#14

Digital Designer, CSR & Salesperson

by Howie Fenton
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NAPL is a not-for-profit trade association providing companies with the strategies, insights, and guidance to make informed business decisions, minimize risk, anticipate change, and profitably grow their business.

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If you get the chance – stop by the booth 862 and say hello!

The Goal

In digital vs. traditional print production
there are more and greater up-front responsibilities

Different companies work differently - but each must decide who does what

sales	estimating	order entry
preflight	customer contact	
proofing	scheduling	expediting

Goal is to discuss
The roles of file preparation, preflight and correction
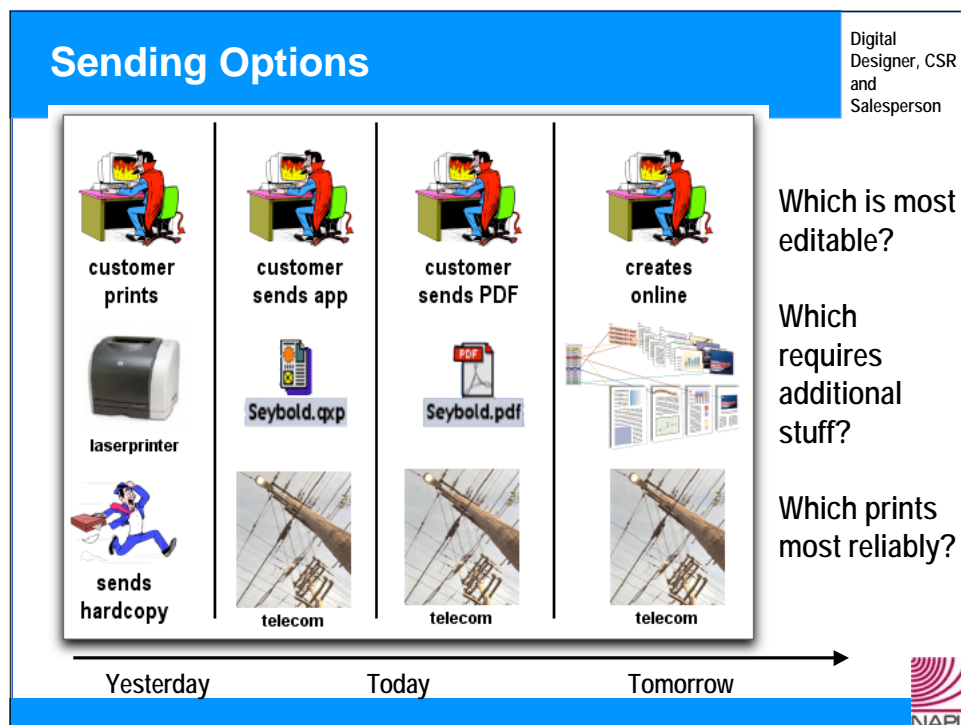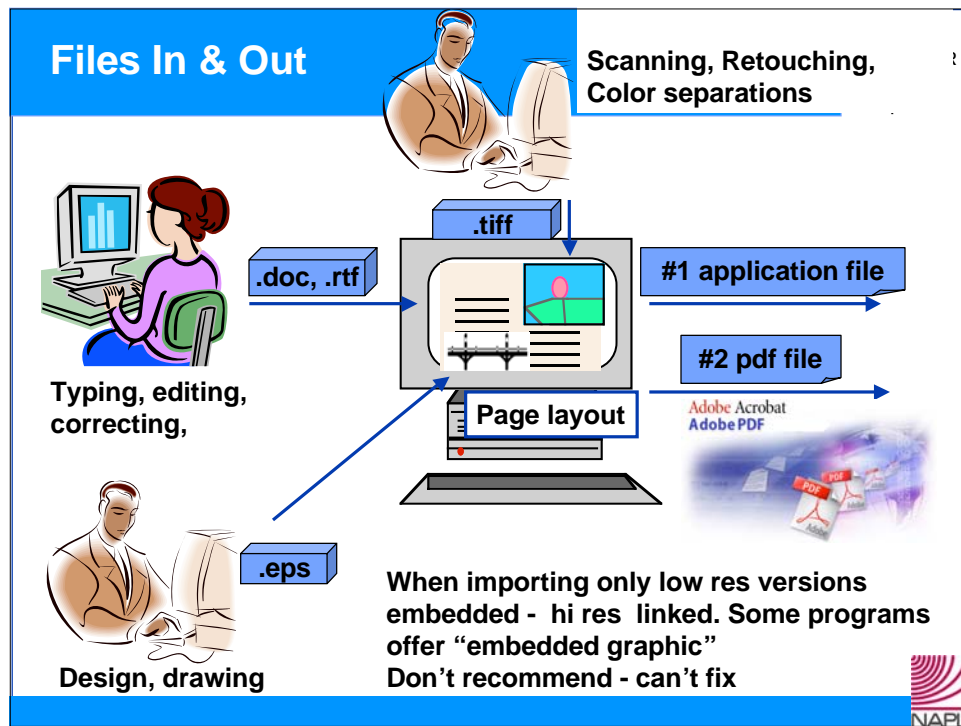What the designer, salesperson and CSR needs to know about the digital workflow

