



ABC's of VDP

A VARIABLE DATA PRINTING BASICS GUIDE



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The Promise of Personalization



Today's consumers expect vendors to acknowledge their personal interests and preferences. They are looking for "my brand" and insisting that "my brand" be delivered in the way "I" want. In effect, by personalizing communications, marketers give consumers what they want.

Smart marketers understand the value of personalized communication. Advanced variable data printing (VDP) has paved the way for cross-media technologies that give many companies a competitive advantage. As more and more print providers are adopting the technology, no one should underestimate the power of personalization.

Enabled by Advanced Digital Printing

Digital printing is a fast-growing field that is capable of producing a variety of products, ranging from business cards to booklets. Users can design digital documents with desktop publishing software and send them directly to the output device. Computers manage the digital printing workflow, from controlling jobs and equipment to billing and accounting. This technology is capable of producing one to thousands of copies with fast turnaround times and no need for massive runs to achieve economies of scale.

Variable data printing uses digital technology to vary one or more elements in a printed piece, in the course of a single print run. Content comes from a computerized database, inserted according to "rules" on how the content should be used for output — for instance, which pieces of text or graphics to use and where they should be placed. As a result, VDP is ideal for taking advantage of the increasingly rewarding field of full-color, graphically rich, customized communications.

VDP is also known as...

- Personalization
- Customization
- VI (Variable Information)
- One-to-one marketing/communication
- Versioning

ABC's of VDP: A Variable Data Printing Basics Guide contains a look at the benefits of variable data printing, and an overview of the technology. It describes how to mount a successful one-to-one marketing campaign by integrating VDP into existing digital printing workflows and cross-media technology — including examples of this integration that demonstrate the benefits of variable data printing.

"How Did they Know I Was Interested in That?"

Databases contain information about each individual that can be used with rules to personalize each document. Organizations can gather information through pull and push marketing campaigns, or even during business

transactions. Companies can also buy databases of contact information for direct marketing efforts. Maintaining a relevant up-to-date database is key to creating effective personalized content.

The ultimate level of customization would be a unique communication for each individual, tailored to that individual's information and interests. Short of that level, there are many other degrees of customization in one-to-one marketing.

Traditional Mass Mailer: The envelope is addressed to "Resident" but every resident receives the same thing inside, such as a book of coupons. This basic approach has many variations:

1. The contents can change by ZIP code or other region ("versioning"). The coupons might be good only for businesses within the same ZIP code as the resident.
2. The recipient's name can replace "Resident." Other basic information can change within the document.

Variable text and images: Both text and images change from document to document.

Page Selection: Some VDP applications, such as Fiery® FreeForm™ and PrintShop Mail™, are capable of selecting which pages to output. For example, a college class catalog would only print the subjects that the student is interested in.

Illustration 1: Basic Mail Merge vs. Enhanced VDP Capabilities



Mail merge technology allows only variable text (shown in red).



VDP technology allows an almost infinite variety of text and graphics within a print run.

The Benefits of Personalization

Larger sales. Higher returns. Greater customer loyalty. Marketing studies repeatedly show that personalizing communications can boost their effectiveness. Variable data printing, a form of on-demand printing, uses digital printers to make customized communications more economical and easier for printers to adopt. VDP allows for one-to-one marketing by delivering a personalized message directly to customers that increases response rates.

Growing numbers of printers and print customers are reaping the benefits of digital printing technology. As an alternative to traditional printing, digital printing makes short-run color printing jobs more economical to produce and makes customized communication possible. ABC's of VDP: A Variable Data Printing Basics Guide focuses on the lucrative field of custom communications, which has been made possible by the digital technology of variable data printing.

What Personalization Is



At a basic level, variable data printing is the use of databases and desktop publishing software to combine static and dynamic elements on a page to create a customized printed piece. The content can consist of text and images (including graphics and photographs) in electronic form. VDP applications take content from the databases and integrate it into a document according to rules that specify which elements are used and where they are placed. As a result, whether a print run is ten prints or 10,000, VDP can make each piece different by changing the information on each print.

The value of variable data printing stems from its ability to support customized printing and make such printing efficient and economical. Customization increases the document's attractiveness and improves the effectiveness of the message it contains. Because the database contains information related to the audience for the printed document, the document can feature customized elements that have special appeal to that audience. This personalization greatly improves response rates and customer relationships.

Today's VDP is much more powerful than it was even a few years ago. It can dynamically assemble four-color images, graphics, text and other objects to create attractive, highly customized documents, and is easy to use with Web-to-print applications and other cross-media marketing campaigns.

Variable data printing used with digital technology is capable of a seamless integration, in which the name and address, images and content can be changed as though the document was printed expressly for each individual recipient. There are many different ways printers can use VDP to supply personalized communications.

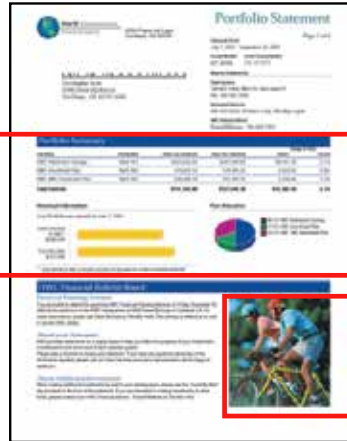
TransPromo Communications

The combination of transactional and promotional documents, or TransPromo communication, is becoming increasingly popular. Transactional documents, such as utility bills and financial statements, contain variable data from customers about personal transactions. In contrast, promotional documents contain a call to action or marketing message and rely on visual pizzazz rather than personal content to attract attention. Take, for example, the practice of enclosing generic color promotional inserts with a monthly credit card statement. The recipient always reads the credit card statement because it contains important personalized information — in this case, the amount of money that must be repaid. The insert, in contrast, is disposable. Variable data printing offers the opportunity to embed highly relevant, colorful promotional material within the transactional statement and guarantee that its message will be noticed. The addition of color pie charts or other graphical representations of data can make information clearer and easier to understand. (See Illustration 2).

Illustration 2: The Value of TransPromo The marriage of transactional and promotional communications incorporates marketing material with personal information that the consumer is guaranteed to look at.



Generic Transactional Document



Increase attention span and recall

Color emphasizes important points and increases retention 82%

Cut through the clutter

Consumers are 55% more likely to pick up a piece of full color material

TransPromo communications create an opportunity to improve and strengthen customer relations while promoting products or services.

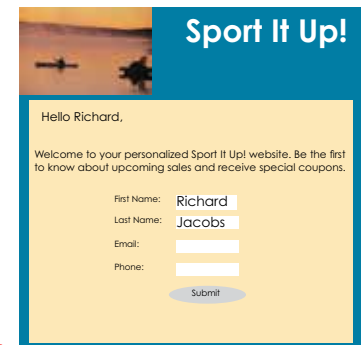
Cross-Media Marketing

Cross-media marketing uses multiple marketing channels to communicate with customers in an integrated marketing campaign. Communication with the customer should take place in every medium the customer attends to. The following example about a sporting goods store shows how smaller companies can benefit from cross-media and one-to-one marketing.

