Requirements for WEB Browser-Based Internet Printing

Internet Printing

- Uses World Wide Web tools, programs, servers and networks
- Works for printers attached to servers locally or through networks
- Uses HTTP servers and browsers (although not exclusively) to provide print operations including
  - locating printers by attributes
    - *capabilities*
    - *geography*
    - *name*
  - launching a printer installation process on the client
  - printing jobs
  - cancelling jobs
  - monitoring and managing
    - *jobs*
    - *printers*
  - configuring printers
- Is independent of client and server operating systems

Requirements for WEB Browser-Based Internet Printing

What is Internet Printing?

Internet Printing is the application of World Wide Web tools, programs, servers and networks to allow "end-users" to print using methods and operations similar to those currently used for locally attached or LAN printing in the platform dependent OS. Internet Printing will include the use of HTTP servers and browsers to provide static, dynamic and interactive print services location, printer installation, selection and configuration as well as remote printer and print job monitoring.

IPP Requirements - Roles and Tasks

- End-user
  - Finding and Locating Printers using WEB Browsers
  - Creating a local "instance" of a printer
  - Using a WEB Browser to view:
    - *Status of the printer*
    - *List of jobs*
  - Submitting a print job
    - *Using standard applications*
    - *Pushing or Pulling a pre-formatted document*
    - *Using a reference to an existing document not located on the client*
  - Viewing the status of a print job using WEB Browsers
  - Alerting due to printer errors, job errors and job compete
  - Cancelling his own print job
- Operator
  - Alerting due to printer & job error conditions
  - Changing some printer and job attribute
- Administrator
  - Printer installation and configuration
  - Access control lists
  - Defaults, templates, views
  - Charge-back, accounting

