departments, police departments, health emergency teams – in the event of catastrophe.

In the same way, large construction sites, with many subcontractors coming and going, need a way to quickly produce badges and monitor the locations of all workers on the site.

## **The essential components of a badging system**

If you're starting from scratch and you need a complete system to create high quality photo ID badges, here is a quick overview of what you will need.

- Badging software – all software has the ability to create card layouts and perform at least minimal database functions, but if you have special requirements, you will need software that matches those requirements. For example, if you need to print personalized information on both sides of your card, you will need software that can accommodate dual side printing.
- PVC card printer – PVC card printing is the technology of choice today, and there is no shortage of printers available today. But PVC printers vary greatly in price and performance. And much like the software, PVC printers must have the specific functionality you need.
- Camera – most web cameras and digital cameras will meet your needs. Cameras will vary by resolution, ease of use and overall functionality.
- PVC card reader (optional) – A PVC card reader is only needed if you plan to use bar codes, magnetic stripes or other specialized cards for automated tracking.
- PVC cards – standard graphics-quality PVC cards are needed, and special types are available if you need magnetic stripes on our cards, or they need to operate with proximity or smart-card access systems.
- Ribbons – PVC printers use a technology called Dye Sublimation. The ribbons are a "one-time" use type, made up of sets of colored panels.

Different ribbons are available for color front only; color front, black back; color both sides; and other printing combinations.

- Clips, Lanyards and Reels – once the badge is printed there are a variety of ways they can be worn. A common method is to punch the card with a special hole punch, then attach with a plastic clip. Lanyards and retractable reels are also popular and available in a range of colors and styles. Lanyards should have a "break-away" feature to avoid the possibility of accidental strangulation.

**And don't forget compatibility.**

When you purchase individual components, the obvious question is will all this work together? If you have any questions about compatibility, please call our Technical Services team at 508-476-9200.

## **How to decide what your organization needs**

Before you can even begin to shop around for components or systems, you should have some idea of what you want your badging system to do.

Yes, we know you want it to create badges, but there's much more to it than that.

What makes this more complicated is that different components and systems are designed to meet very specific needs that you may not have even considered at this point.

To help you determine your specific needs, we've prepared a series of questions that will help you pinpoint what functions you need in a badging system. You will then be in a position to find products that match those needs.

If you were to call our office, we would ask you a series of questions that will help us help you identify those functions ... and eventually provide you with the solutions that match those goals.

Here are some of the questions we would ask ...

- Will your cards need a bar code, magnetic stripe or something more sophisticated like a proximity card or smart card?
- Will you need to print on both sides of your ID badge?
- Is the information printed on the back of the badge the same on all badges?
- Do you want to print in color?

- Do you want to print horizontal or vertical cards?
- How many badges will you need to print initially?
- After the initial printing, how many badges will you need print on a monthly basis?
- Will your badges need to be printed for visitors while they wait?
- Will the ID badge be worn or carried?

## How products differ

All of the components that make up a badging system – printers, cameras, readers, software – have different features and capabilities. And much of those differences are reflected in the price.

Once you determine what you need or want in terms of production capabilities, you will then be directed toward a specific group of products.

If you find that those products exceed your budget, you may need to revisit your specifications and perhaps make some sacrifices in your desired capabilities.

But always remember, there are badging components and systems to fit almost any budget.

Additionally, you should always be mindful of the compatibility of different products. Unless you're purchasing a full system (which is already configured for compatibility), there will always be some concern whether different products can work together.

Our technical team at BadgeBuilder® can help you with that.

### Printers

Printers come with the greatest variability of features and will likely drive a significant part of your decision-making.

- Hand-fed v. auto-feed  
Hand-fed printers are less expensive than auto-feed printers – and may seem like a reasonable compromise. But be prepared. Hand-fed can get very tedious for larger volume or frequent printing.
- Single-sided v. double-sided

Single-side printing is sufficient for many applications. For those needing double-sided printing, ask yourself if both sides need to be personalized to the individual. In other words, if one side can be generic to all cards, you may be able to pre-print your cards, then use a single-sided printer for the personalized information.

- Laminate v no laminate.  
The finished product for all PVC cards is hard plastic, but to protect your printing from deterioration or other damage, many organizations prefer having their cards laminated. Some printers come with the capability. Lamination is recommended when you're cards are frequently exposed to the weather or a chemical environment. Lamination also provides an additional level of security against tampering.
- No technology v. magnetic encoder v. smart chip encoder  
If you plan to use magnetic stripe or smart card badges for use with other systems like access control, then the printer can be fitted with special encoding units for these technologies. There is, of course, an added cost for this functionality. In addition, you need to make sure that the badging software also supports this technology.
- Technology – Direct Dye Sublimation v Reverse Transfer.  
Direct Dye Sublimation is the most common technology for printing on PVC cards, but requires that graphics-quality card blanks be used. These have a flatter surface than standard blanks. Reverse Transfer printers print the badge image onto a transfer ribbon which is then laminated onto the surface of any PVC card blank, along with a protective coating. Badges printed with this technology tend to last longer, but the increased complexity of the printer increases their cost.
- Edge to Edge Printing  
Most people want to print across the entire surface of the badge card, from edge to edge. Not all PVC printers have this capability, often called "full bleed" printing.
- Print Speed  
Printing speeds can vary widely with speed and price being closely related. Time to print a single badge can vary from 20 seconds to nearly a minute, depending on printer model.
- Anti Fraud Technology  
Printers can be supplied with the capability to embed images in the surface of the badge which can be viewed when held at an angle. On some printer

models the image can be customized, and on others a range of predefined images are available. Special card blanks are also available which allow this image to easily be seen in one area of the card.