Responsibilities within printers

Digital Designer, CSR and Salesperson

Small Companies - 3

sales - salesperson
estimating - salesperson
order entry - salesperson
expediting - salesperson
call customer - salesperson

scheduling - manager
job planning - manager

prepress - production
proofing - production
finishing - production

Larger Companies - 5+

sales - salesperson

estimating - estimator

order entry - CSR
expediting - CSR
call customer - CSR

scheduling - planner
job planning - planner

prepress - prepress
proofing - prepress
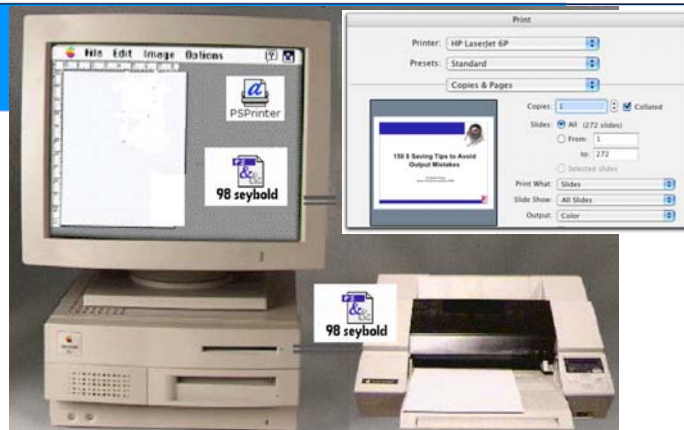finishing - production

Building Blocks Of Print

Customers: design, scann, color correcting, create separations & proofing

Service Providers: proofing, color correct, print, finish, fulfill, mail

Files In & Out

Scanning, Retouching, Color separations

Typing, editing, correcting,

.doc, .rtf

.tiff

#1 application file

#2 pdf file

Adobe Acrobat
Adobe PDF

Page layout

.eps

**When importing only low res versions embedded - hi res linked. Some programs offer "embedded graphic"
Don't recommend - can't fix**

Design, drawing

Sending Options

Digital Designer, CSR and Salesperson

customer prints

laserprinter

sends hardcopy

customer sends app

Seybold.qxp

telecom

customer sends PDF

Seybold.pdf

telecom

creates online

telecom

Which is most editable?

Which requires additional stuff?

Which prints most reliably?

Yesterday   Today   Tomorrow

Inside

Printer determines the PDL [page description language - PCL, PostScript, HPG)]

Printer drivers only prints to that printer

determines font metrics & letter spacing

PPD plugs into printer driver

used to be printer specific and would add specifics (res, size)

Today there are distiller PPD & Acrobat Printer does not offer

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Digital Designer, CSR and Salesperson

Creating Good Application Files

PDF's are only as good as the components inside

It's what's inside that counts

Digital Designer, CSR and Salesperson

PDF's are only as good as the components inside

If components are bad - PDF will print poorly or not at all

Component problems include

File format problems

Low resolution, poor bit depth, scaled wrong

Color space problem

Wrong color space (sRGB, indexed color)

Font problem

No printer font, no ATM, licensing problem

Print driver problems

Early version of printer driver, wrong PPD

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File Formats

Digital Designer, CSR sperson

tagged

TIFF

Retouching

Word Processing

eps

When importing only low res versions embedded - hi res linked. Some programs offer "embedded graphic"

Don't recommend - can't fix

Drawing

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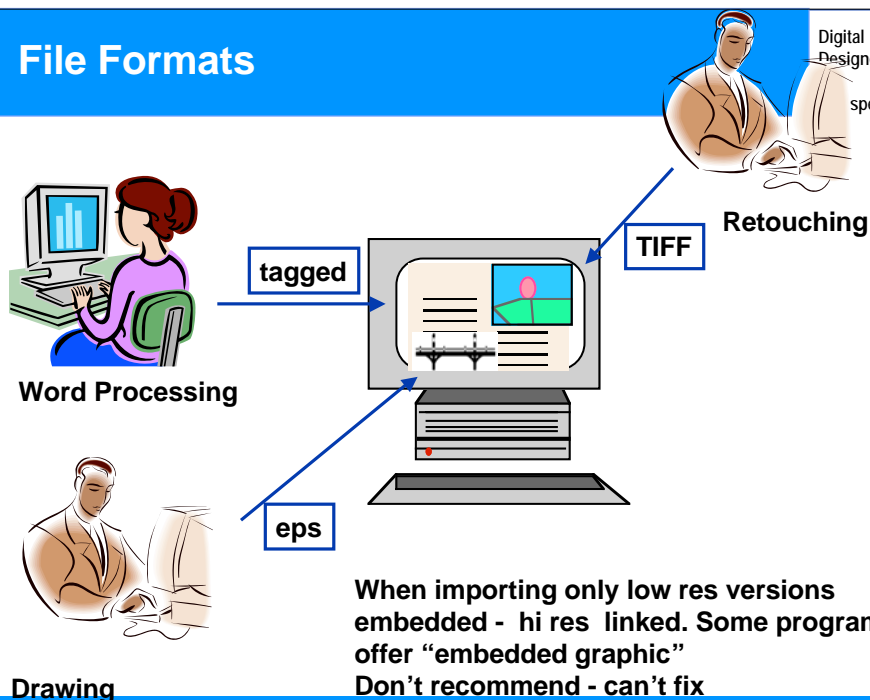
Bitmap vs Vector

