Benefits.

- PDF/VT is portable. It provides a reliable container for **blind exchange** of final-form, graphically rich, variable content.

- PDF/VT takes full advantage of the **PDF imaging model** for printing graphically rich personalized communication (e.g. variable transparency effects).

- PDF/VT enables **caching** for recurring elements in VDP jobs.

- PDF/VT can be **preflighted** with standard off-the-shelf tools.

- PDF/VT enables **reliable proofing**, and distributed **review/approval** workflows prior to printing, using the readily available PDF viewing software, such as the free Adobe Reader.

- PDF/VT enables **predictable color** for VDP jobs, based on modern ICC color management.

- PDF/VT provides a robust metadata infrastructure to enable sophisticated/dynamic/granular **runtime controls** for VDP print production (e.g. filtering, rules-based imposition, audit trail, barcoding, check-point re-start).

- PDF/VT is device-independent and object-oriented, and enables VDP jobs to be **dynamically repurposed**, refactored, or retargeted to different presses.

- PDF/VT benefits **direct marketing** campaigns, and also enhances management of high-volume print runs (e.g. TransPromo).

New opportunities.

PDF/VT uniquely satisfies the requirements of job portability, page independence and device neutrality. It opens up new opportunities in digital printing by decoupling the complexities of VDP job authoring from the particular methods of print production. By simplifying the process, PDF/VT will yield benefits for all stakeholders: enterprises, marketers, designers and print professionals.

What next?

PDF/VT has been publicly endorsed by the leading hardware and software vendors offering personalized print and cross-media solutions (Link). Expectations are running high. End-to-end PDF/VT workflows are expected to emerge in late 2011, and reach critical mass by 2014-15. However, as of early 2011, it remains an unproven technology. Industry trendsetters (marketers, agencies, print buyers, enterprises, print operations) have a window of opportunity to explore how the potential of PDF/VT could be harnessed to improve quality, competitiveness, productivity, and to develop the next generation of TransPromo and marketing programs.

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PDF/VT
for Personalized Print

PDF/A
Competence Center

Modern VDP requirements.

- The print experience must now compete with rich-media web sites, emails, videos and social networks. Imprinting variable black text on a preprinted color "shell" is not sufficient anymore. **Variable text** and/or **graphics** and/or **images** must be keyed to audience profiles (e.g. demographics, location, purchasing history) in order to **maximize the relevance** for each recipient. Personalized, graphically-rich print media, held in the hands of a customer or prospect, makes a strong impact, creates an instant connection, and deepens the customer's **engagement** with the sender (e.g. with portfolio pie charts, targeted images, graphic rendition of customer names, etc.).

- Attention-getting designs capture imaginations and mindshare. They are correlated with greater comprehension and retention … and response rates. Therefore, agencies, financial companies and enterprise marketers should be able to express their messages with sophisticated use of **color**, and **complex graphic effects**, such as transparency.

- Designs must be **reviewed and approved** prior to production, possibly across geographically distributed workgroups. Final output must **match the proofs**, both "soft proofs" (monitor display) and "hard proofs" (paper-based).

- Jobs should be **submitted online**, as easily as any other type of print job.

- Prior to the start of job production, files should be electronically "**preflighted**" to check for potential problems. It should be possible to make **minor changes** to the job at the last minute, or even switch to a different output device, without sending it back to "square one".

- The color must be **predictable**, with comparable results, even if different presses are used for the same job.

- Printers must be able to **automate** VDP production runs, and **manage operational logistics**, with security and flexibility.

- Customer service operators in **call centers** should be able to view an exact representation of the printed piece.

PDF/VT for Personalized Print

PDF/VT – an international standard. In August 2010, following 3 years of global collaboration by industry leaders, the International Standards Organization published the specification for PDF/VT, a.k.a. ISO 16612-2 (Link). PDF/VT is built on the foundation of the PDF imaging model, widely recognized as the richest and most robust in the graphics industry. Optimized for the specific needs of Variable ("V") and Transactional ("T") workflows, PDF/VT efficiently addresses the requirements of modern Variable Data Printing (VDP), bringing all the well-known advantages of PDF workflow to the world of personalized print.

Origins of personalized print. Personalized communication has come a long way from its origins in the printing of utility bills. In the 1960s, statements consisting of monochrome black text were output to impact line printers, and mailed in high volumes to account holders. Technological advances over the following decades drove an information explosion, often overwhelming customers, and crowding their attention spans. Marketers and finance companies sought new ways to stand out.

One-to-one marketing. In 1993, at the dawn of the internet age, the first color digital presses appeared. They were capable of printing a different image with every spin of the drum. One-to-one marketing promised to revolutionize the art of persuasion with graphically rich, data-driven, targeted content. VDP featured colorful images and graphics, and resulted in thousands of successful campaigns over the years. Direct mail proved that it was possible to measure and grow the ROI of marketing budgets, sometimes dramatically.

CRM & TransPromo. CRM & Transpromo. Meanwhile, enterprises sought ways to leverage customer data, and strengthen relationships, through ongoing CRM. Monthly statements were recognized as an important customer touchpoint in the growing matrix of media channels, one which guaranteed a high level of attention and mindshare. The concept of "Transpromo" promised to add value to revenue-generating statements, with promotional up-sell and cross-sell messages, personalized for the recipient. On the technology front, the quality and cost-effectiveness of digital presses continued to improve. But, almost 2 decades after the launch of the first digital press, only 10% of digitally printed color pages are being personalized (Link). The promise of VDP and TransPromo remains to be fulfilled.

Challenges. It is increasingly difficult to satisfy all of the latest requirements for personalized printing with today's solution architectures. Non-personalized print workflows solved many of the issues years ago, through the use of PDF digital masters in end-to-end PDF workflows (e.g. based on the PDF/X standard). But VDP has lagged behind. Part of the problem lies with the need to cache the non-variable (repeating) elements in a variable job, to avoid redundant processing at print-time, so that a digital press can be driven at its rated speed. Multiple formats and architectures, both standard and proprietary, emerged to address this need. Each language is specialized, with strengths and weaknesses relative to different job types and workflows. However, many of them rely on PostScript, a 27 year old imaging model that does not support live transparency, nor modern color management. These specialized VDP languages are unfamiliar to everyone except the experts. Their files cannot be easily previewed, shared, proofed, submitted online, or preflighted. They do not support "blind exchange", meaning that they are not completely self-contained, and/or are not independent of a particular output device.