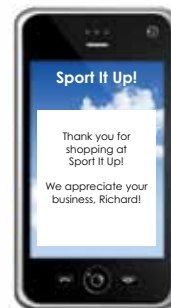
A small, sporting good store expanded its business with new retail locations and was developing a new Website. They designed a multi-channel marketing campaign to increase



Direct Mail
Contains relevant information and links to other media



PURL
Contains information about the customer

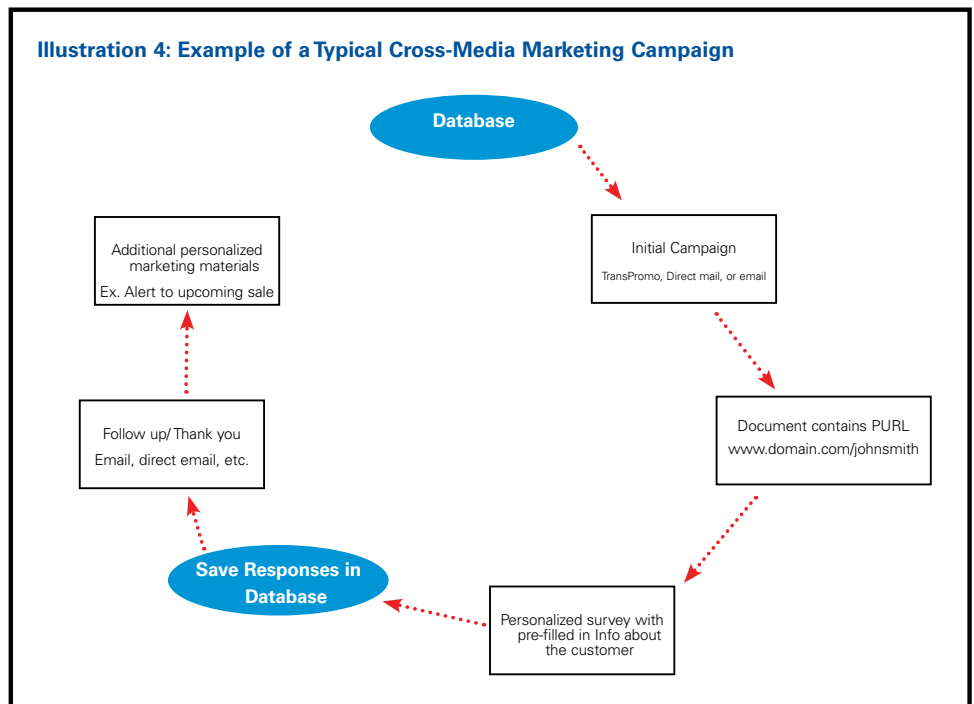


Mobile Message
Gives the customer easy access to information

Illustration 3: Example of a Sporting Good Store Cross-Media Marketing Campaign

sales and attract new customers, while growing relationships with existing customers. It used consistent branding and messaging across all channels to create the comprehensive campaign. In order to drive business, they used personalized direct mail, emails, print ads and interactive QR codes as marketing strategies. A coordinated message across all channels and personalization was key to creating an enjoyable customer experience and relationship. Results included significant new sales from redemption of personalized direct mail coupons and significant retention of new clients.

The cross-media marketing campaign was able to attract customers across multiple channels and made a far greater impact than generic direct mail. The continuous branding and messaging across all channels created a unique and positive experience for customers (See Illustration 3). This is an example of personalized marketing in which the actual value of any one sale is not substantial, but the value of a customer relationship is significant.



Personalized URLs

Personalized URLs create one-to-one communication as a call to action for customers to respond to a personalized Web page. PURLs can work as variable data Web pages — much like printed VDP documents. For example, a printed direct mail card would contain a PURL, which would send the customer to a personalized landing page on the Internet. PURLs typically have the same look and feel as the direct mail and optimize conversation with highly relevant content for the customer. The combination of VDP and other digital channels allows for a more unified cross-media marketing campaign.

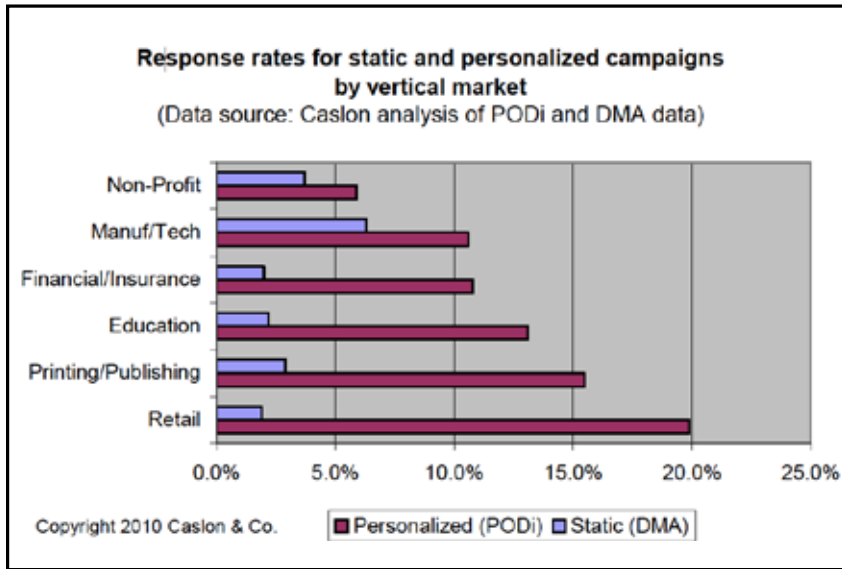
Benefits for Marketers

Print continues to be a key factor in personalized direct marketing campaigns. Personalized marketing programs increase overall revenues and profits as well as improve response rates and customer loyalty. VDP continues and digital solutions and expand the reach of cross-media marketing and personalized communication.

Today's trend toward targeted marketing will only intensify. With its intelligent database-driven focus, and dynamic visuals, VDP technology thrives in the competitive marketing environment. For organizations with the right resources, marketing support and business knowledge, VDP is more than just a powerful tool; it's a strategic necessity.

For print specifiers, the bottom-line benefit of variable data printing and cross-media marketing is a more effective way of communicating a message to customers and allow them to:

Chart 1: Response Rates to Personalized Campaigns by Vertical Market



- Achieve higher return on investment.
- Track responses and gather customer information.
- Do more cost-effective promotions.
- Optimize targeted communications.
- Gain greater mind share by providing relevant information.

Benefits for Print Providers

Print providers, such as digital print service bureaus, commercial printers and quick printers, should care about VDP because the technology enables them to offer additional services—such as those listed in Chart 2—to their end customers, the print specifiers. VDP and the services related to it add value to the printed page and encourage customer

loyalty. It would be much more difficult for the customer to establish a new relationship with a different service provider for each of the additional services.

Service providers gain the opportunity to move away from the price pressures of commodity-based pricing to value-based pricing. They can switch from pricing by the cost per page to pricing based on the value of services provided in a complete job.

For print providers, the bottom-line benefit of VDP is increased business opportunities that translate into new services that command higher profits.

Because variable data printing depends on the use of databases, print providers can expand their service portfolios and tap into new revenue streams:

- **Data clean-up:** Removing obsolete records and incorrect information; eliminate redundant entries
- **Data mining:** Searching large volumes of data for information relevant to a specific purpose
- **Specialized design services:** Creating document layouts and templates for variable data
- **Resource management:** Storing, tracking, updating, and otherwise managing a customer's digital assets, including files and databases
- **Customized campaign management:** Advising customers on creating and running a variable data marketing campaign
- **Response monitoring/reporting:** Tracking and analyzing feedback to marketing campaigns to help customers measure success
- **Cross-media services:** Re-purposing output for different media, such as direct mail, email, PURLs, or mobile devices

Chart 2: New Business Opportunities

How Personalization Works



All forms of one-to-one marketing require information about the customer and can involve gathering more information about the customer after an initial contact. This knowledge of the customer and the customer's interests is necessary to create the personalized communication that establishes a one-to-one relationship. The advertiser must be able to target customers who would be interested in the advertised product, and then personalize the promotion in ways that are attractive to those customers. Information must be more than just personalized, but also relevant and intriguing.