Bitmap - Scans

Size / resolution-dependent
Enlarge lose res, shrink gain
TIFF & JPEG: X -platform compatible
Saves alpha channels (clipping path)

Vector - Drawing files

Not size / resolution-dependent
Can include bitmap and vector
(clipping path)
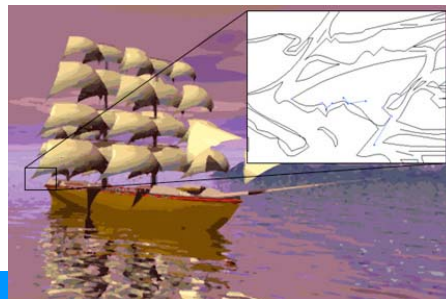
Good & Bad File Formats

Vector	Xplatform	Bitmaps
EPS	YES	TIF
WMF	No	DCS
CGM	No	BMP
WPG	No	PCX

Many file formats restrict the color saved (WMF = indexed)
Some files exist only on one computer platform
    i.e. Windows files .WMF & .BMP
▸ **To fix**
    **use an image editing tool (such as Paint, Microsoft Photo
Editor, or Adobe Photoshop)**
    Convert .wmp & .bmps to tiff or jpeg
**Some include transparency will cause PDF files to be huge
and may cause printing problems**
    Transparent GIF or PNG
▸ **To fix use image editing tool to**
    change transparent GIF or PNG files to non-transparent
In general use TIFF, JPEG or EPS in application files

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Lossless, lossy & wavelet

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1984 LZW introduced 1st lossless compression

no data is lost, best for text (Win: PK Zip / Mac: Stuff-It),

1992 JPEG becomes 1st lossy standard (data lost)

Divides image into squares, uses DCT (Discrete Cosine Transform) to convert to curves then throws smaller away

w/out

w/ JPEG

Artifacts: edges blocks can be seen, throws away all data equal

1997 Wavelet: scalable wavelet-based algorithm developed by Los Alamos National Laboratory for satellite imaging

Part of new Adobe products, but not supported by most apps

Layers for Editability

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Many programs (Photoshop, Illustrator) support layers which makes editing much easier

Some service providers ask for both

⇥ Recommendation

Create, use layers and save as native file (.psd, .ai)

Then "save as" & "flatten" to final file (.tiff or .eps)

Send both files (i.e. sample.psd and sample.tiff)

| File | Edit | Image | Layer | Select | Filter | View | Window | Help |

New   ▶   Layer...   ⇧⌘N
Duplicate Layer...   Background From Layer
Delete Layer   Layer Set...
                                            Layer Set From Linked...
Layer Properties...
Layer Style   ▶   Layer via Copy   ⌘J
New Fill Layer   ▶   Layer via Cut   ⇧⌘J
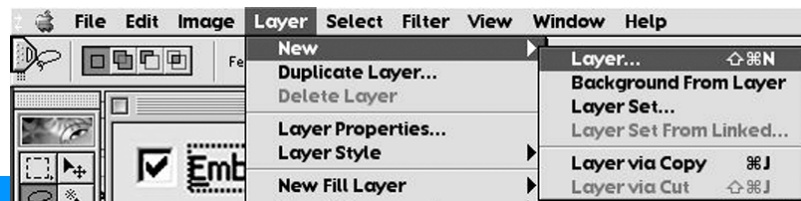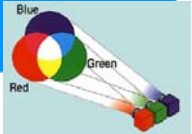
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Color

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Color Models

Digital

RGB light (monitors) -additive color

CYM inks (printing) - subtractive color

The 4 C printing model approximates color it does not match it

➤ To match precisely need a spot color based on PMS swatch book

Choose either coated or uncoated because paper changes color

Color Assignments

Process Colors
- **Use for 4c colors or to reproduce a picture**
- **Not designed for absolute color match**

Spot Colors
- **To insure absolute match, send chip to match**
- **For special inks (metallic, fluorescent, etc.)**

Swatch books
- **use to select color (not the monitor)**
- **Use Pantone for spot colors (ink from can)**
- **Get Pantone book with chips you can send**
- **Get Pantone book compares a spot to the process build**

Monitors

Computer monitors coated with RGB "phosphors" which many people turn the brightness on the monitor all the way up
- **Making images too bright, too blue**

Free calibration software
- **Adobe Gamma (Win & Mac up to OSX)**
- **Apple Colorsync tool (OSX)**

Color also determined by
- **Effected by outside light**
- **Clothing**
- **Color walls**