Pricing for PVC printers range from \$997 for an entry level Pronto hand-fed, single-sided printer to \$5500 for a high-end Tango+L auto-feed, double-sided, laminating printer.

## **Cameras**

Generally there are two groups of cameras available for photo ID badge creation:

- Lower-end web cameras can meet most minimal needs. They often only provide minimally acceptable resolution and do not usually include flash capability.
- Purpose-designed digital cameras. These are specifically designed for use with ID badge software and offer rugged construction, high-resolution and excellent flash capability.
- Commercial digital still cameras are easy to use and very affordable. Their software can often support “live image capture”, however control of the flash feature varies from manufacturer to manufacturer. An advantage is that they can function independently of the computer, allowing photos to be taken in the field and imported into the badging software later.

When considering your camera options, remember that most PVC card printers work at 300DPI (dots per inch). This means that a photo image covering the entire surface of a horizontal card will be 1014 x 636 pixels. Of course, the photo area will most likely be smaller than this, so getting a camera with a high resolution will not necessarily create a better image on the badge. Cameras which provide a 1024 x 768 pixel image will be satisfactory.

Pricing for cameras range from \$150 for an entry level Logitech web camera to \$799 for a high-end Lumenera digital still camera.

## **Readers**

If you are only going to be checking ID cards visually, you won't need to take advantage of the newest technologies. And you won't need a card reader either.

But to minimize human error and improve efficiency, many organizations want the ability to quickly and automatically identify employees or visitors with a quick swipe of the card. There are several technologies that can provide this capability.

- Bar codes  
Bar code technology has been around for a long time. A bar code is either pre-printed on the card or printed as part of the individual ID process. The bar code is internally linked to the assigned employee or visitor. Security guards can then wave a wand over the bar code to quickly identify the individual.
- Magnetic stripes  
Magnetic stripe technology is used to read your credit card. The stripe on the back of your card includes an invisible, but unique code that is connected to you.
- Smart cards  
Smart card technology uses embedded circuitry that can be programmed to store information. Smart cards fall into two categories – contact smart cards (for offices and internal use) and contactless smart cards (for outdoor use and industrial settings).
- Proximity cards  
Also known as RFID cards, these are pre-programmed with a unique number at the factory, and this can be read by holding the card near the reader.

Regardless of the technology, the card readers are all designed to link back to the PC and software which records and logs in the activity for data storage and reporting. This connection to the computer is made possible via USB or wireless via Bluetooth.

Pricing for readers range from \$150 for an entry level proximity readers to \$999 for a high-end BlueTooth® reader.

## **Software**

Your badging software is the control center for all of your badging activities. Many packages share basic features like card layout and data field selection.

Where you will find the difference is in the higher end features like:

- double-sided card design and printing
- activity reporting
- signature capture
- Mifare® smart card encoding
- Unlimited badge design capability

- Unlimited number of badges in the database
- Interfaces for a wide range of database types

### **Supplies**

The supplies you will need for your badging system include:

- PVC cards
- printer ribbons
- printer cleaning kits
- badge holders, clips, lanyards or reels
- badge punch

The PVC cards will vary depending on the makeup of the plastic as well as the technology (magnetic stripe, proximity, smart chip) that you may or may not want to have embedded in the cards.

Ribbons will vary depending on different color capabilities for different printer brands/lines.

## **About BadgeBuilder**

BadgeBuilder® is a long-standing leader in badge creation software for the Windows PC.

Founded in 1994 – specifically to develop the first MS Windows-based security ID badging software – offers a range of software products to meet virtually any type of badge design requirement..

As a subsidiary of New England Security & Communications, BadgeBuilder utilizes NESCS's 20+ years of experience and commercial alliances in the high technology security industry.

In addition to badging software, the firm provides a full range of badging components and supplies to provide clients with fully compatible, turnkey systems.

To learn more about BadgeBuilder, please call 508-476-9200 or visit our website at [www.badgebuilder.com](http://www.badgebuilder.com)

## Three Systems for Three Budgets

To simplify the selection process, BadgeBuilder has pre-configured three complete badging systems for different budgets. The system you select will depend on your badge printing requirements.

Many of the components listed under each system can be replaced by other components.

Low-end system (from about \$2300)

- Printer and supplies
- Camera
- Software

Mid-level system (from about \$4000)

- Printer and supplies
- Camera
- Software

High-end system (from about \$4800)

- Printer and supplies
- Camera
- Software

### **Prefer to build your own system?**

BadgeBuilder can help you find and select the right products to meet your needs. Call us at 508-476-9200 and we'll help you put together a system just for you.

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**Notes:** All prices are subject to change without notice and reflect approximate costs for comparison purposes only. BadgeBuilder<sup>®</sup> is a registered name of New England Security and Communications. All other registered names are the property of the respective companies.