Printer Locating & Selecting

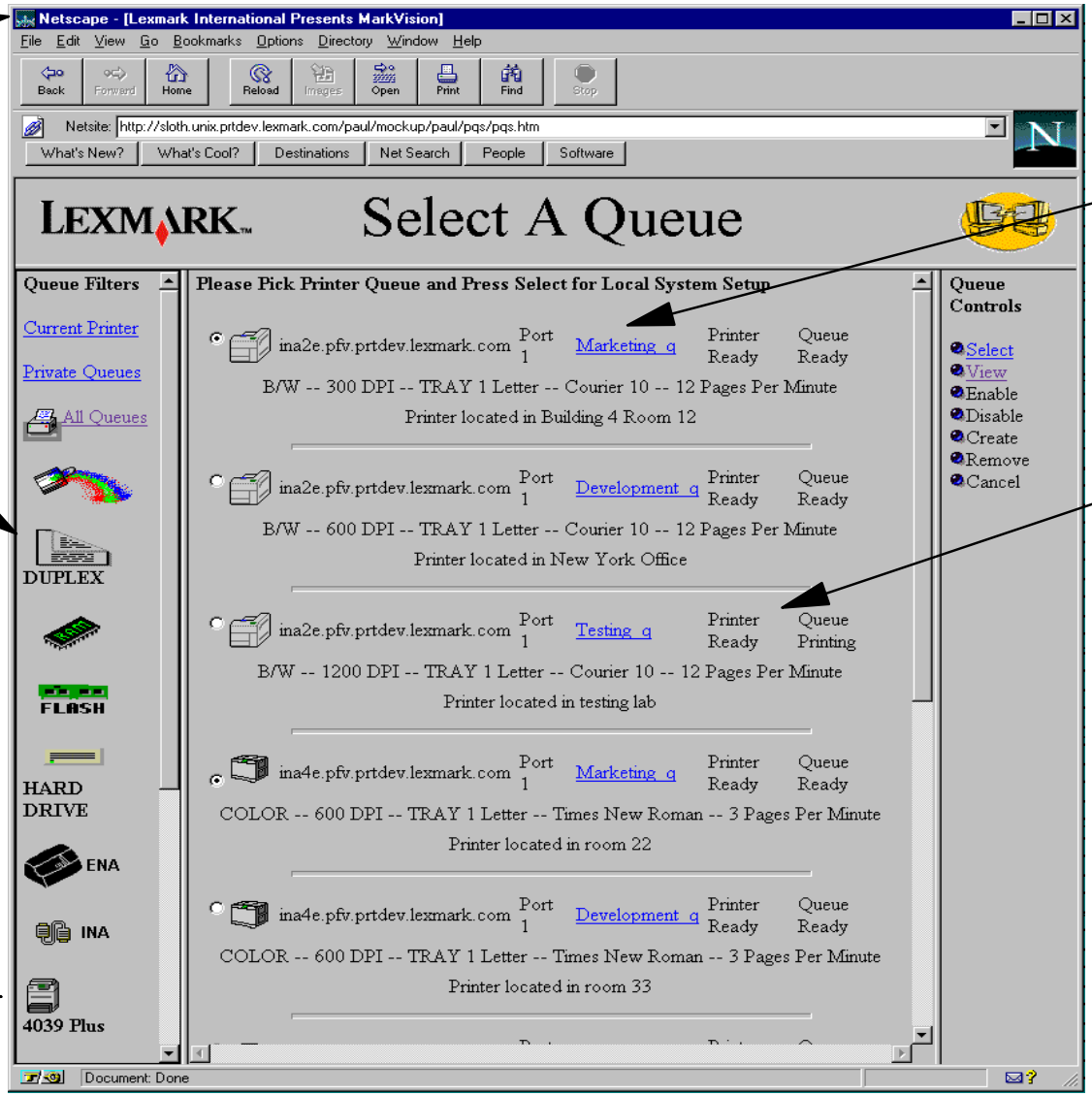
"Off the Shelf" Web Browser

Select Printer by Capability

Select Printer by Model

Details

Printer & Queue Status



"Job Ticket" Creation

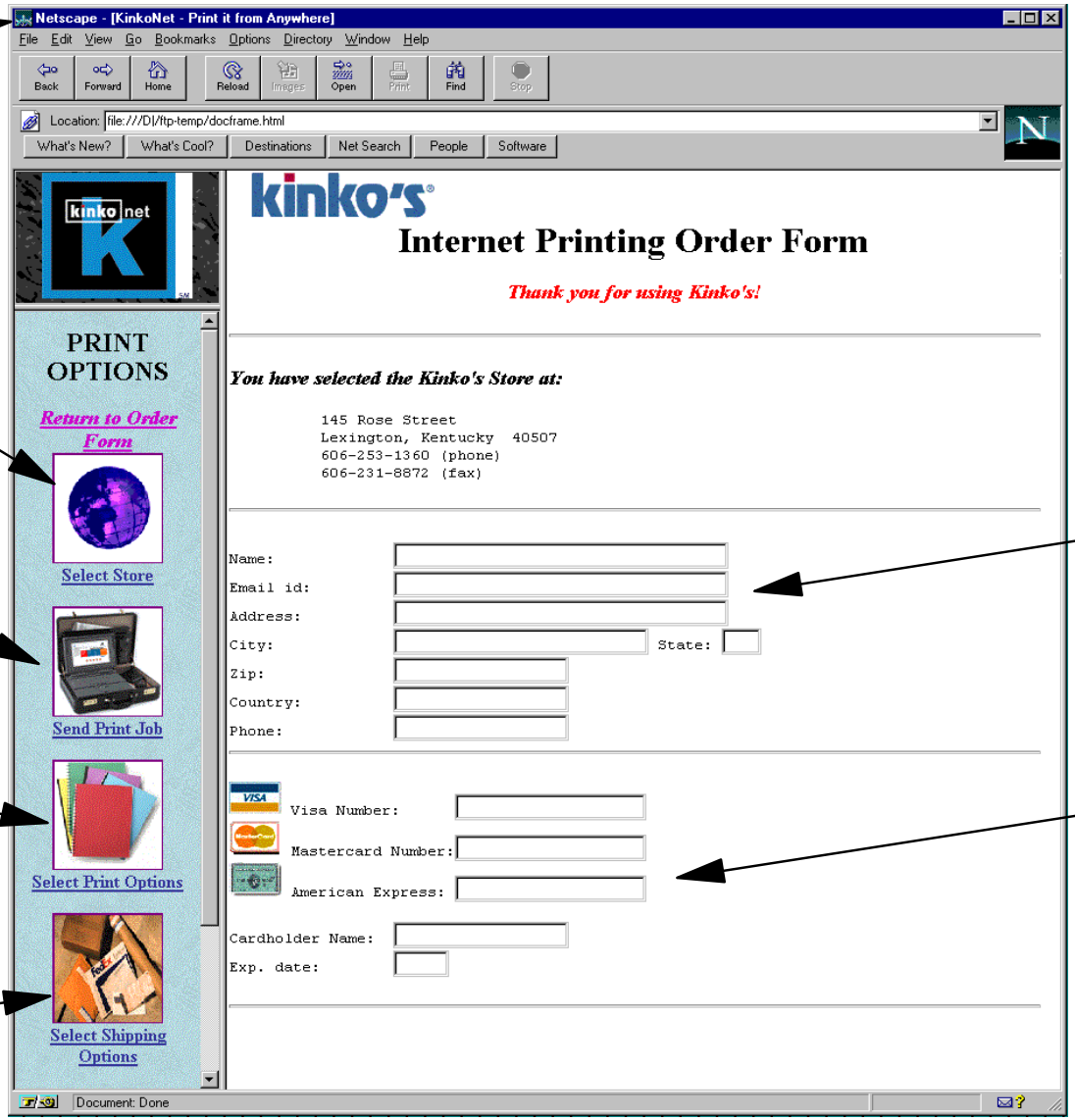
"Off the Shelf" Web Browser