Visible
Film
Monitor
Print
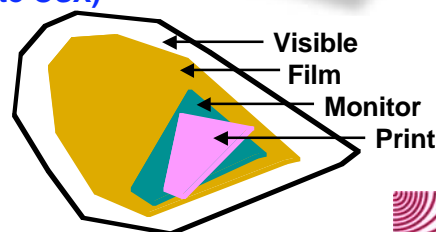
Color Spaces and Output

Going from larger to smaller is fine, but not smaller to larger

Film   **Monitor**   **Print**   **sRGB**

Photoshop RGB Setup determines your working space
It's the color tag attached (or profile) or RGB working space
Good and Bad color spaces
sRGB (default Photoshop 5.0) = bad = clips 30% Cyan
Adobe RGB 1998 (SMPTE-240M) = good but too much green
AppleRGB, ColorMatch RGB, Bruce RGB (www.pixelboyz.com)

Teach About Lighting

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The same proof or camera shot will look different under different lighting conditions

Better Lighting Options

Fluorescent illumination   **Tungsten illumination**   **5000 K Illumination**

1-Philips D50 fluorescent lamps (Home depot)
2-Solux, 3-Ott-Lite $70, 4-TrueColor Task Lamp

1

2

3

4

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Images

Image Acquisition
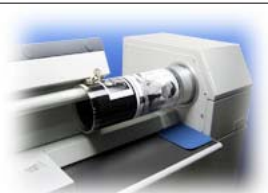
Drum scanners have higher resolution and can capture a greater dynamic range then less expensive flatbed scanners

Use the right tool

- Drum (PMT) for 35mm slides & transparencies
- Flatbed (CCD) for 4 x 5 or larger reflectives

Digital camera use is soaring

- Worldwide sales digital hit 50 million units in 2003

Everyone needs to master digital camera usage

- Users have to learn more about lighting, calibration and color
- Service providers need to learn how to fixing color casts and automating the process with batch functions and profiles

Scan Quality = Res + LPI

Usually only 300 dpi in final size
res determines sharpness that's why
Line art needs more res (600 - 900 dpi)
Can calculate using 2:1 ratio (dpi:lpi)
To print 150 lpi need 300 dpi (w/o enlarging)
To print 85 lpi need 170 dpi (w/o enlarging)
To calculate with enlargements use
(line screen x 2) x enlargement = scanned res
(150 lpi x 2) x   200/100   = 600dpi
(120 lpi x 1.5) x   50/100   = 90 dpi

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Descreen halftones

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To print photos we convert contones to halftones through screening

Screening results in line screens with screen angles that scanners see

If apply screening to them again during printing the create moire

▸▸ Need to descreen when scanning halftones

VueScan

| Input | Crop | Filter | Color | Output | Prefs |

Scan task — Scan to file
Scan from — Astra 6400
Media type — Magazine

| Flatbed(Reflective) |
| Color, RGB |
| 150 dpi |
| Magazine (133 DPI) |
| No Filter |
| 100% |
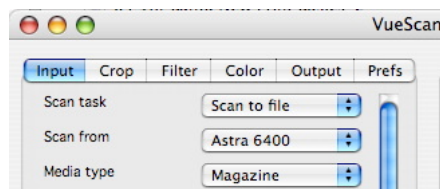
VueScan (Umax OSX+)   **VistaScan (Umax OS9-)**

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Screen grabs

Screen grabs are low resolution
- Mac (OS9) grabs are 72 dpi and PICT files
- Mac (OSX) grabs are pdfs
- PC files are 96 dpi and BMP files

But these don't print well

Options to improve quality
- Altamira Genuine Fractals
- highest quality (altamira-group.com)
  ▸ Photoshop bicubic
    - slowest best quality
- Photoshop nearest neighbor
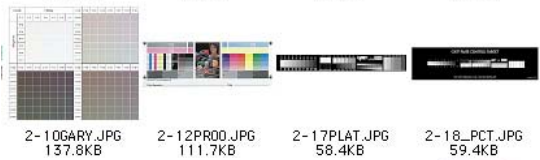 - fastest but worst

Howiefenton.com

300 dpi

FPOs & Scaling

FPO (for position only)
- If sending low res and want hi-res replacement
- Type or write "FPO" across picture

▸ **Avoid Anamorphic Scaling**
- Different scaling in height than width
- Not obvious on screen (72dpi)
- Avoid XPress shortcut (com - shift -F)
- Use (com - option - shift -F) instead

X%:20%
Y%:10%

X%:18%
Y%:28%

GraphicConverter $35 App

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Picture Effect Special Windo

Zoom ▶
Size ▶
Resolution... ⌥⌘R
Brightness/Contrast... ⌥⌘B
Levels... ⌘L
Auto Levels ⇧⌘L
Mode ▶
Colors ▶
Invert ▶
Rotate ▶
Mirror ▶
Median... ⌥⇧⌘M
Shift ▶
Duplicate...

