



# GRAPHIC EXCHANGE

## *Fire*

BUILDING INTERACTIVE RICH MEDIA WEB SITES

CANADIAN MAGAZINES: AN INDUSTRY IN DECLINE

10 WAYS TO KEEP YOUR MAC AND PC SYSTEMS RUNNING CLEAN

## *When*

IS THERE A MANUFACTURING MODEL FOR COMMERCIAL PRINTING?

PHOTOSHOP TECHNIQUES: TYPE AND BACKGROUND EFFECTS

ADOBE INPRODUCTION 1.0 • MACROMEDIA FREEHAND 9

HOW TO NOT MAKE MONEY — A PRINTER'S TALE

## *Ready*

MAR/APR 2000 \$7.95



0 2

0 74470 87183 5

# dialogue is there a manufacturing model two views from the graphic arts industry

## shane steinman

For several years now, we've been marinating in the belief that print is a manufacturing model gone wrong, and that somehow we've been foolishly ignorant of that which other sectors so readily acknowledge. Some would even say, and have said, that we've been derelict in our duties to the point of outright negligence.

I always feel somewhat less than comfortable when I hear such indictments. Perhaps that's because I reject the unavoidable

**The industry has been working at full tilt production while moonlighting as an applied research project; what you might call a Learning Annex "Workflow Workshop".**

self-incrimination that would accrue to me by accepting these statements at face value. But, I think there's something more.

The primary industrial focus of the graphic arts industry has been to put ink on paper, but we've been (necessarily) sidetracked

by the need to perpetually redefine the methods by which this is accomplished. This pursuit has become our second full-time occupation. So, in essence, the industry has been working at full tilt production while moonlighting as an applied research project; what you might call a Learning Annex "Workflow Workshop".

There are a number of factors which directly contribute to the pervasive lack of coherence and conformity in this manufacturing architecture:

**Technological Confluence**

**Competitive Production and Development**

**Diverse Input Media Funneling**

**(Non-)Standard Practices**

**Variations in Communication Protocols**

### CONFLUENCE OF TECHNOLOGIES

The rapid evolution of digital mechanisms for the compiling, manufacturing, manipulation and pooling of data, has led to an acceleration of the rate at which industries (at large) absorb their peripheral and collateral contributors — and/or their responsibilities. This is very true of the print market.

## gordon pritchard

My feeling is that print is not a manufacturing model that has gone wrong, but rather it has been hampered by the lack of an adequate manufacturing model that enables the commercial sheetfed printer to deal with the market realities that they must compete in.

**Mass customization is intended to support both low cost and high competitive differentiation in a cost effective manner. In this model every product is unique and perfectly suited to a specific customer/print buyer need...**

Printers attempt to meet the unique expectations of individual print buyers, each of whom will also have different priorities and expectations from project to project. Today pleasing color. Tomorrow hi fidelity. One size does not fit all. Press operators must be able to efficiently move job-to-job from printing one color bus schedules to fine art reproduction to six-color annual reposts, then two-color rock posters.

Traditional mass production or standardized manufacturing models simply do not apply to an industry that produces custom print products.

However, a successful manufacturing model has evolved over the past number of years in other markets that have faced similar challenges. It is a model that commercial sheetfed printers might do well to learn about.

This manufacturing model is awkwardly named "mass customization." It is designed to merge the best of two seemingly opposite manufacturing models — mass production and custom production. It is what printers do intuitively anyway. But having a clearly expressed manufacturing model that everyone in the plant buys into can allow the printer to operate much more effectively, and profitably.

This model works best in service-intensive industries or industries that need to output custom products but cannot afford single unit craft-based production. Mass customization is intended to support both low cost and high competitive differentiation in a cost-effective manner. In this model every product is unique and perfectly suited to a specific customer/print buyer need — it is the products and processes that are modularized/standardized. Because the modular components are standardized, they are very ef-

# for commercial printing?

These allied industry segments were once part of the standard printing mix. However, the introduction of digital specialization (especially throughout the 80s) precipitated a division between the print and film “styles” of production.

