Digital Technology Trends

by Howie Fenton, NAPL

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Welcome to the 21th issue of Digital Technology Trends and I hope you are surviving the 2005 blizzard rocking the northeast. Looking back at demand for my work - last years workload finally returned to pre 9/11 levels. Looking forward things are looking good too. Expect to hear about great things from my company NAPL and for me personally work is looking promising for 05. Besides the seminars for NAPL and RIT, I will be on road tours with Xerox and Banta.

This issue opens with two op-ed (Opinion-Editorial) articles. The first compares inplant printers with commercial printers and focuses on equipment and cost justification models and issues in offering a variable data printing service. The second talks about the latest attempt by Apple to motivate a switch from Windows machines to Macintosh computers.

This is followed by predictions by two leading economists: NAPL's own Andy Paparozzi and the legendary Joe Webb from Trendwatch. Last but not least are three short summary articles on emerging new technologies: radio frequency identification (RFID) technology, 3rd generation wireless and Micro Fuel cells.

As always to add or remove someone from the lists email **HowieAtPre@aol.com** and write "add" or "remove" "from the list" in the subject. If you email from an address other then the one sent to - please include that address or no changes can be made! And the content is contained both within this email and as a PDF attachment with links. Old issues are available at www.HowieFenton.com

⏩ Comparing and Contrasting Inplants & Commercial Printers

I have been busy the last few months working on inplant assignments at colleges. I spent 3 weeks at a university in Ohio cost justifying the department and one week in Missouri assisting in the launch of a variable data printing service. Combining with the 3 months I worked with the catalog division of Cabela's last year, almost half my work in the last 12 months has been with inplant facilities. As I work with inplants I can't help but compare and contrast the differences and similarities when compared to commercial shops – that is the focus of this article.

In Ohio I learned that like the advantages of any local, commercial, quick copy shop the remote satellite printing on campus are loved because of their convenience. Whether they are in the school library or in the building were the Dean or Provost sit, convenience is the driving factor. Unlike a commercial shop that values cost justification above all else, in some inplants a financial return can take a back seat to politics and convenience. (If you quote me .. I will deny it.)

Both commercial and inplants must be responsive to customer needs. During the 3 weeks in Ohio I spent a lot of time analyzing surveys and moderating focus groups. The overall satisfaction was very high. The customer complaints focused on quality and turnaround times, which is similar to what occurs in commercial shops. For this assignment the complaints were mostly a equipment issue.

This college had little prepress equipment, in contrast the number of commercial shops without prepress equipment is very small. Due to turnaround time complaints most printing companies have installed prepress equipment or they go out of business because they are not competitive. However there are some printing companies with hardly any prepress equipment and old presses. This was the case there was little or no prepress equipment and the presses were 12 and 15 years old, and many parts were discounted or no longer available.

Reluctance to invest in new equipment is not unique to inplants many commercial shops don't like to invest either, but unlike most commercial shops – inplants often send out or outsource printing. When commercial shops outsource they typically only outsource certain services, such as foil stamping or other forms of finishing.

Another difference is that while the commercial shop will have complete data about how much it costs to outsource, inplants may not. Why? Because in a university, the facility, staff or departments may simple go to a commercial printer and not tell anyone.

Of course this makes the case of cost justifying a new piece of equipment more challenging. Because someone like me wants to be able to say, "You sent out $500,000 last year, if we buy a $500,000 we can pay for it in one year" (a slight exaggeration, because that's not a total cost of operation). The only way to address this is to find out how much work is outsourced, which requires a little detective work.

Making the case to do more work in-house was the case in more then one of the inplants I visited last year. In one inplant they where sending enough work out to cost justify a computer to plate device and a press in another doing more work in house would save millions of dollars a year.

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Start up problems with variable data printing

In Missouri we were working on a role out a new variable data printing service. Just like a commercial shop has to do this college had to sell the advantages to the facility and staff. Also similar, the success depends on a internal champion. Someone, meeting with customers and talking to them about the advantages of he technology. Fortunately my contact in Missouri was that champion.

Therefore we started with a presentation to various departments discussing the benefits of variable data printing such as more effective fund raising ("last year you donated $100 can we count on $150 this year") and better enrollments (personalized pieces targeted to individual students based on their major, minor and extracurricular interest).

This kind of work has been done successfully by others and are written up by PODi (print On Demand Initiative), in there world class variable awards (PODi.org). The combination of successful case histories documented by a independent source and the fact that my contact had been championing these ideas for years, it was easy to get their "buy-in" and agree to try the service.