Pixmap Information... ⌥⌘I
Histogram... ⌥⇧⌘H

Full Screen ⌘G

Play ⌥⌘P

Put Picture on Desktop

Supports most file formats

Performs

Mode or res change

Brightness / contrast

Rotate

Batch file conversions

➤➤ **Image database**

2-10GARY.JPG   2-12PR00.JPG   2-17PLAT.JPG   2-18_PCT.JPG
137.8KB   111.7KB   58.4KB   59.4KB

lemkesoft.com/us_gcabout.html

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and
Salesperson

Fonts

Why 3 Font formats

Mac   PC

morg_____.pfb

morg_____.pfm

In the mid-80s, Adobe introduced its Type 1 fonts based on vector graphics and the Postscript language

Adobe put in Mac and PC OS and charged $

Unlike bitmapped fonts, vector fonts could be made larger or smaller (scaling) and still look good

Microsoft and Apple did not want to pay royalties to Adobe for fonts (plug ins to there operating systems)

Develop True Type fonts and TrueImage printers

TrueType popular on not on the Mac

But many people had trouble printing

OpenType is the latest font technology, Microsoft and Apple

Container for both TT & T1, it was designed to fix font wars

Same font can be used on Mac and Windows

Not taking off
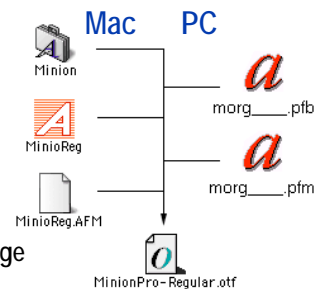
PC Fonts

PC TrueType fonts composed of a

*.ttf file (actual font) & *.fot pointer to *.ttf file

PostScript Type 1 font is composed of a

*.pfm (screen) font file has the screen info

*.pfb (printer) font file has the font outline data

Font files are usually stored in

Windows directory (Windows 95)

Windows\-System directory (Windows 3.1x)

But can stored them in other locations using a font manager (e.g.,Suitcase, ATM, FontMinder).
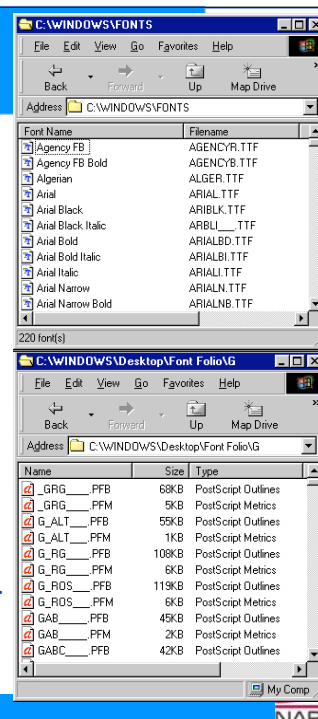
Mac Fonts

Need to send

Screen and printer for Type 1

1 file for Truetype (TT) fonts

OS 9 fonts in System Folder > Fonts

OSX fonts in Users >Library > Fonts

View by list, then click on to open Font Book

Screen fonts & TT Fonts = font suitcase,

Printer = PS Type 1 outline

Times
Screen
Bodoni 14
Screen
Humanist 521
TT
SerifGot
Type 1 printer
HermeBol
Type 1 printer

Avoid Character Styling

Things to avoid

MS Word 2004

XPress 4.11

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Common Problems & How to Avoid

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Good & Bad PDF's

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Bad : PDF writer - Not PostScript
Files based on OS
Mac QuickDraw or Win GDI routines
EPS render at screen res (jaggy)
Masks in EPS files disappear
Subsets fonts (if LT 35% char) used
Good ways
- **Create PDF (Mac), PDF Maker (PC),**
- **Print to Distiller (PC) Create PDFx/1a**
- **Acrobat Server - insures everyone makes it the same way**
- **Get server provider for settings file, create PostScript, 2nd create PDF file**

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Transparent Objects

Advanced Window Help

Accessibility ▶
Acrobat Distiller
Batch Processing...
Catalog...
Document Metadata...
eBook Web Services ▶
Export All Images...
Forms ▶
JavaScript ▶
Links ▶
Manage Digital IDs ▶
PDF Optimizer...
Web Capture ▶

Use Local Fonts ⇧⌘Y

Proof Setup ▶
✓ Proof Colors ⌘Y
Overprint Preview ⌥⇧⌘Y
Separation Preview

Transparency Flattener Preview...
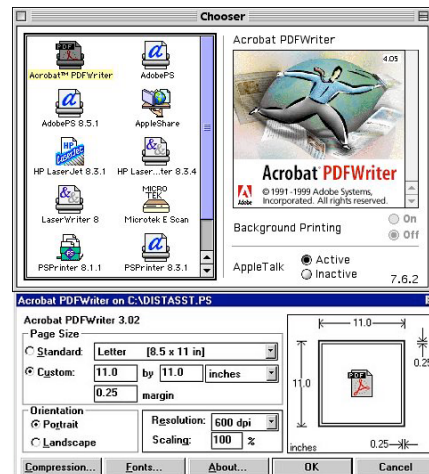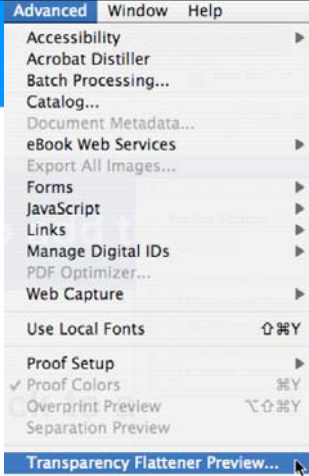
Transparency can be created in Adobe Photoshop, Illustrator, and InDesign using opacity percentages, blending modes, feathering,and drop shadows.