The emergence of viable computer-to-plate systems has formally erased this largely imaginary line. Realizing this, printing companies are rushing to embrace the new technology, for its efficiency as much as for its ability to offer them exercisable control over their processes.

But, along with the benefits, comes a need to understand and accommodate not only new methods, but new ways of doing business and relating to customers.

I like to think of it as inheriting an estate from a long-lost uncle, with the condition that you care for his dog. Of course, there’s a proviso that, should anything unfortunate befall the mutt, you’ll be out on the street. Under Murphy’s Law, the dog will eat most anything and will require constant supervision. If unfamiliar with dogs in general, you might even consider enlisting the services of a canine consultant in the hope that they can tell you whether the mess that the pup leaves behind “looks normal”.

efficient from a manufacturing point of view, and easy to communicate to personnel and customers. The catch phrase is: “Standardize the invisible – customize the visible.”

## **CUSTOMIZATION ENABLED BY STANDARDIZATION**

Parents can buy dolls that look like their own children. Dozens of vitamins can be customized into just a few pills. Even Barbie dolls sport the cheerleading uniform of the nearest university. Instead of simply stamping out the same commodity every day, many companies are revamping their production lines to make them flexible enough to spin hundreds of variations on a single product from the same assembly line. In making the switch from mass production to mass customization, these companies are looking to gain an edge over competitors and get closer to their customers.

On the other hand, the printing industry, responding to the many variables of print techniques, personnel, prepress, inks, papers, and presses has attempted to standardize supplies, equipment and procedures in order to minimize production problems.

While the adoption of industry production standards has positive value, it can also have negative consequences — particularly for the commercial sheetfed printer. The most serious is that

## **COMPETITION**

Printing has always been a highly competitive industry; a factor which often leads to price erosion. In the face of required infrastructure upgrades, this can result in potentially hazardous financial conditions.

Well, the competition doesn’t stop there. Oh, no.

Equipment vendors are also engaged in a struggle with each other. Many of the devices appear similar to the untrained eye, but each has particular attributes that are vaunted as crucial advantages versus any competitive offering. Every few months, a new bell or whistle is added.

Software vendors may issue updates or extensions to their products almost weekly during busier development cycles. Features abound, and some of them may not even work, but that’s rarely been any sort of justification to hold back a release. After all, “first to market” is a direct competitive edge.

## **DIVERSE MEDIA AND FORMATS**

Some of the data structures that we use are legacy formats (TIFF, EPS, etc.) but there are newer (better?) things coming down the

when presswork from different printers is only aimed at a common third party target, it enforces the idea that print is a commodity. Printers are then forced into competing solely on the basis of lowest price.

But if every job is unique then each print project becomes an R & D exercise. Expensive in time and money. This is where the mass customization model shines, because it enables the printer to meet customers’ individual presswork expectations — but with the efficiencies of a standardized print production assembly line.

Printers succeed by having the flexibility to deliver a variety of presswork options, which can include third party standards that are tailored to individual customer and project needs. To do so in an efficient and cost competitive manner requires that the printer select presswork characteristics that deliver the most visible difference to the customer. These offerings are then defined, pre-tested, standardized and packaged in ways that can be easily communicated to the print buyer as well as everyone in the production chain.

The links printers forge with customers when they move to mass customization can deepen market penetration, solidify product loyalty and create a nimble production cycle. Without adding to, and in some cases lowering costs, mass customization thinking

## shane steinman

pipe all the time. Confluence and competition take their largest toll in this particular area. The most common question asked about new versions of anything...

“Is it compatible with...?”

There are literally hundreds of graphic file formats; thousands if you include all the sub-variants. While comparatively few of

**People say that printing is no longer a craft, but a manufacturing process... I was caught in a quandary until I realized... the two aren't mutually exclusive; “print” can be both a science and an art.**

these are used in mainstream production, it's still quite a large number — perhaps eighty.

