

Shouldn't Designers Be Able To "Just Create" Their Print Job?

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Abstract

Where workflow management is unnecessary why bother to do it? Emerging technology makes it easier than ever to short-circuit many workflow areas. Users can be given the flexibility to order their jobs and receive finished articles without artificial or unnecessary delays. For example a completely up-to-date professionally printed sales catalogue can easily be produced instantly "to order". Control and automation can start and end at the desktop. This process is simple to manage centrally and still allows control over different categories of user. This paper covers short run implementation methodologies that give designers control from their desktop.

Introduction

Much of the defined workflow and printing methodology employed today has its roots in the past. This is not for any negative reasons - printing has adapted over the decades to deal with constantly changing technologies and the ever-changing expectations of users. In fact the mere act of printing anything is now perceived as within everybody's reach. A purchaser of a Macintosh or PC will almost certainly buy a printer and a camera or scanner at the same time. They will expect to use their purchase quickly and easily and for it to work automatically. However, numerous surveys have revealed customer dissatisfaction with the whole printing process. But the principle is there.

More knowledgeable designers are used to assembling the elements required for their work, maybe using resources from other artists and copywriters and assembling them as required on the computer. They will know their requirements and will typically have learned the capabilities of the technology through a process of trial and error. They may well use print houses that understand their repeat requirements and expectations. This is currently the basis by which relatively quick turnaround of print jobs can be achieved and is readily accepted by many customers requiring printing. Unfortunately a large amount of user education may be required to get to this stage. Many undocumented "trial and error" procedures may also be needed in order to achieve the desired output. This process may take much longer if "those in the know" suddenly become unavailable for some reason (e.g. vacation).

Digital Printing Considerations

As technology gets more accurate and color reproduction more predictable, some of the elements affecting the workflow become easier to automate. Given knowledge of the capability of the device (limitations, gamut, available colors, finishing features etc.) it becomes easier for designers to match their output requirements to the technology in use. This avoids disappointment by allowing users to design for the output device with knowledge of the devices capabilities.

Printer workflow will often involve other decision makers in the process. Print houses will have an extremely good knowledge of their printing devices and expertise in using a front-end print manager and RIP. They will provide samples for the designer that attempt to reproduce requested colors. This is not always particularly efficient and is a key area where inconsistencies can be introduced. The trend is definitely to allow designers to accurately control their print job and predict how it will look on any given technology.

Application Workflow

Currently jobs may be submitted as a file (maybe Adobe PDF or Encapsulated PostScript) and a set of instructions (job ticket/tag). These tags can also be electronic (in fact there are various standard forms of tagging jobs however many print houses will start by filtering/removing this data to "ensure" the job is printable). In addition they may also remove tagging information in the PDF or PostScript files. The less knowledge the front-end tools have about the actual target device and the more intermediate processing of the job, the more inherently problematic the print process becomes. Unfortunately this is normal!

To address these issues designers normally have to develop a detailed knowledge of the target print device and take complete control of it in order to predict the output from their desktop. Despite initial appearances, this is not necessarily that difficult if the technology helps the designer.

Current Market Activities

There are many partial solutions to differing workflow problems. Some wider "whole system" solutions are designed to target end-to-end usability as indicated by the problem in hand. The biggest movement for end-to-end printing is headed by CIP4 (The International Cooperation for the Integration of Processes in Prepress,

Press and Postpress) and is the JDF (Job Definition Format). This format defines a standard for including all types of Job Ticketing information with the print job. It allows differing workflow solutions to obtain knowledge of what the job really is and should (in a perfect world) be a complete solution to workflow issues. However this is a large project and for many vendors of front-end RIPs may represent an unnecessarily complex process for the designer. However for a company supplying short-run solutions a simpler designer-to-output JDF compliant solution should be attainable today.

Within a Single Company...

Although not a necessity, the solution to predictable printing is most easily achievable within the same organization that requires the print job. In-house printing often avoids problems with uncooperative print shops that may be missing cost savings and new business opportunities. It's an opportunity for print shops too.

With a Known Device...

Vendors of printing devices know their products and capabilities. They have the ultimate power to define where and how they expose access to the devices. They will usually build in RIPs at the front end of their devices and will define the hardware options, including media/substrates, inks etc. as appropriate. With a third party RIP they have the ability to expose knowledge of the device capabilities to the RIP vendors. Examples include the HP Indigo partner program where HP provide toolkits to partners for job definition and control with their Indigo solutions.

Calibration mechanisms on the device can make device color predictable for a desktop user. Desktop colors can then be matched on the desktop (Photoshop can highlight out-of-gamut areas). In fact, given similar halftoning options such as screening that match the target RIP the designer can accurately proof their job on the desktop because the target printer gamuts can be accurately simulated.

Finishing features for the short-run job can also be enabled for the desktop user from a device driver that directly targets the features of the end device. Where binders, trimmers and folders are available and media type can be selected, a document can be completely assembled on the host and "just printed".

But what has been the trend over the last few years? To use simplified generic drivers on clients that have no direct knowledge of the devices that they will be used with! This is despite sterling efforts to define new standards for handling jobs up-stream and down-stream that try to overcome workflow issues. These standards and methods are very useful when the print house has got to manually assemble the job, but on the latest short-run devices coming to market they are not oriented for designer ease-of-use.

Moving Forward

Printing trends are being driven from two different directions: From the end-user and from the traditional

printing house. Traditional vendors who have graduated from simple printers through to today's Digital Copiers, are continuing to extend their reach upwards. These vendors are most likely to take the users ease-of-use into account because their target markets have historically required it. The purchase of Indigo by Hewlett-Packard is an example of this trend upwards, as are the latest Digital Copiers from vendors like Konica and Océ. Konica's device drivers provide the user with exceptional job control and job finishing all automated from the desktop. Once customers begin to use these facilities they will not want to go back to the more traditional printing approach.

Of course short-run printing in printing houses can also take advantage of this type of large device support. Print jobs can be submitted that have the whole job pre-configured to actually run into the front-end RIP with any specifications for any special media or binding pre-set. By constraining the user interface in the front-end printer drivers, end-users need not be aware of all the details. Driver constraints expose what is available on the device. In addition the objectives of handling variable data in the print job (for example personalization of the documents being printed) can be managed directly back from the client. The device or front-end RIP can demand and handle the variable data for insertion into the job as the designer has requested.

The wider acceptance of JDF should also benefit the user. A client that has knowledge of the target devices (i.e. the physical capabilities) can use this format to communicate an end-to-end job definition that can be managed by whatever built-in workflow processes are available.

Software 2000

Driving the adoption of user-oriented driver architectures remains Software 2000's goal. For short-run and digital copier applications this is increasingly seen as a necessity to improve ease-of-use and workflow productivity. The seamless addressing of workflow issues will be the main challenge for users and vendors in the next decade. Software 2000 supply solutions to OEMs to allow them to provide these customer benefits.

References

Printer Working Group – <http://www.pwg.org>
CIP4 site (including JDF) – <http://www.cip4.org>
Indigo devices via <http://www.hp.com>

Biography

Jon Williams manages Product Marketing for Software 2000's short-run printing and digital copier software. In previous roles he has held senior Marketing and Product Marketing positions in US-based hardware and software companies including Digi International Inc, Caldera Inc, Novell Inc and Digital Research Inc. Williams holds a Bachelors Degree in Electronics (London University) and a Post-Graduate Diploma in Marketing. Williams is a member of the Chartered Institute of Marketing.