Next we started the hands on work required for the first campaign. And just like the problems faced by commercial printers the database was a mess. We discovered problems with the database such as missing salutations (Mr., Mrs., etc). More interesting was the discovery that those that had salutations had apparently had sex change operations such as Mr. Jane Smith. Oops!

Like a commercial shop working with a new piece of software we also struggled through some software issues. Let me first say that I think that PrintShop Mail is a great entry level program, and I recommend it often to anyone starting a simple variable data program. But we had some learning pains.

First any machine performing the merge had to have Acrobat Pro installed on it because it uses Acrobat to view the PDF file. Similar to many commercial shops I discovered that this school was not aware of the Adobe Print Service Provider program. It is a program that makes it much less expensive to keep up with software updates for Adobe's key products on both computer platforms. You get 1 user license for Mac and the PC versions for Adobes Acrobat Professional, Illustrator, InDesign, GoLive, and Photoshop – for $600/year.

Another problem was with macros embedded in the Excel spreadsheet were causing problems. However the greatest issue we faced was how to insure that a 3 part match would work without using a window envelope, a scanner or a cafeteria filled with people. (Personally I am a huge fan of window envelopes, it makes variable data production much easier). This remains unresolved but we are considering a small, practically hidden character on all the pieces and a schedule stop and inspect process.

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⏩ The theory behind the Apple Mini

At the recent MacWorld show Apple introduced the cheapest and smallest Macintosh ever the Mac Mini for $500. As someone who has used Macs since the first 128K, I can safely say this is the most interesting attempt to motivate a shift away from the Windows PC. The theory is interesting.

The $500 price is fairly competitive with entry level PC's. Although if you do some homework you learn you can actually get a PC with a monitor, keyboard and mouse for the same or lower price. Dell is selling a model for $399, including a 17-inch monitor, keyboard and mouse. But the Dell has less usable memory than the mini, and it can't burn CDs. It also has only a 90-day warranty, not the mini's one-year warranty. If you add CD burning, a one-year warranty and extra memory the price jumps to $115, or a total of $514. But the idea is that if you switch from a PC to a Mac you already have the monitor, keyboard and mouse. Which is true of the USB based machines built within the last 3 years.

The mini comes with Apple's older G4 processor, which for many tasks beats the Celeron processors used in low-end Windows PCs. It has 256 megabytes of memory; a 40-gigabyte hard disk; a video card with 32 megabytes of video memory; an Ethernet networking port; and a DVD drive that can also burn CDs. It also comes with Apple's OSX operating system and s suite of multimedia programs, called iLife.

There are many people who are becoming frustrated with all the security loopholes, viruses, and other nasty plagues that are targeted toward Windows based PC's. Despite some strong if belated effort on the part of Microsoft to fix its leaky flagship, Windows is still a security nightmare. Windows and other major Microsoft applications, notably Outlook and Internet Explorer, remain plagued by viruses, worms, spyware and other malware, and it's a constant battle just to keep up with the latest patches.

The mini comes with Apple's latest operating system, called Panther, which has so far never been attacked by a successful virus and has been plagued with little or no known spyware. And the base of OS X, the BSD variant of Unix, is widely recognized for its solidity.

The size cannot be beat. Apple itself has the only smaller footprint computer which is the Apple Imac, in which the computer is inside the flat panel monitor. But at $1300 that is over twice the price.

There is an entire new market of people who love the Ipod. Apple executives and Wall Street analysts talk of this "halo effect" which invigorated the company, with iPod purchasers switching to Macs in greater numbers.

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It was iPod fever that ignited explosive fiscal first-quarter sales and profit at Apple Computer, with revenue climbing 74 percent and earnings more than quadrupling. Sales for the three months, ended Dec. 25, soared to $3.5 billion, up from a year-ago $2 billion, while net income climbed to $295 million, compared with $63 million in the same period in 2003.

Sales, market share and the Itunes web site are all doing very well for Apple. And even though there is a strong partner with HP and distribution strategy for the PC version, its still easier to work with it on the Mac. So new computer users who are music lovers are buying Macs.

File compatibility is always a question when switching platforms, but there are several stories popping up from newspapers and magazines claiming great success in playing music files and opening text and picture files originally created on the PC.