Select the Store

Submit the Print Job

Select Print and Finishing Options

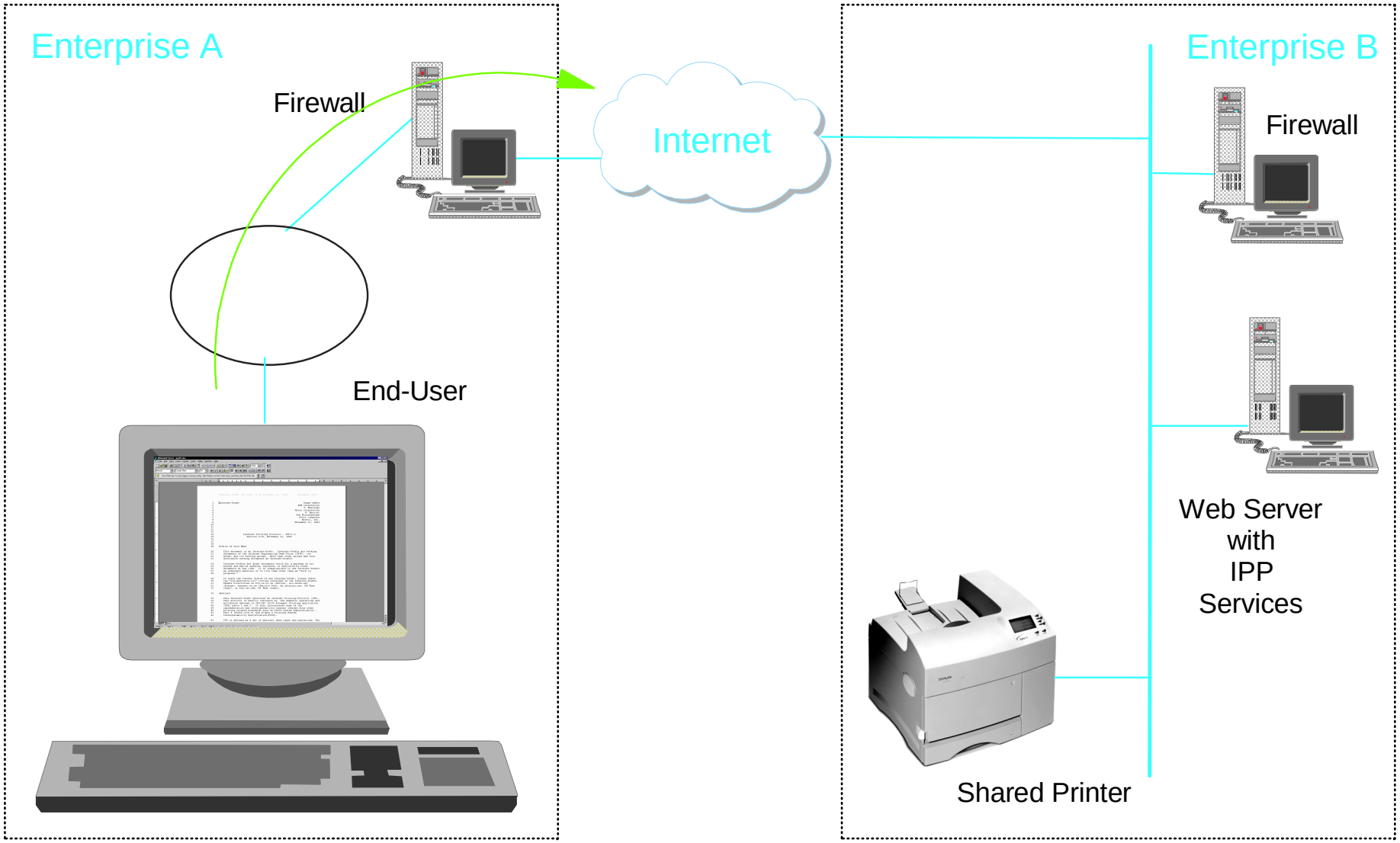
Shipping Options



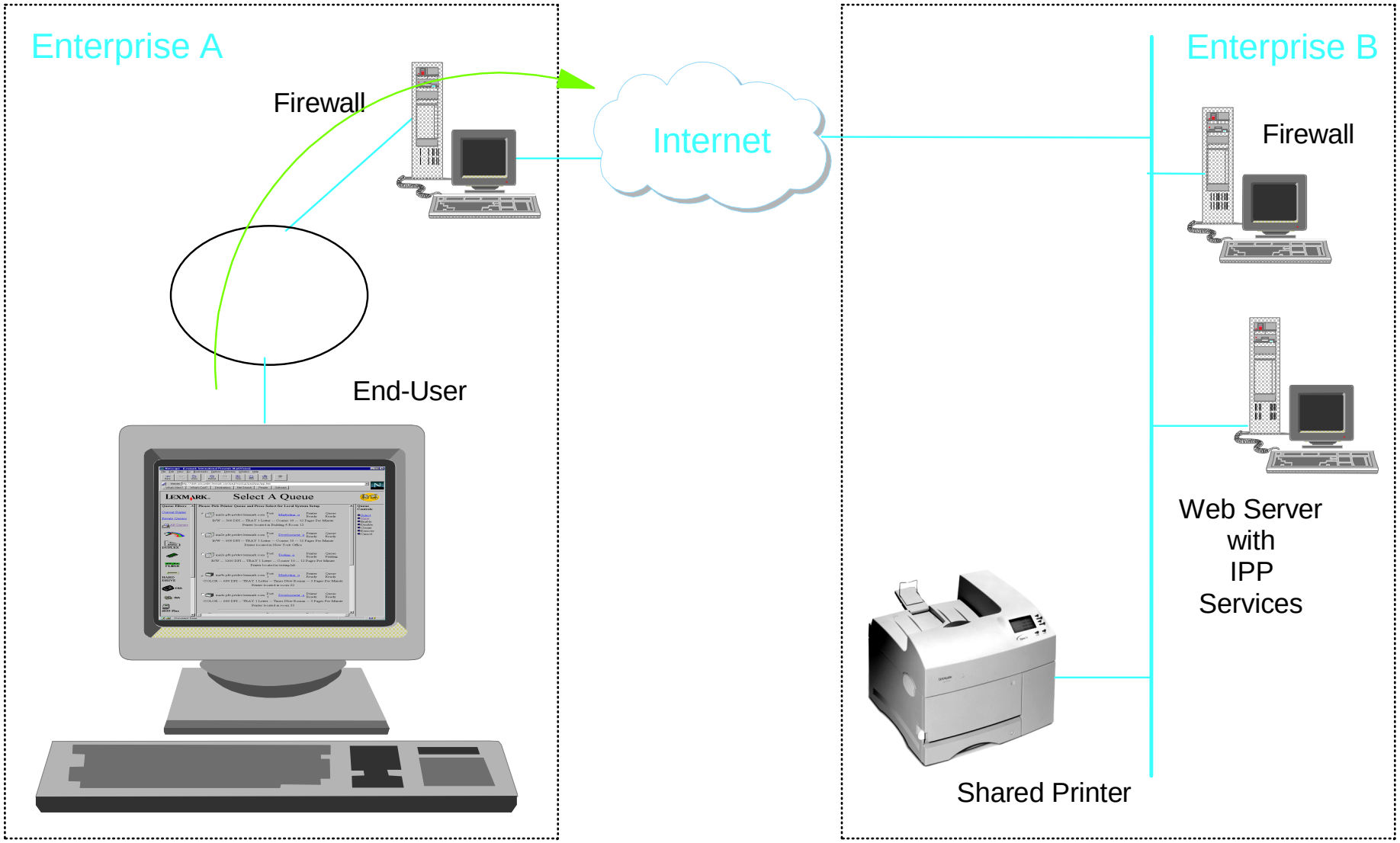
Customer Information

Billing/Payment Information

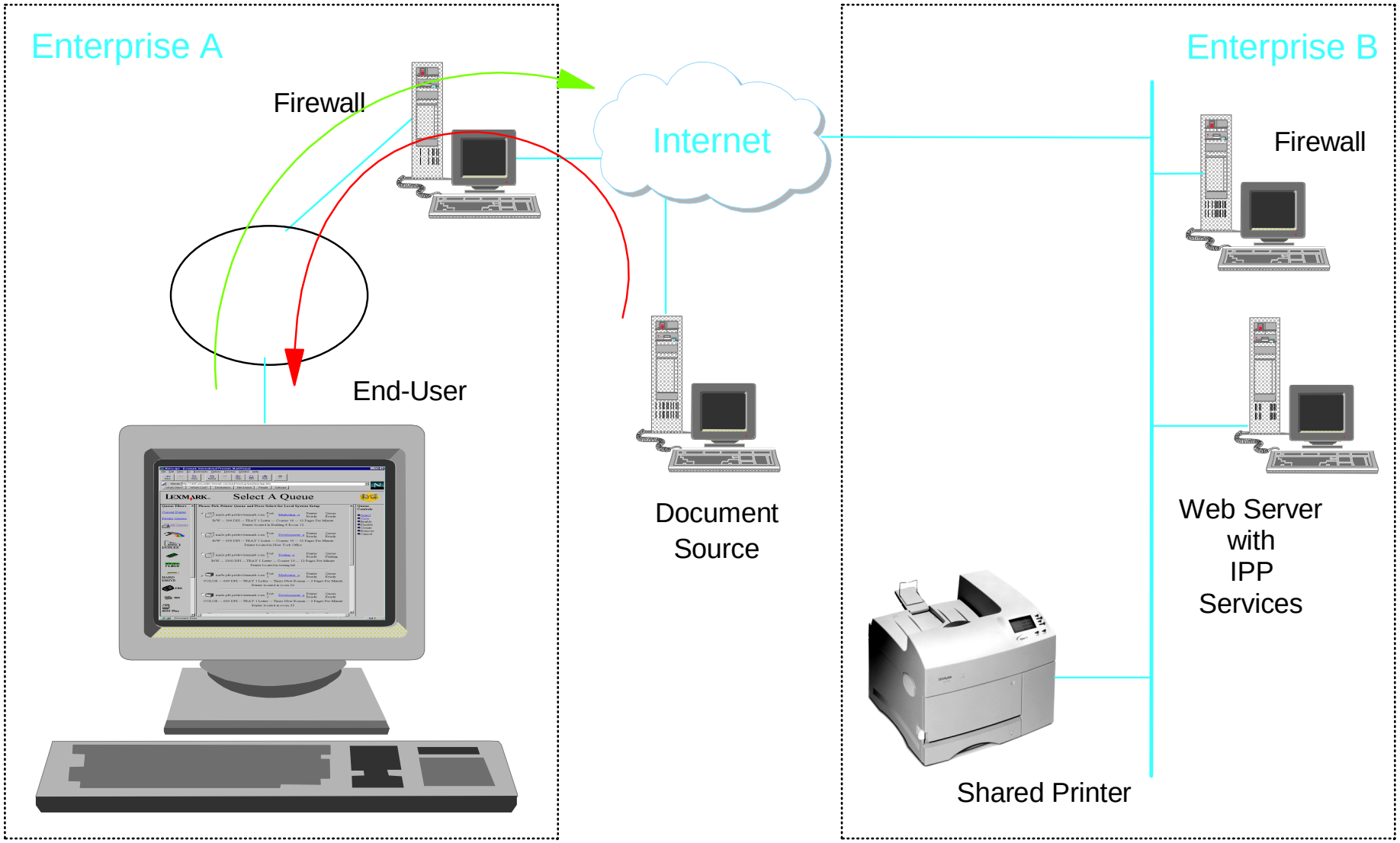