The marketer must maintain a delicate balance between collecting information and maintaining the consumer's trust that the information will be used for the consumer's benefit. They can do so by using the information they have assembled to add value to the consumer's activities on the consumer's terms.

Through credit-card receipts, for example, a financial services company might learn that a customer has children and shops regularly at a particular children's clothing store. The company could use that information to build customer satisfaction and loyalty by offering money-saving discounts for children's clothing and toys. This use of the customer's data benefits the customer. An inappropriate use of the data would challenge the relationship and risk turning the customer away.

Components of Variable Data Printing

Illustration 5 and the definitions below show the major elements in a typical variable data printing project.

Database: For most variable data printing, a simple table containing the information, such as first name, last name and address, that will vary between each document. Applications such as Microsoft® Excel® or FileMaker Pro® can create such databases.

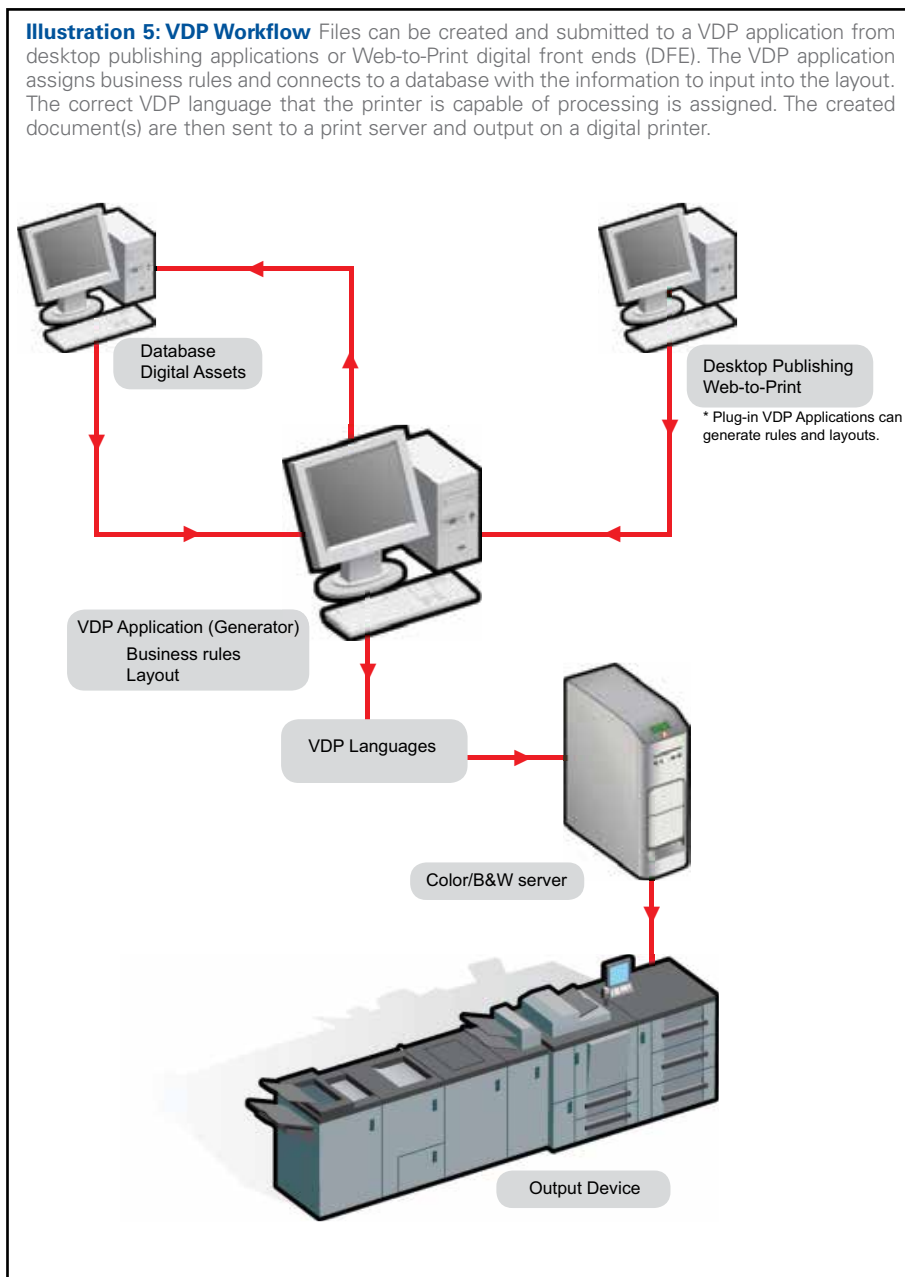
Digital Assets: Users can store variable content like images and graphics in a digital asset management (DAM) system or in a location that the database will reference to locate the correct file.

Business rules: These rules specify what variable content to use and where to place it within the document. Rules can use conditional formatting to select content depending on information in the database. Users can write or program them in the variable data printing applications.

Layout: Use common desktop publishing or word-processing software to create a template for the document. The design must accommodate the placement of variable content. Some desktop publishing software uses plug-in VDP applications to assign rules for the layout.

VDP applications: Software that is capable of creating layouts for static and dynamic content and connects with the database to assign what and where to place content. The application prepares the document for printing.

Output devices: Printing devices that turn the digital files into hard-copy prints.



Successfully Providing VDP Services

For print providers, the keys to offering successful variable data printing services lie in adopting a broad project-management perspective and in partnering with their customers. Not only do print providers need to understand the digital-printing process, they must also develop expertise in designing documents for variable data and in the use and management of databases. They should be ready to help their customers justify the use of VDP. That means reinforcing a strategic approach to VDP projects and discerning where VDP can add value to a marketing program.

In short, successful VDP service providers integrate print expertise with database knowledge, graphic-design skills and marketing know-how. These same elements apply to print specifiers as well, who need to look beyond the cost of printing to the effectiveness of the overall marketing program.

When a company already owns a database of information about their customers and has been marketing through direct mail, it can understand the opportunity for establishing a more personal relationship with customers through customized marketing.

Print providers can help the customer plan the marketing program by finding out some basic information:

- Identify the customer's marketing goals, whether they are customer retention, re-activation, lead generation or something else.
- Learn how the customer has conducted marketing programs in the past and help the customer uncover what formats their end customers prefer. Remember that the end customer calls the shots in personalized communications, and effective marketing talks to the end customer on their terms.
- Understand what customer data is available. Can it support the intended marketing program? Can it be shaped into a database used by the variable data printing system? Is there an existing database available for purchase?

Using Database Information

The variable data aspect of a personalization project calls for a knowledge of databases and how to work with them. Nevertheless, VDP service providers can consider databases nothing more than additional inputs into the printing process, just like standalone text and images.

A database should be considered another tool, in this case, a tool for working with data

A database, or databases, of information about the target audience is necessary to drive variable data printing. The customer may have such a database already. But if the customer does not, you can compile a database from existing information or simply purchase one. Since the printed product leverages information from the database for its effectiveness, the database must contain all the names, addresses and other information that will inspire a personal response to the printed product. Then organize the data into records and fields (categories) that match to placeholders in the variable print document to be used by the variable data software application. The same database can work for cross-media marketing purposes as well.