Could these advantages help the Mac move more into big companies often called the Enterprise? Clearly the advantages today are stronger then ever. In addition, Apple makes its strongest enterprise case on a higher level, with its Xserve G5 servers and Xserve RAID storage systems. Both are powerful, relatively affordable and -- as you'd expect easy to administer.

http://www.usatoday.com/money/industries/technology/2005-01-21-apple-usat_x.htm
http://www.azcentral.com/business/articles/0120wsj-personal-tech20-ON.html

⏩ Economic recovery

According to the latest Economic Edge report from my friend Andy Paparozzi, our Chief Economist at NAPL,

- Sales, work-on-hand, factory hours and profitability is up
- More report prices are holding steady.
- After nearly a year, the printing industry's painfully slow recovery from recession is finally becoming the real thing.
- Recovery will continue in 2005.
- We expect commercial printing sales to grow as much as 5.0% next year—the strongest gain in five years.
- The economy will help: An expansion once limited to the consumer and housing has spread to business investment and exports.
- Employment is growing again.
- But … a rising tide no longer lifts all boats: Full participation in recovery is reserved for printers prepared to grow at the expense of others
- Looking further ahead, NAPL State of the Industry participants expect non-lithographic services to provide over one-third of their revenue by 2010.

Similar trends are discussed by Joe Webb from Trendwatch:

- 32% expect business in the next 12 months to be "excellent, better than the previous 12 months" (down from 37% six months earlier), yet 58% expect business to be "OK" or as good as business has been over the past 12 months (up from 51%);
- The number two business challenge for print and prepress firms is "competition," (68%) up from 53% six months ago and at the highest level this challenge has ever tracked in the history of the TWGA survey

⏩ RFID

When it comes to inventory tracking and materials management, radio frequency identification (RFID) technology is the next hot technology. RFID technology is nothing new. In fact, it was even used in World War II to identify ally and enemy aircraft through RF waves. The technology is already in place in various models (if you've driven through a fast lane at a toll booth— that's RFID in action), but its impact on production and shipping are just started to be seen.

The concept is simple: attach tiny microchips with antennas or "tags" to products or components that are read when they go through readers throughout the supply chain and transmit information about the shipment's contents. Component manufacturers will place tags on shipments, so buyers will be able to track the components along their way to the plant. The increased visibility on the inbound side can help buyers minimize inventory levels and improve demand forecasts.

Once in the manufacturing plant, major components can be tagged and tracked throughout all stages in the production process. Once the product is completed and shipped out for sale, remaining RFID tags can be used to track time from manufacturer to retailer to customer, providing a wealth of point-of-sale data.

Wal-Mart and the Department of Defense have been accused of force-feeding radio frequency identification (RFID) to the world, insisting that they will do business only with RFID-enabled suppliers by various drop-dead dates. Although they are requiring suppliers to mark cases and pallets with RFID tags, it seems unlikely that the adoption of that technology will become widespread in the near future. The technology holds great promise in print production for everything from locating samples for catalogs, monitoring pages through the plant and shipments out the door. Anyone who uses barcodes now should be looking into RFID.

This could impact shipments of printed products too. Proponents of RFID movement want suppliers to apply Electronic Product Codes (EPC) to their shipments. EPCs basically are RFID tags, or "license plates," that can identify the contents of shipments. When a tagged pallet or case passes by an electronic reader, the tag identifies the shipment and transmits that information to a computer via radio signals.

⏩ 3rd Generation (3G) Wireless Networks

A new breed of wireless networks with higher speed and capacity than 2nd generation (2G) are being planned, designed and deployed. These networks are in higher frequency band (2 GHz and beyond) with larger bandwidth (around 5 MHZ) than 2G, will provide higher speeds up to 2 Mbps in a fixed or stationary wireless environment and at 384 Kbps in a mobile environment. Proponents hope a international standard for 3G. But this is unlikely to be fulfilled soon because of vendors' self interests, existing infrastructure dependencies and migration steps like 2.5G GSM/GPRS, 1xRTT CDMA, Edge, etc. before a common UMTS network becomes pervasive.

http://www.purchasing.com/article/CA327468.html

⏩ Micro Fuel cells

Many techies talk about fuel cell cars. But long before you rev up your first fuel cell powered car you're going to see the devices popping up in things like barcode scanners, handheld data collection devices, notebook computers, cell phones, personal digital assistants, and other portable consumer electronic devices.

Advances in micro fuel cell technology are also going to speed the rate at which Wifi becomes wide spread because they'll provide portable devices with more power, more conveniently than batteries, allowing for longer operating times and/or greater device functionality.

The acceptance of micro fuel cells will be because it will provide longer life then batteries. Instead, you'll simply replace the device's fuel cartridge. In the case of a DMFC-powered device, that cartridge will contain methanol, which, according to MTI Micro, offers potential for energy density that is 5-10 times that of advanced batteries.

Adding or Removing Names

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