All of these structures must somehow be fed into a wide-mouth funnel (maybe it's more like a meat grinder) and a predictable, homogeneous stream of coherent data must flow from the end.

The obvious answer to many of these issues would be something like Adobe's Graphics Model, which has the best shot at becoming the basis of our mother tongue. That being my prediction, I would hope that the specifications proceeding from these developments will be as open and industry-friendly as possible.

### **LACK OF APPLICABLE STANDARDS**

Because of the short product development cycles, and because so much of what we do on a daily basis is a patchwork of temporary solutions and work-arounds, it's difficult to standardize our processes.

Committees require months (and frequently years) to appropriately define the parameters of a particular print condition. What hope have they of isolating the variables of a more liquid target, like software/hardware compatibility?

As far as standards are concerned, we can only continue to set our sights on the end result and work backwards through the chain of production. This has worked very well in the cases of SWOP and MACS specifications for the publications market, SNAP for newsprint, and GRACoL for general lithography.

But now, the role of these organizations has begun to change

## gordon pritchard

can move a company formerly fighting for market share to the front of the pack.

Here are six recommendations/characteristics gleaned from the experts on mass customization:

### **1. EVALUATE THE PRODUCTS IN CUSTOMERS' TERMS**

In traditional manufacturing environments, companies consider their products successful if sales continue to rise. Successful mass-customizers look instead at how well a product serves customers. To do this, a company must understand who its customers are and what their needs are, then confirm that as a supplier they truly offer products based on those expectations.

### **2. OFFER CUSTOMERS THE APPROPRIATE NUMBER OF CHOICES**

The trick to effective mass customization is not only getting the right information about what someone would like in a product but also applying that information intelligently.

**Beyond giving customers product choices, mass customization can create a customer interface that's addictive to consumers... the investment in a company's customization process creates loyalty.**

For example, a salad bar and an automobile dealership both offer products people want. Both products can be customized. How much choice should consumers get? A car dealership

wouldn't hand a customer a big bucket, lead him to piles of auto parts, doors, tires and steering wheels, and tell them, “Do it whatever way makes you happy!”

Conversely, at a salad bar, everyone has their own idea of what makes an ideal salad. However, hungry people wouldn't appreciate being met at the stack of cold plates by someone who informs them that only certified people can make their salads. Would the salad producer glop on too much Roquefort or skimp on the carrot sticks? Most salad eaters demand the hands-on ability to tailor the product themselves. Taking that control away from customers can turn them off. Somewhere between body panels and leafy greens lies a medium where customers find product bliss.

The sheetfed printer, for example, might offer different presswork target characteristics based on customer project requirements. GRACoL for pleasing color, DMaxx (presswork at very high ink density) for agency work, FM screening at custom densities for fine art reproduction, etc.

### **3. PROVIDE FINGERTIP ACCESS TO ALL INFORMATION**

Everyone in the company should be able to access relevant information about customer orders and the individual steps of production. The ability to track all of this information digitally using object-oriented technologies has taken mass customization to another level and made complex customization much easier. Having the production information readily available allows the process to be more flexible because anyone from executives to line assemblers can see where an individual order lies in the process and where a process or module might need to be changed to improve the company's ability to adapt to new customer demands.

Imagine the possibilities and efficiencies when CSRs, techni-

from a strictly legislative position, to one of facilitation and education. These supplementary responsibilities will become more important as our industrial mechanisms grow more dynamic.

More and more often, as in the instance of the JDF specification, we will start to see increasing vendor participation in (and control of) the standards initiatives — at least in areas that rely upon a more predominant software component.

#### **COMMUNICATION, PROTOCOLS, METADATA**

When we consider the notion of applying mass production principles to the manufacturing scheme that we know as “print”, the most vital prerequisite has to be the invocation of a common language for all production communications. This is the only way to reduce (and hopefully eliminate) misunderstandings between production partners.