The designer must understand the available data and plan the rules, or logic, that specify which variable elements will be used and where they will be placed. Design resources can come from the printer, an outside agency or the customer's corporate art department. Variable data is especially effective when placed where the end customer does not expect it. For example, the end customer's name could integrate into a photograph of the product as though the name had been embossed on the product. There is a great deal of room for creativity in this process — both in graphic design and database innovation.

A comprehensive direct marketing campaign can create a consistent message that expands over multiple marketing channels. Software applications, such as DirectSmile® and XMPie®, integrate printed VDP campaigns to the Internet and mobile devices. This expands the reach of the campaign and maximizes the use of the customer database.

Campaign Measurement

The VDP service provider must be ready to help the customer focus on the overall value of personalized communications — in particular, the higher returns from such marketing — instead of the cost of printing alone.

It is possible to maximize cost-effectiveness from the start by zeroing in on a select segment of customers that are likely to yield the highest returns. Print solutions provide an effective starting spot for a personalized marketing

campaign. Approximately 33.1% of direct mail is digitally printed in full color to create effective marketing pieces. Personalizing these is the logical next step.

The marketing industry has developed many measures of results that take into account the complex influences on consumer behavior. Whatever measures are actually used have several aspects in common:

- **Response mechanism:** There must be a means of gathering data on the end customer's response to the marketing program. This can be as simple as records of a purchase or telephone inquiry. It can take the form of a Website or mobile response that the end customer can use to register their interest.
- **Reporting function:** Gather and report response data over time. Specify the length of the program and frequency of reports. The format of the reports should display results in a useful manner so analysts can find the information they need quickly and easily.
- **ROI calculation:** Analyze, compare expenses to costs and calculate the return on investment for the reported data in the variable data or cross-media marketing program.

Promotional/Demand Generation (Non-transactional)	Transactional
• Catalogs	• Proposals
• Brochures	• Enrollment forms
• Inserts	• Bills of materials
• Whitepapers	• Correspondence (call center)
• Promotional materials	• Policies
• Press/news releases	• Contracts
• Newsletters	• Invoices
	• Statements
	• Purchase orders

Chart 3: Types of Printed Communication (whitepaper: Effective Personalized Communications for Customer-centric Strategies, CAPV, July 11, 2003)

VDP Technology



To be successful in the commercial marketplace, a technology — regardless of its potential — must be powerful, flexible and economically viable. Because digital printing is not as dependent on economies of scale as traditional printing, it allows printers to start with smaller projects and build up as initial success leads to more business in customized printing. The key to growing a variable data printing service is first to select a VDP solution that can be integrated into the service provider’s existing workflow and then scaled to meet future customer demands.

Databases Are Key in VDP Technology

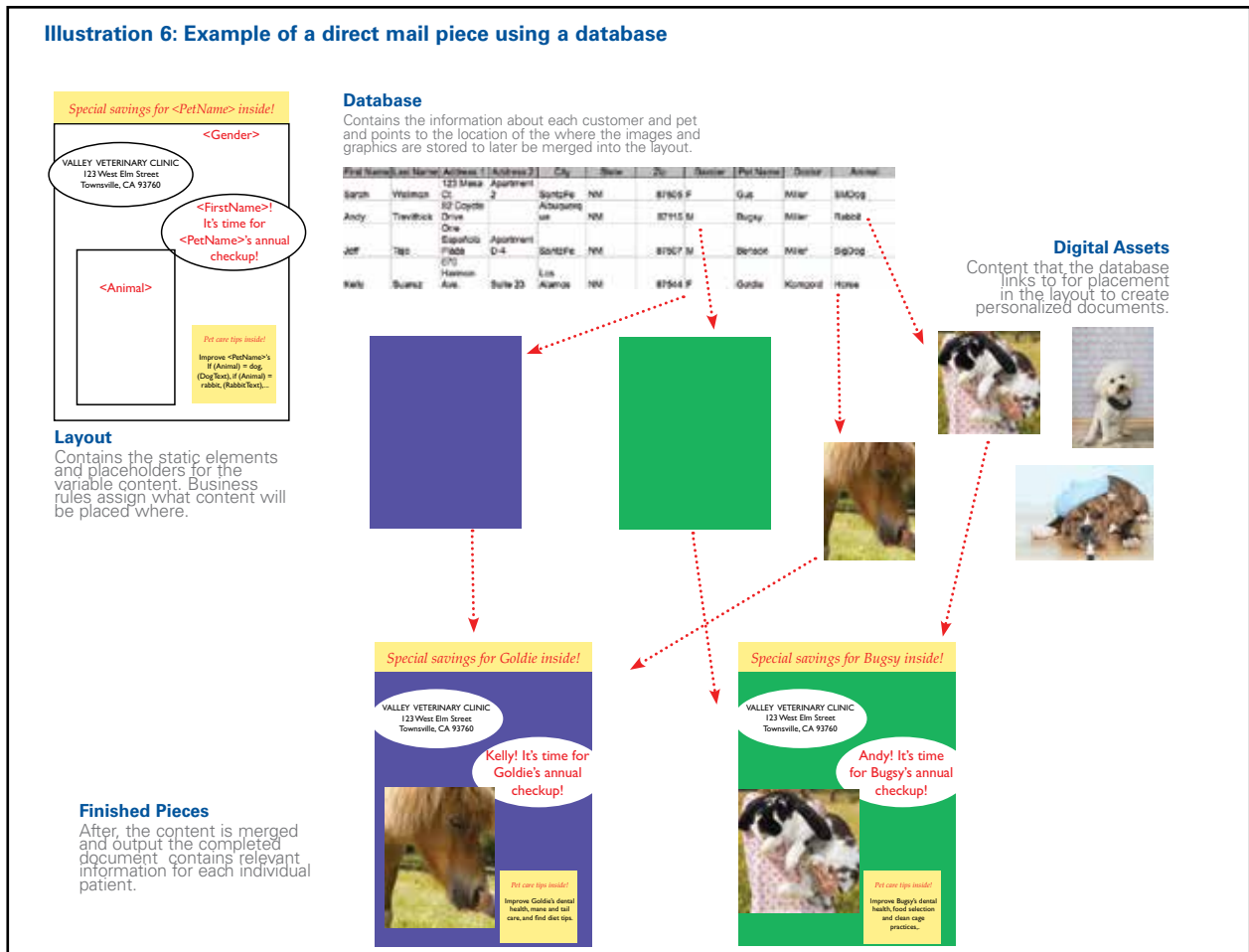
VDP software applications use the information in databases as input to create the different versions of the output document. A database is simply an electronic file that contains records of information organized in a particular way. Users can store digital assets, such as graphics and images, in a DAM system. The database can reference the location of digital assets that will be used as variable content. The two databases can work together as a relational database that links multiple tables together through common records.

Databases contain records and fields for each record. Each record has a predetermined number of fields. In a database about people, each person would be a record with the information about each person organized into separate fields. For example, each person would have fields corresponding to their first name, last name, address and phone number. A car dealership might keep a database listing the cars in its inventory (records), along with the model, year and features for each car (fields). VDP applications draw these variable elements from the databases, according to predefined rules, to create pages and documents that contain different images, text and graphics. The business rules are created in the VDP application to specify what variable content to use and where to place it in the document.

Using Data for Personalization

The information in the database would ideally relate to the audience for the printed document. It would contain information directly about the intended audience, such as names, addresses, financial data or information that they have disclosed in business transactions or customer surveys. The information can also take the form of items of interest to them. For example, a document aimed at families with children might include images of children at play with their parents or of products typically used by families, such as school supplies or toys. The database would include information about the children. Having relevant and complete data about the customer is key for an effective database.

