The Printer Working Group

Proposed Printing Extensions

Publishing and the Open Web Platform

A W3C Workshop on Publishing using the Open Web Platform

September 16th and 17th, Centre Pompidou, Paris

PWG Background

- The PWG is a group of 33 printer manufacturers, operating system providers, print service and management application developers.

- With origins in 1991 as the Network Printing Alliance, the PWG has become a part of and/or worked with general standards organizations to generate standards that communicate User Intent to networked Printers and communicate Printer Capabilities and Status to Users..
  - As an IEEE WG to standardize a hardware interface - IEEE-1284
  - As an IETF WG to generate the Printer MIB and the Internet Printing Protocol (IPP) set of standards
  - As an IEEE-ISTO Program, supporting and continuing the work done under IETF
  - With W3C, drafting the initial XHTML-Print and CSS-Print documents
  - With DMTF, generating Printer CIM
  - With Broadband Forum, generating Printer management schema

Position on Publishing via the Open Web Platform Producing Printed Products

- Two key areas that need extension or improvement:
  - Page rendering
  - Job ticketing – Conveying User Intent for production of hardcopy
- Three major Job Ticket formats in common use today:
  - JDF for high-end production printing
  - Microsoft Print Schema (MSPS)- for Windows-based printing
  - PWG Print Job Ticket (PJT)
- Mapping between these formats is feasible
  - All of the common elements map cleanly - media, copies, duplex, stapling/binding, etc.
  - Fidelity of mapping can be an issue for some elements - folding, imposition templates, etc.
- Much Print Production will be in less 'professional' environment
  - Smaller runs, less trained staff, faster turn-around
  - Desirable to convey User production intent directly to print device
  - PWG PJT elements are exposed via Internet Printing Protocol (IPP) in virtually all networked printers sold today

- Define a core set of CSS and XSL properties that represent common Job Ticket elements and values
- Additionally, define a Job Ticket source property that allows the document author (or the publisher) to provide an exact representation of the Job Ticket in a particular format: e.g.,

```
print-ticket: url('path/to/job-ticket.jdf') format('jdf'),
         url('path/to/job-ticket.pjt') format('pwg-pjt'),
         url('path/to/job-ticket.msps') format('msps');
```

  This is similar to the approach used for embedding of fonts in CSS and provides a great deal of flexibility

- Many of these properties can also specify simple restrictions
  - For example: "Only one copy of this coupon may be printed"
- Properties can act as Media Features with property values assigned based on Media Queries
  - For example: Tailor output based on selected/supported media, color vs. grayscale, finishing or duplex options, etc.

Core Job Ticket Properties

- The PWG PJT defines a core set of Job Ticket elements that are widely supported by network printers. Examples:
  - Accounting: *user and billing IDs*
  - Copies: *count and collation*
  - Covers: *media and type for front and back*
  - Finishings: *bale, bind, booklet maker, cover, fold, jog offset, punch, staple, etc.*
  - Insert Sheets: *media, count, and locations*
  - Media: *dimensions, margins, source, type, and many more*
  - Number-Up: *count and presentation*
  - Orientation: *document and feed*
  - Output Bin: *Bottom, FaceUp, LargeCapacity, Left, MailboxN*, Rear, Right, etc*
  - Output Control: *color mode, content hint, quality, rendering intent, resolution*
  - Overrides: *per-page and per-document*
  - Sides (duplexing): *OneSided, TwoSidedShortEdge, TwoSidedLongEdge*
- The PJT includes over 100 Job and Document Processing Elements and over 50 Description Elements

PWG Position Summary

- PWG Print Job Ticket (PJT)elements should be used to define a set of CSS/XSL Job Ticket properties defining printing intent.

- Because PWG PJT elements are communicated to printers via the Internet Printing Protocol (IPP), which is supported by virtually all networked printers, these elements provide reliable communication of User printing intention to the print device.

- IPP queries communicate printer capabilities in terms of the same elements; Media queries can be used to customize printing to the capabilities of the print device.

- Mapping from PJT to other commonly used job tickets is feasible

- PWG Web Site: **http://www.pwg.org/**

- PWG Print Job Ticket specification:
  - ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm20-pjt10-20120801-5108.07.pdf

- IPP Everywhere specification:
  - ftp://ftp.pwg.org/pub/pwg/candidates/cs-ippeve10-20130128-5100.14.pdf