This will be incredibly crucial to the upcoming e-commercialization of print. Predefined logical structure. Predefined meanings for terms. Provisions for controlled extensibility. Broad-based support of a new communicative standard. *These* are important factors for the successful implementation of any such proposal.

cal planners, press operators, estimators, etc. — even customers — are all able to see and discuss the same project, perhaps in PDF format, in real time — locally or remotely.

#### **4. CREATE A MODULAR PRODUCTION SYSTEM**

Most successful mass-customizers build their products in discrete modules. With each step in production contained in a separate module, steps can be rearranged like Lego bricks. Most computer manufacturers have mastered this; in their assembly lines, each part of a computer has its own station, and each station represents an opportunity to customize the product. Dell Computer Corp. in Round Rock, Texas has set the standard for such production techniques.

#### **5. ESTABLISH A DIRECT LINK WITH CUSTOMERS**

When customers order custom products, the company finds out much more about customer preferences than it could ever learn through traditional market research. The tool for capturing custom order information can be different for each company. Japanese eyewear manufacturer Paris Miki, whose U.S. headquarters are in Seattle, has interactive software that helps people create their own custom-shaped lenses, while Dell’s ordering systems allow customers to design their own computers. Printers considering e-commerce as a customer relationship and support enabler are making sure that this new level of connectivity goes well beyond simple print procurement.

Customization also removes a lot of the guesswork from doing business. Instead of interpreting sales figures and mulling over what marketing studies suggest people might buy, companies that customize see exactly what their customers want, and don’t want, every day.

#### **SUMMARY**

I’ve heard people say that printing is no longer a craft, but a manufacturing process. While my heart says, “No. You’re wrong!”, my brain simply concurs, “Of course it is.”

I was caught in a quandary until I realized that the two aren’t mutually exclusive; “print” can be a science *and* an art.

I still take exception to the implication of neglect that some would foist on us, because I realize that we’re still in the process of “becoming” a definable industry; that we haven’t had the same opportunity to refine our systems, as has been the luxury in markets with a lesser degree of flux.

With accurate press target conditions, strong educational emphasis, open dialogue, refined color management principles, uniform communications, a shared imaging model, and a healthy dose of cooperative spirit, we can get 90% of the distance covered.

The art is in the remainder.

What’s the phrase? “90% perspiration — 10% inspiration”?

Yep, that should work. **G**

---

*Shane Steinman is technical director of Archangel Media Inc. of Toronto and project leader of the dMacs Initiative ([www.dmacs.org](http://www.dmacs.org)).*

#### **6. MAKE IT HARD FOR CUSTOMERS TO GO ELSEWHERE**

Beyond giving customers product choices, mass customization can create an addictive customer interface. If a company provides a product that succeeds in customers’ eyes, and those customers need the product or service again and again, their investment in that company’s customization process can create loyalty and help the company increase market share.

Printers could potentially profile their customers, workflows and presswork to tailor production and service for each print customer and print product type.

Even if a printer decides not to “mass-customize”, the exercise of evaluating products through the eyes of customers can be very valuable. This print quality model, because it depends on developing standardized, measurable presswork targets is also amenable to integrating into closed loop process control systems as well as quality profiling systems such as System Brunner.

The technology and business model exist today to make print production considerably more reliable, predictable, efficient and profitable for many printers without resorting to or waiting for the development of new print technologies. The ability to apply this end-to-end manufacturing model in their business is one of the major positive impacts of CTP for the printer because CTP maintains jobs in a flexible, predictable, digital format throughout the production process.

It only requires that you leverage the tools that are available now. **G**

---

*Gordon Pritchard is the Commercial Print Specialist at CreoScitex and a team director in its Quality-in-Print group. His mission is to be an advocate/evangelist for commercial sheetfed printers.*