Take the example of a customized marketing piece for the fictional veterinarian, Valley Veterinary Clinic (Illustration 6). To appeal to customers using one-to-one marketing, the small business created a full-color mini magazine instead of a generic postcard to remind customers of their next appointment. The vet understands its customers well and has compiled a database of those customers by name and pet attributes, such as type, size and doctor’s



name. For the printed magazine, the database will connect to digital content consisting of images of different types of animals, different sizes of pets and advertisements. Using a variable data application, such as FusionPro, and business rules that match up images with the targeted individual, Valley Vet can create, in the same print run, a mini magazine targeting a dog owner and a different mini magazine targeting cat owners. The mini magazine can feature images of different sizes of cats and dogs, and can remind pet owners when his or her animal is due for a check up.

Maintaining Databases

The information is entered a database manually at some point in time. In the case of a telephone directory, someone typed in all the information. In more complex databases, such as those used by enterprises to manage customer relations, different computer programs that feed data into a central database gather the information from different places. The separate programs might cover different areas of customer contact, such as from the call center, off the Website, through field service and from sales activity. Customer Relationship Management (CRM) is very important for gathering information about the customer and using the information effectively.

There are many computer programs designed to handle databases. Familiar desktop programs include FileMaker Pro and Microsoft's Excel. In an Excel spreadsheet, each row corresponds to a record, and each column identifies a field. One column would contain all first names, for example, and another, all last names. More powerful enterprise systems, such as products from Oracle and SAP®, store large amounts of information and cross-reference them in many ways.

The vast majority of VDP requires nothing more than a spreadsheet. Print providers can simplify working with databases by extracting only the information needed and putting it into a spreadsheet. Extracting the relevant information is called “data mining.” Print providers must identify the necessary information and who will extract it, and then specify how the information should be delivered.

Most often, the information delivered to the print provider takes the form of a “comma separated values” file, which is simply a text file where commas separate the information in fields. Spreadsheets and even word processors can open these files and automatically place the information into rows and columns. Customers can deliver the file on a removable disk or by email, like any other electronic file. The variable data application then reads the file.

Just as desktop publishing tools and graphics programs have enabled printers to expand their services, skill with databases can be the foundation for greater revenues. A database is just another tool – in this case, a tool for working with data. Printers regularly retouch photographs, adjust graphics and layouts and coach their clients on achieving the best print quality. They can also help clients combine “clean” databases by removing redundant or obsolete information, or extract relevant information. Printers who can offer a wider range of services appear better prepared than their competition and put themselves in a stronger position to win more business.

VDP Languages

Variable data printing languages specify a format for the data used in personalized printing. Select the appropriate language according to the file format and what the digital printer supports. Here are several VDP languages:

- Advanced Function Presentation (AFP): a language invented by IBM® that describes text and graphics.
- Fiery FreeForm and FreeForm 2: from Electronics For Imaging®.
- Personalized Print Mark-up Language (PPML): the industry standard developed by the Print On Demand Initiative (PODi at <http://www.podi.org>).
- PDF/VT: an ISO standard for document exchange.
- VI Compose/ VIPP: An open VDP language from Xerox®, used for the output of PostScript® documents.
- Variable Print Specification (VPS): a VDP language from Creo™.

Web-to-Print Submission

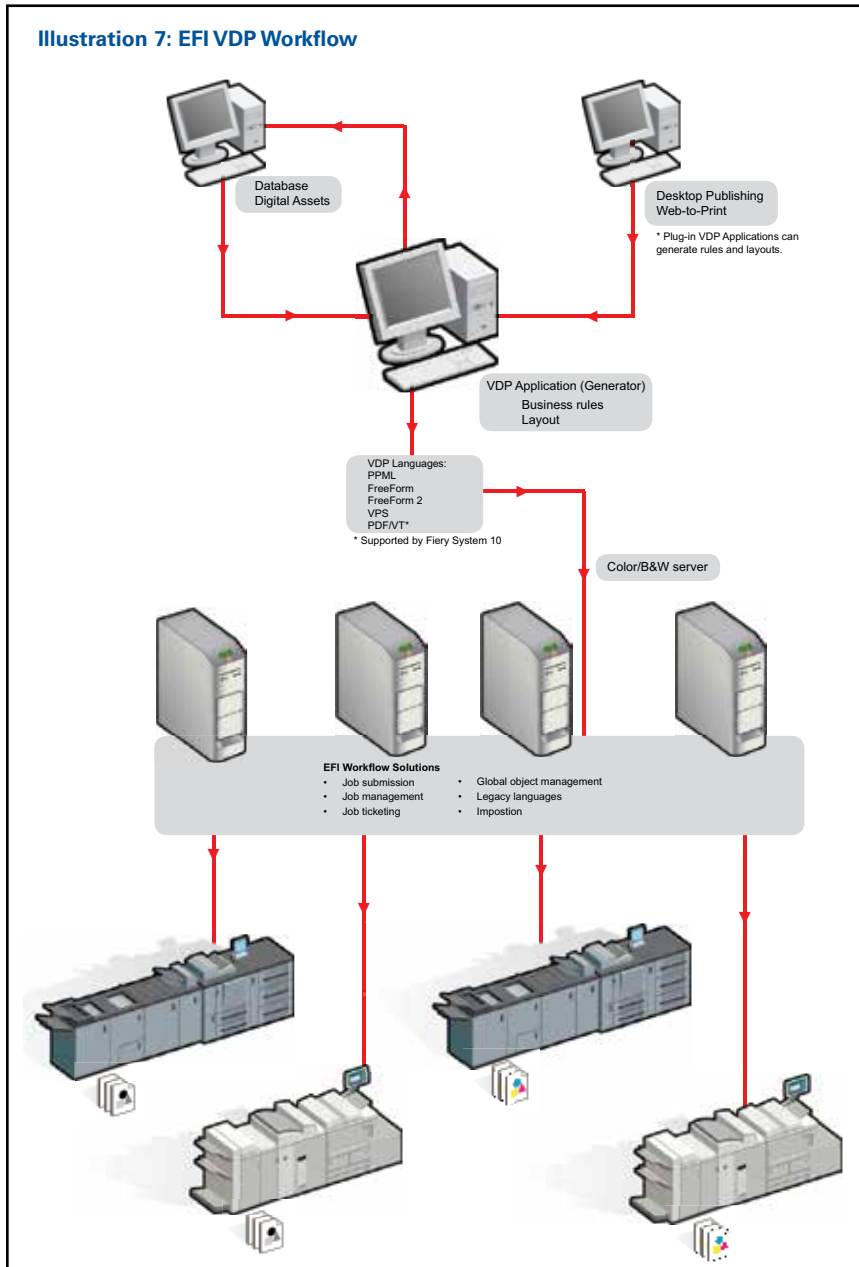
As more service solutions are being provided on the Internet, Web-to-print applications, also known as Print e-Commerce, create collaboration between customers and print providers. Print e-Commerce has many different functions and acts as a liaison between customers and printers by offering online job submission, job tracking and status updates for variable or static print jobs. About 46% of U.S. print service providers own a Web-to-print system. Web-to-print systems can link with cross-media marketing solutions to drive revenue and increase customer relations.

For example, Web-to-print applications allow print service providers to offer non-print services. Applications, such as EFI™ Digital StoreFront® and EFI PrintSmith™, simplify job submission and create an Internet-based customer interface. Web-to-print applications improve efficiency by increasing automation and improving customer

relationships, and are useful for both print specifiers and print providers. As VDP continues to be more attractive to clients, printers will adopt additional services to compliment variable data printing, and the marriage of VDP and Web-to-print solutions will continue to be a growing trend.