Works well when images are displayed on screen (WWW) but problems when printing

Should discourage use in for print jobs

If receive use Transparent Flattener Preview shows the objects that are sources of transparency

- **transparent objects**
- **objects blending modes**
- **opacity masks**
- **Feathering**
- **drop shadows**

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Banding with Gradations

Digital Designer, CSR and Salesperson

Banding is a common with Level 1 & 2 devices

- **Most app's encode by creating a multitude of lines or boxes offset slightly with a slightly different colors**
- **What appears as a blend is 256 boxes that all overlap - it range exceeds 256 -banding**

Old work around solution (Level 1 & 2 devices)

- **Replace with Photoshop blends created as 300 dpi CYMK TIFF with 2% noise**

Smooth shading introduced in PS 3, PDF 1.3 and new Illustrator, Photoshop and Acrobat
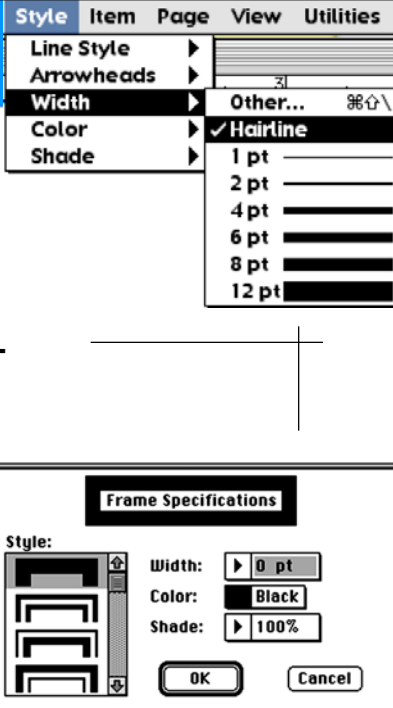
For Level 3 devices print using level 3 print driver and should get better blends due to "smooth shading"

Acrobat 5 and 6 have the ability to improve blends made in other apps.
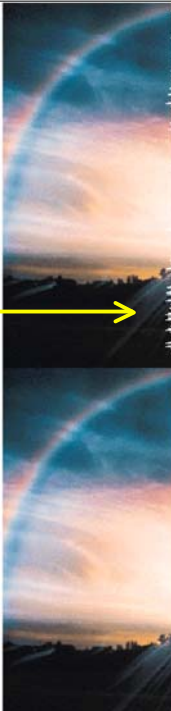
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XPress Problems to Avoid

Style	Item	Page	View	Utilities

Line Style ▶
Arrowheads ▶
Width ▶ → Other... ⌘⇧\
Color ▶ ✓ Hairline
Shade ▶ 1 pt
2 pt
4 pt
6 pt
8 pt
12 pt

No white boxes for "white out"

Don't use "hairline" definition

    Different widths in different programs - use .25 point

Don't use rules to create frames -

    Use the box tool

Don't use hairlines > .25 points - dotted lines > .4 points wide.

Only 1st 6 frames in XPress Fra Editor are PostScript others bitmap

Frame Specifications

Style:

Width: ▶ 0 pt
Color: Black
Shade: ▶ 100%

OK   Cancel

XPress Picture Box Bug

With XPress 3.32 avoid using background color "none" or transparent color

    or print with stair stepped edges

    because XPress tries to mask or remove white background pixels

Images must be placed with a

    white or zero percent black background

Unless the image is an EPS with a clipping path, then they need to be set to none

Other programs can have problems

    Set photo box backgrounds to none in Illustrator and Freehand

9/14/05

Rotating Pictures

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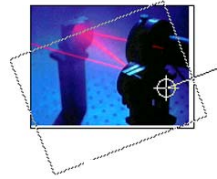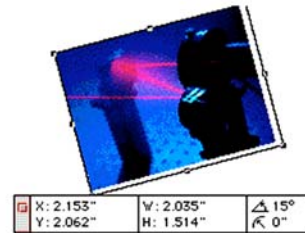
Don't visually rotate in XPress
Tougher to print

Don't Mathematically Rotate in XPress
Tougher to print

Rotate in picture Photoshop
Rotate box in XPress
Use with no rotation

Limit Cropping

Digital Designer, CSR

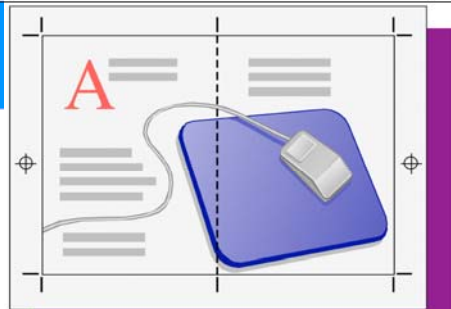**Don't use large tiff or eps file and crop to see specific areas**
Tougher to print