EFI Technology Integrates into Workflows

EFI offers VDP solutions designed to fit into existing workflows so printers can easily develop customized marketing campaigns, regardless of their complexity. In addition, EFI technology makes using VDP solutions easy for both VDP veterans and novices.



The latest in EFI's Fiery technology delivers fast, industry-leading, adaptable variable data printing capabilities. Choose any authoring tool and create static and variable elements with EFI's flexible and open, end-to-end variable data printing solutions. EFI's VDP solutions include the most comprehensive array of VDP languages such as Fiery FreeForm™, PPML, PDF/VT and support of other proprietary languages, such as VPS and VIPP. EFI's solutions enable printers to take advantage of evolving VDP technologies, regardless of the brand of database-management system, generator software, page-layout program or print device they use.

The latest Fiery Command WorkStation®, provides a single interface to manage the inputs and outputs of the most complex VDP jobs, and allows printers to manage their Fiery servers and variable data printing jobs from one location. The VDP Resource Manager is part of Fiery Command WorkStation that enables print providers to store, view and re-use RIPed objects on networked Fiery servers. Printers RIP and then "cache" – or temporarily store – VDP components for quick retrieval for printing. They don't have to be RIPed again. Along with a high-speed printing device, Fiery servers eliminate production bottlenecks and allow printers to print VDP jobs faster than ever before.

EFI VDP solutions fit seamlessly into workflows with open, scalable tools. The

capability to support industry standard formats, such as PDF/VT and PPML, makes adopting VDP a breeze. In addition, editing and checking variable layouts with imposition helps catch errors, which reduces waste and takes the complexity out of VDP. Web-to-print applications, such as EFI PrintSmith and EFI Digital StoreFront[®], make job submission simple and enhance production workflows.

*Fiery servers support
all standard VDP
languages.*

The high-performance, economical VDP solutions are flexible and scalable. So customers can easily develop customized marketing campaigns, regardless of their complexity. Because the solutions are powerful and fit easily into printers' workflows, they also are highly cost-effective. In addition, EFI offers a comprehensive suite of tools to maximize throughput and streamline VDP production.

EFI Educational Tools

EFI, as part of its VDP solution, has developed tailored support and service offerings for variable data printing. Web-based classes and tutorials are all designed to help printers build and effectively capitalize on the benefits of variable data printing. The Fiery FreeForm Sample Kit is a free, downloadable guide — complete with examples and templates on how to set up and run VDP jobs using Fiery FreeForm technology. In addition, eLearning videos and tutorials show in-depth capabilities and functions of Fiery server technology. These resources are available at <http://w3.efi.com/resources/overview>.

Personalization in Action



The Flora Garden Society is a worldwide, horticulture organization with multiple garden locations for customers to visit. When they consulted with ABC Advertising, they had three goals: first, to increase traffic on their website and capture more customer information. Second, they wished to decrease costs in publishing their newsletter while making it more appealing to its readers. Finally, the Flora Garden Society wanted to reach out to members and cultivate a passion for gardening across the nation by sending them a gift in the mail. The following examples show how ABC and XYZ Printing addressed these challenges using variable data printing.

Cross-Media Campaign

ABC Advertising Agency

To increase Web traffic and capture more customer information, the Flora Garden Society and ABC Advertising decided to create a personalized direct mail campaign that would appeal to customers' interest and connect them to the Website. The Agency also understands the target market and that any communication must include:

1. Mixture of images and information about gardens.
2. Subtle personalization.
3. A uniform style across all media types.

Following the subtle personalization guideline, the flyer placed the customer's name in several inconspicuous places and contained a personalized URL that can collect more of the customer's information and interests. The letter also contains a QR code that links to Flora's Website to increase hits. The format of the printed piece and Website maintained a similar look and feel. Together, the direct mail letter, QR code, and PURL created an effect cross-media campaign.

XYZ Printing

For the Flora Garden Society, XYZ used EFI Fiery FreeForm as the variable data technology. Fiery FreeForm is a unique technology that enables common (static) information to be RIPed only once while merging it with the variable (dynamic) information that changes on each page. The software caches the layout, which doesn't change, to create a "master" document. This allowed XYZ to send and process the layout once, and to re-use it for every personalized piece. A second, variable document contains the information that changes between documents. The two documents merge before output to create the personalized flyers.

The printed piece was on 8.5x11-inch coated paper, printed in full color on both sides, with rich graphics plus coupons with barcodes. See Illustration 8 for details.

Illustration 8: Example of Direct Mail Campaign

Master Freeform

Contains the static information and place holders for variable information.



Variable Data

Information filled in from the database that changes on each document.

<FirstName> <LastName>
<Address>
<City>, <State> <Zip>

<FirstName>!



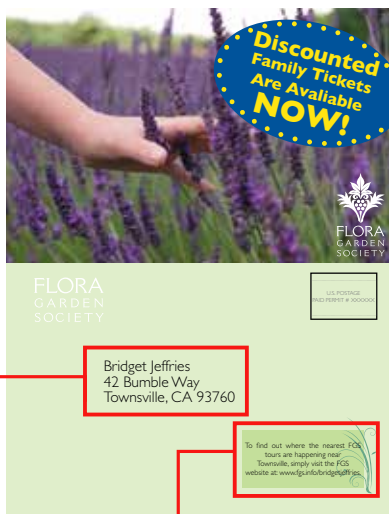
To find out where the nearest FGS tours are happening near <City>, simply visit the FGS Website at: <PURL>

Subtle Personalization

Makes the customer feel important.

Finished Piece

Merges the static and variable content.



Database Information

Content is filled in from the database to create personalization.

PURL

Personalized web page for the member to open communication and gather more information.



QR Code

Links to the Web site to increase traffic.

Customized Newsletter

ABC Advertising

In the second phase of the program, ABC Advertising Agency again turned to variable data printing for to cut down on newsletter costs and heighten reader appeal: a newsletter produced on demand, according to the customer's interest and location. Together, the Agency and the Flora Garden Society decided to customize and personalize the information in the newsletter to produce relevant content. Versioning allowed them to change content by zip code or region to inform customers of events that are happening near them.

To accommodate the different versions, the agency created several different articles and images. The newsletter consisted of letter-sized sheets that were folded in half for mailing. There was a mixture of generic content about the society, as well as personalized content for the reader. Newsletters could vary in page count, depending on the stated interest.

The customization drew from the data collected from the Society's VDP cross-media campaign and previously obtained customer information. Using the QR code to access the Website or visiting his/her own PURL allowed customers to indicate certain interest, such as gardening tips or gardening with children.

As a result, content that was relevant to the customer encouraged the feeling of a one-to-one relationship, as opposed to a large generic nationwide newsletter.

XYZ Printing

XYZ used PrintShop Mail for the VDP application and Fiery FreeForm 2 as the VDP language to produce the newsletter. Conditional page printing enabled XYZ to print only the pages desired. There was a possibility for each newsletter to contain up to 12 pages.

The caching capability of Fiery FreeForm 2 allowed for all the pages to be processed only once, making the printing process faster and more efficient. Versioning became extremely efficient because they could select which pages to output and add dynamic content to heighten the personal touch. See Illustration 9.

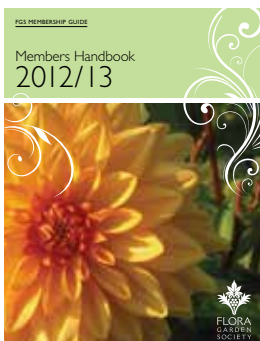
ID	NAME	ADDRESS	CITY	STATE	ZIP	PHONE	EMAIL	MEMBER SINCE
1	John Doe	123 Main St	Anytown	CA	90210	555-123-4567	john.doe@email.com	2010
2	Jane Smith	456 Elm St	Anytown	CA	90210	555-987-6543	jane.smith@email.com	2011
3	Bob Johnson	789 Oak St	Anytown	CA	90210	555-234-5678	bob.johnson@email.com	2012
4	Alice Brown	101 Pine St	Anytown	CA	90210	555-345-6789	alice.brown@email.com	2013
5	Charlie White	202 Cedar St	Anytown	CA	90210	555-456-7890	charlie.white@email.com	2014

Illustration 9 - Example of customized newsletter

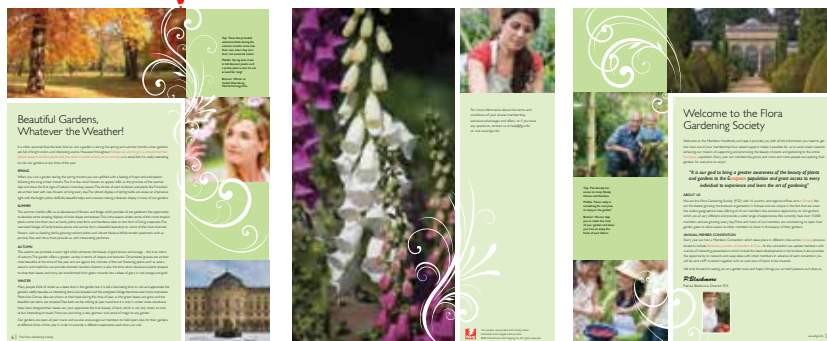
Step 1. ABC Advertising Agency exported files from PrintShop Mail with all possible pages to be included in the newsletter. This file went to XYZ Productions where they used Fiery FreeForm 2 to produce variable-page-length documents.

Step 2. XYZ programmed simple page conditions to "Print" or "Skip" pages based on a value in the database. Fields from a different portion of the same database populated the personalization with name and address information.

Step 3. Information requested by each member was then printed with his or her name on each piece. The agency folded each newsletter in half for delivery.



Fixed Page



Variable Pages



Personalized Gift

ABC Advertising

Finally, to reach new customers, the Agency came up with the idea to mail members a personalized seed packet. There would be multiple types of seeds for flowers and vegetables, depending on the member's interest. Customer information would be available through transactions, as well as from the previous direct mail flyer and PURL campaign. By blending all this information into a relational database, ABC was able to incorporate customer preferences to create the seed packages.

Using the newly updated Website, customers could indicate what types of flowers and vegetables he or she liked. This personalized product would be the perfect way to make the customer feel important and increase interest in the society.

FreeForm allows up to 100 masters to be stored on the Fiery server at a time. The various types of seeds can be sorted into different master documents; then XYZ can merge the variable content with the master to expedite the RIPing process.

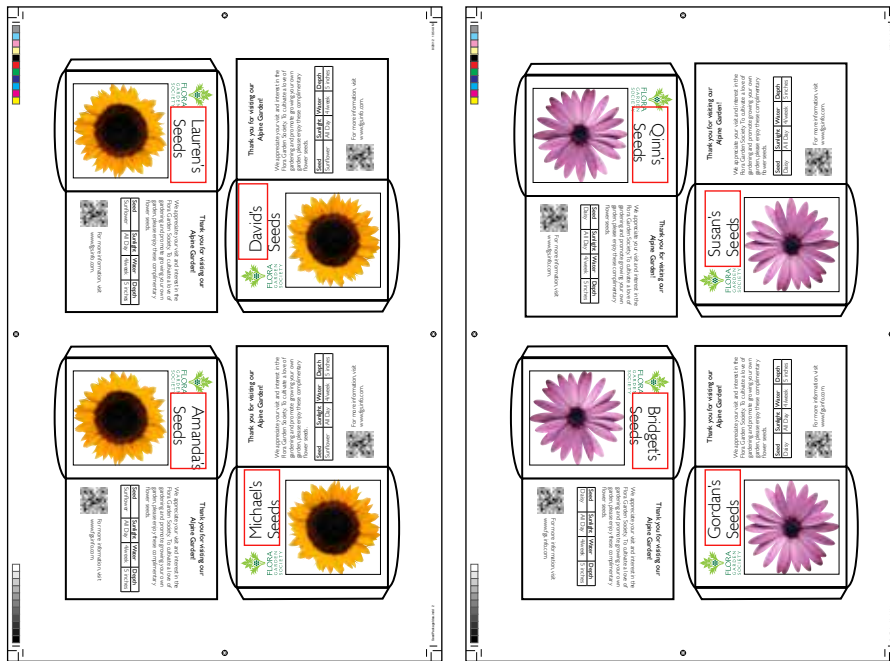
XYZ Printing

XYZ easily produced the personalized seed packages by marrying VDP technology and high-tech digital presses for a unique one-to-one marketing campaign. The agency consolidated seed packets by placing multiple packets on a sheet to reduce waste. See Illustration 10.

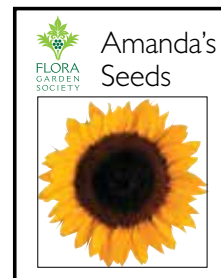
Efficiency and accuracy made XYZ Productions a great partner with ABC Advertising, and the Flora Garden Society was very pleased with their comprehensive marketing campaign.

Illustration 10: Personalized Seed Packet Example

Personalized printed seed packets on a press sheet.



Finished seed packet.



Front



Back

Conclusion



Print specifiers, such as corporate marketing departments, advertising agencies and marketing consultants have a message they want to articulate to potential customers. They want to drive and maintain a healthy customer relationship. VDP gives them the option of applying a push or pull strategy. Push marketing refers to pushing information out to the customer, such as in direct mail. The vendor drives push marketing. Customers drive pull marketing. The customer pulls information about the products in which he or she is interested. For example, a car dealership might have a Web page where customers can select the information they want to receive about a certain car model.

The two strategies can also work in tandem.

Potential customers who respond to the push marketing have an opportunity to pull more information, as in the example of a car dealership with a Website. By specifying the information they want about a new car, potential customers identify themselves as likely customers who already have a sense of what they want to buy and have taken a step toward a purchase from the dealer.

The value of using VDP with pull marketing is that it is far more cost-effective than push marketing. The customer has already targeted himself or herself, and the vendor prints a brochure only for a customer who is already interested in the product. The vendor provides more of what the customer is looking for and less of what they have no interest in. Illustration 11 shows a pull-marketing campaign in which customers specify the information they want through a Website.

Print providers that want to optimize the opportunities of personalization and their own investments in VDP, should look for customers who would be most receptive to the idea of a marketing program that uses variable data printing. These might include those who:

- Are currently implementing direct-mail programs.
- Want to increase repeat business because of the high cost of replacing customers.
- Own a database of information on their customers.
- Invest in personalization on a Website.
- Have a high-margin product or service.
- Have a large marketing budget.