Instead reduce the size in the application (Photoshop, Illustrator) and import the smaller file
Easier and more reliable to print

Crossover

Areas of a reader spread in which the image crosses over the two pages

2 issues
- Color match - across the pages
- Alignment of text, lines or pictures

Solution
- Extend art at least 1/8" into gutter
- For lines - using thicker lines helps
- But - the only way to overcome is ask the planner if they can place on the same form

Bleed Correctly

Artwork or color extends to page's edge
Different programs create bleeds different
- Some automatically, others "turn on", some require "extending it" off the page

Variances in folding & trimming make it difficult
If require extending off
- Extend at least 1/8" past specified trim
  - backgrounds, photos, rules
- Avoid placing critical items (page numbers. Folio, company logo) too close to the edge
- All critical copy (page #'s, folios) that does not bleed should be positioned 3/16" away from the trim
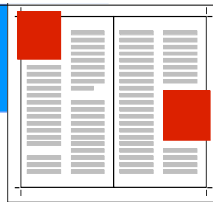
No Leftovers

Digital Designer, CSR

off paste board

- **Look for left over elements**
- **Zoom back to see the paste up area**
- **Use "select all" and see if any other elements (handles) show up**
- **Delete unused elements**

PDF's not locked

- **Can edit linework or pictures in PDFs by using the Touch-Up tool & Illustrator 9+ or Photoshop 6+**
- **Go to Acrobat > preferences>TouchUp**
- **Set up Photoshop for image editor and Illustrator for Page Object Editor**

Use the right STUFF

Digital Designer, CSR and Salesperson

Many programs do not support CYMK separations (MS Suite, early Publisher)
- **Makes it tough to create separations**

Better to use professional programs
- **Quark, PageMaker, InDesign, Illustrator, Freehand, Coral**

Use good file formats
- **TIFF (no LZW compression), or JPEG**
- **EPS (with binary encoding, send embedded fonts, no alpha channels, no JPEG compression, no paths)**

Silhouettes
- **use the path tool, turn clipping path "on" and flatness setting of "8" when saving your EPS**

Update all linked graphics

Don't use < > ¥ / : * ? " | in file or folder names

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Send the right stuff

Digital Designer, CSR and Salesperson

Fonts
- **Fonts remain one of the greatest issues**
- **PDF files still need fonts - so fully embedded**
- **Missing fonts can cause text reflow**

Send all scans
- **Minimum resolution should be 300 dpi**
- **Save RGBs as wide gamut (not sRGB)**
- **Placed graphics for 4c - should be CYMK**
- **Send earlier versions**
  - **Layered files (fix) , RGB files (color correcting)**

Send the latest proof
- **Not from the garbage can, mark current proof**
- **If smaller make reduced XX%**

If color send color and / or separations
- **With separations mark spot colors**

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Must Sends

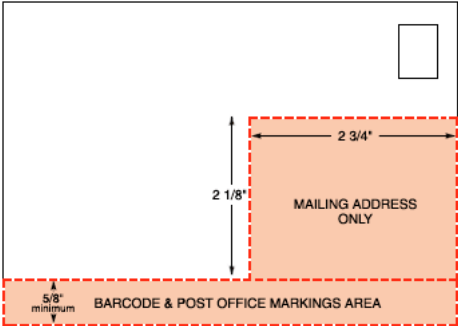Digital Designer, CSR and Salesperson

Don't send the only file

Send laser proofs

Send all fonts

    screen, printer, embedded in eps files

Send all files (tiffs, eps, original app files)

Send information

    Programs used, versions, fonts

    Page size, # pages, # colors, finishing, etc

Folding / Backup Dummy / Mailing Reg's

Digital Designer, CSR and Salesperson

Not always clear- how to fold

Without folding or backup dummy a printed piece may be useless

Confirm and work within mailing regulations

2 3/4"

2 1/8"

MAILING ADDRESS ONLY

5/8" minimum

BARCODE & POST OFFICE MARKINGS AREA

The following is an explanation of different brochure folds. A template for each of these folds is available from the downloadable templates. Use this page as a guide to decide which template is best for you.

Two Panel Fold
This template represents a two-panel folding brochure. Panel size is 4" x 9". Document size is 8" x 9".

Three Panel Trifold (11.937" x 8.375")
This template represents a three-panel trifolding brochure. Panel size is 4" x 8.375". Document size is 11.937" x 8.375" with one panel adjusted for trim and fold.

Three Panel Trifold (11" x 8.375")
This template represents a three-panel trifolding brochure. Panel size is 3.687" x 8.375". Document size is 11" x 8.375" with one panel adjusted for trim and fold.

Four Panel Double-Parallel Fold
This template represents a four-panel folding brochure. Panel size is 4" x 9". Document size is 15.937" x 9" with one panel adjusted for trim and fold.