The screenshot shows a web form titled "Feature Request Form" from a company named "cpi". The form contains several text input fields for user information: "First Name", "Last Name", "Company Name", "Address", "City", "State, Province or Territory", "Zip/Postal Code", "Country (if not USA)", and "Phone". Below these fields is a section titled "Selecting a Feature for" with a note "(Check all that apply)". This section includes several checkboxes: "Specialty Document Service", "Full-Color Service/Contract", "Special Service/Contract", "Printed", "Full-Color", "Web-to-Print", and "Variable Data Print". At the bottom of the form, there is a "Submit" button and a "Reset" button. A small disclaimer at the bottom states: "From time to time, cpi will send business-related email messages (product information, newsletters, etc.). Are you interested in receiving such information?" with "Yes" and "No" radio buttons.

Illustration 11: Web Pull-Marketing Campaign

Glossary



Advanced Function Presentation (AFP) — Invented by IBM for mainframe environments, AFP is a hardware and software architecture and a language that describes text and graphics. Also known as AFPDS (Advanced Function Presentation Data Stream).

Authoring tool — A software application used to create text or images, or to define layouts for documents.

Bitmap graphic — A format for describing graphics that uses a collection of tiny dots, called “pixels,” that together form a pattern. “Raster” graphics is another name for bitmap graphics.

Component caching — Storing a component temporarily in computer memory, called “cache.” Use cache for temporary storage of information that is frequently accessed or recently accessed. The next time the information is required, the computer checks the cache first, greatly speeding up retrieval. When VDP components are cached, users can quickly retrieve them for printing. When the components are stored in their RIPed form, printing performance improves because the components do not have to be RIPed again.

Component — In VDP, an element such as text, graphic, or photograph that is printed on a page.

Conditional processing — Changing the composition of a page, including text, images, and graphics, based on pre-specified rules or conditions.

Copy fitting — Fitting a block of copy into the space allotted for it in a document. Also called “text fitting.”

Customer Relationship Management (CRM) — Both a strategy and a set of technologies for coordinating all points of contact between a business and customers. Encompasses sales, marketing, customer service, field support, and other functions.

Cross-media marketing — Using multiple marketing channels to communicate with customers in an integrated marketing campaign.

Database — A table containing the content and information that will be varied in the printed document.

Data mining — Searching large volumes of data for information relevant to a specific purpose, for instance, looking for customers of a certain age group interested in buying luxury cars among a database of all car buyers.

Direct mail — Mail, usually advertising, marketing, and promotional in nature, which is sent directly to the recipient.

Encapsulated PostScript (EPS) — A standard file format using the PostScript language for importing and exporting graphics and formatted text. Many page layout, word-processing, and illustration applications can create (export) and use (import) EPS files.

Fiery FreeForm — A variable-data-printing technology that works with variable data printing solutions from EFI. It allows data that is used many times in a variable data printing job to be RIPed just once, enabling print engines to run at or near rated speed.

Imposition — Grouping and arranging pages for efficient printing on larger sheets of paper, taking into account the need to cut and bind the pages after printing.

Job Definition Format (JDF) — An XML-based industry standard designed to simplify information exchange among different graphic arts applications and systems, including Web-based systems. It enables integration of commercial and planning applications into the technical workflow.

PostScript (PS) — A page-description language invented by Adobe that is used for describing the text and graphics in documents.

Metacode — A language that describes text and graphics understood by many Xerox printers.

One-to-one marketing (1:1 marketing, 1-2-1 marketing) — Marketing to customers individually. This marketing process identifies individual customers, recognizes differences among them, personalizes communications to each, and monitors responses.

Overset — A print situation in which the type does not fit in the space allotted for it in a page layout.

Page caching — Storing a page in computer memory, called cache. Cache is for temporary storage of data that are frequently accessed or recently accessed. The next time the data is required, the computer checks the cache first, greatly speeding up retrieval. In VDP, all the static elements of a job process once and the pages then cache. These pages are immediately available from the cache and need not process again when they are merged with variable elements during printing.

Printer Control Language (PCL) — Invented by Hewlett-Packard Company for its printers, PCL is a page-description language.

PDF (Portable Document Format) — A file format invented by Adobe Systems to describe text and graphics in documents.

PDF/VT — An ISO-standard VDP language, created by Adobe, to enable document exchange for variable data and transactional printing.

Page Description Language (PDL) — A computer language that describes a page for printing. Printers and RIPs understand page-description languages. Examples include AFP (invented by IBM), PCL (invented by Hewlett-Packard), PDF (invented by Adobe), and PostScript (also invented by Adobe).

Personalization software — Software that enables the user to create personalized communications, or variable data printing. See “variable data printing.”

Personalization — Making a document personal; customizing a document by using text and images that appeal to an individual consumer.

Plug-in — A software module, such as FusionPro, that “plugs in” to an application and adds features to the application.

PODi, the Digital Printing Initiative — PODi, formerly known as the Print On Demand Initiative, is a not-for-profit multi-vendor initiative working to develop the market for digital printing.

Personalized Print Markup Language (PPML) — An XML-based language for variable data printing. Developed by PODi, PPML makes variable-data jobs print faster by allowing a printer to store text elements and graphic elements and re-use them as needed. PPML is a non-vendor specific language and is therefore considered to be an open industry standard.

Personalized URL (PURL) — A Web page that is customized to an individual visitor through relevant personalized information. PURLs are linked to a database and are an effective part of cross-media marketing. Example: www.domain.com/johnsmith.

Rasterization — The process of converting code that describes text and graphics into the format that is understood by a printer's "print engine" to print them on a page.

Realizable page — PODi's term for an 8.5" x 11" (or A4) single-sided page.

Raster Image Processor (RIP) — A device or software program that converts page-description language code to a format understood by the print engine so it can print pages.

Scalable Vector Graphics (SVG) — A graphics language based on XML that includes instructions for drawing a graphic by designating coordinates and drawing lines or geometric shapes in relation to the coordinates.

TransPromo printing — A combination of transactional and promotional documents into one printed piece.

Variable Data Printing (VDP) — Digital technology that links print engines to databases that contain the content for printed documents in order to print pages that vary in content.

Vector graphic — A format for describing graphics through instructions for drawing the graphic by designating coordinates and drawing lines or geometric shapes in relation to the coordinates. Vector graphics can be scaled—that is, enlarged or shrunk—because the instructions for drawing them remain the same.

VIPP — Invented by Xerox, is an open page-description language (PDL) designed especially for printing variable data documents.

Variable Print Specification (VPS) — A VDP language from Creo.

Web-to-print — Also known as Print e-Commerce, creates an online service for customers to submit and create print jobs on the Internet. Streamlines job submission and processing while improving customer relationships.

Extensible Markup Language (XML) — A programming language developed by the World Wide Web Consortium that allows Web developers to create customized tags that organize and deliver content more efficiently. It contains a set of rules for building other markup languages.

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- **Caslon** Personalized URLs (PURLS), January 2010, PODi
- **InFocus: Web-to-print**, In-depth Report on the North American Web-to-print Market, February 2012, InfoTrends

VDP Software Applications



DirectSmile - VDP Studio

www.directsmile.com

Document Sciences Corporation - xPression

www.docscience.com

Elixir Technologies - Opus

www.elixir.com

GMC Software Technology - Inspire

www.gmc.net

HP - Exstream

www.exstream.com

Lytrod Software - Proform Designer

www.lytrod.com

Meadows Publishing Solutions - Design Merge

www.meadowspcs.com/designmerge

Objectif Lune - PrintShop Mail

www.objectiflune.com

Pageflex - Persona Cross Media Suite

www.pageflex.com

PTI - FusionPro VDP Creator

www.pti.com

XMPie - uDirect

www.xmpie.com



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