Laser Separated Proofs

Digital Designer, CSR and Salesperson

Before sending – print out composite and separations

- Print full size composite and check for proper size, placement and typo's
- The number of individual color pages per file will show if the spot and process colors are set right

Don't ignore blank separations (usually means something wrong (white out - white filled boxes

Send both to service provider

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Serious about cutting $ - then…

Digital Designer, CSR and Salesperson

Ask questions

- There are no dumb questions... only dumb answers!
- But avoid asking why- Most people don't know why

More important to know "how"

- How can I avoid that problem
- How can I work around that issue

Most important

- Keep a notebook of information you get from your printer and make a job log for each publication listing things you need to remember.
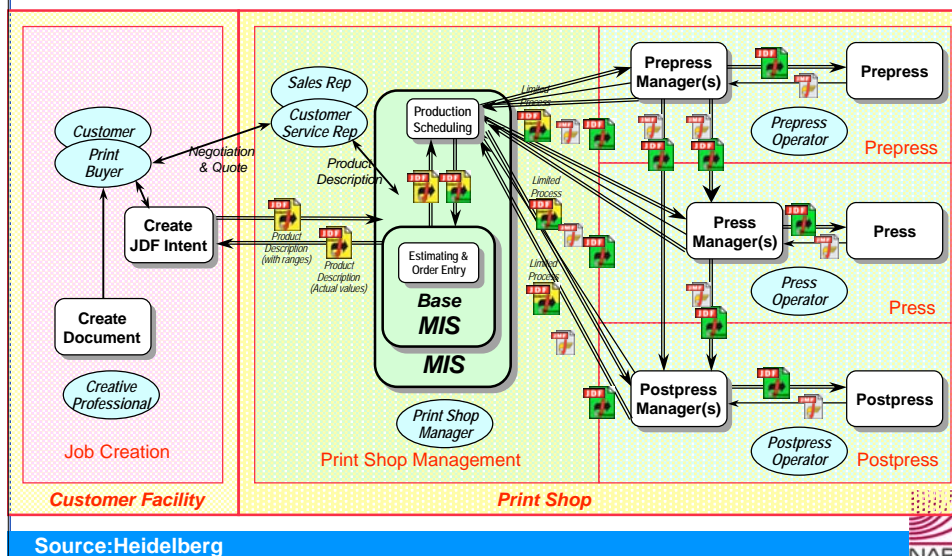- Soon you will have written your own digital-to-print manual that is specific to your requirements and services!

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Digital Designer, CSR and Salesperson

The Future

CIP4 / JDF is an end to end solution

Digital Designer, CSR and Salesperson

Source:Heidelberg

Good News / Bad News About JDF

Digital Designer, CSR and Salesperson

Good news - Years of effort being placed on
the language and equipment to work
Good - interoperational tests show
Beta sites are working & getting ROIs
CIP4.org, www.ngppartners.org/case_studies.htm
Bad news
Generally requires new equipment
Greater need for upfront production planning
JDF info from clients will need to be preflighted and corrected
Job planners, CSRs, MIS staff will need to learn internal
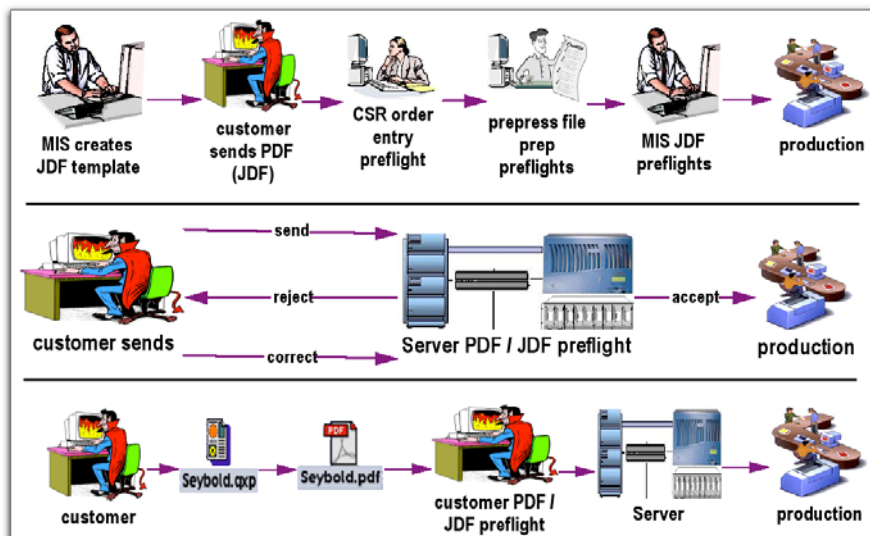equipment capabilities (prepress, press, postpress) and JDF
Good News (Most likely)
New customer preflight and server JDF preflight tools will
most likely appear

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A tale of 3 JDF workflows

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Thanks

Digital Designer, CSR and Salesperson

More Questions ?

come to NAPLs Booth #862 to talk more

More sources of info

My newsletter

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Other Sources:

www.napl.org

www.printplanet.com

www.PODI.org

www.gain.net

www.HowieFenton.com