Internet Printing - Application



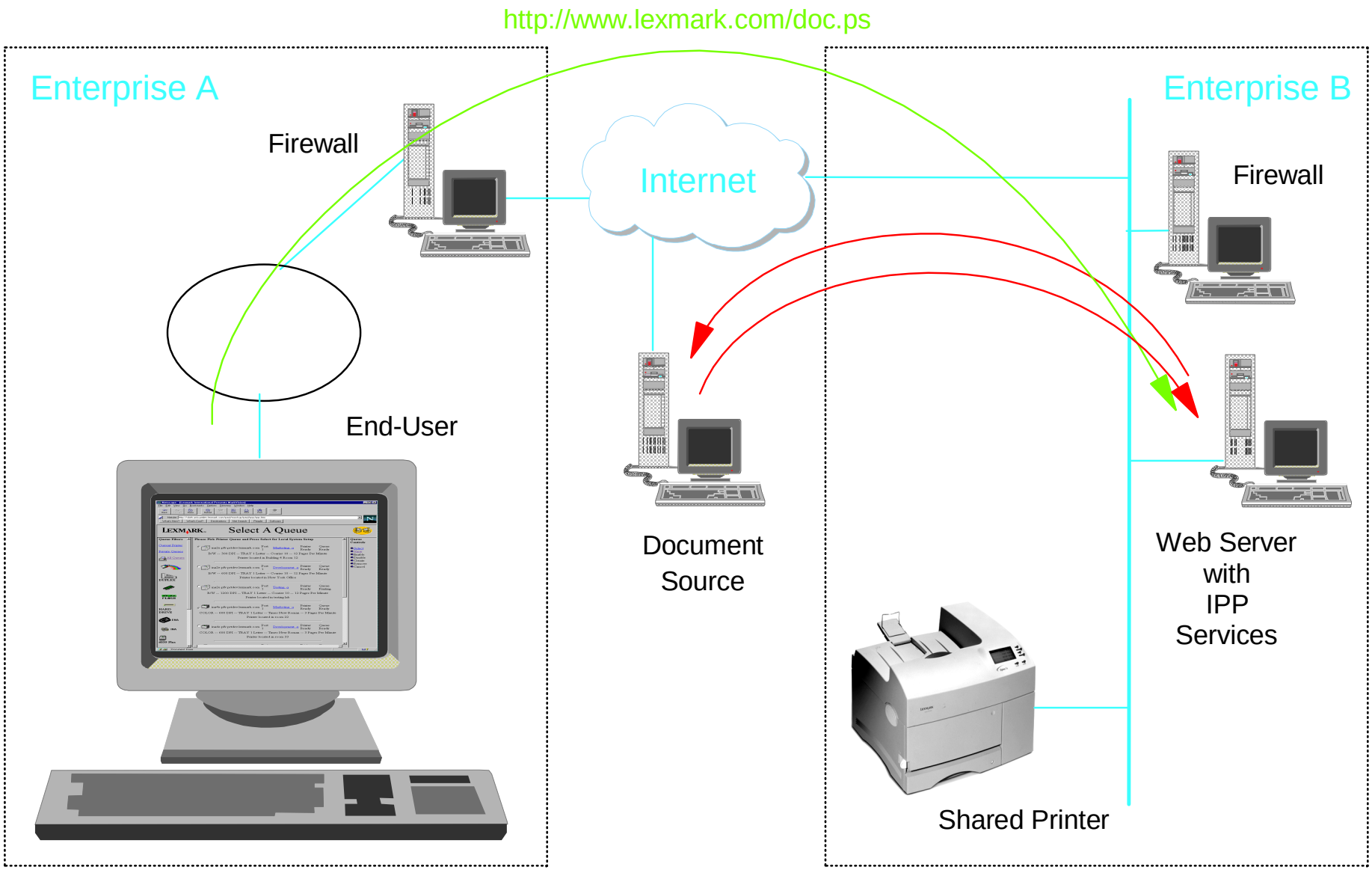
Internet Printing - Pushing



Internet Printing - Pulling



Internet Printing - By Reference



IPP 1.0 Requirements - Objectives

- End-User Requirements Only
- Independent of
  - Client operating systems
  - Server operating systems
- Security
  - Authentication, Authorization, Privacy, Commercial Transactions
- Interaction with LPD
  - RFC 1179
  - Not backwards compatible
  - Will supplant LPD
- Firewalls
  - Protocol must pass through firewalls where enabled by the firewall administrator
- Internationalization
  - Must be enabled

IPP Requirements - RFC1179

- RFC1179 designed for line printers
- Support for page printers is minimal
- Vendor extensions have been inconsistantly added

  (see ftp://ftp.pwg.org/pub/pwg/ipp/historic/xopen-psis-xdpa/appendix-d-lpd-extensions.ps)
  - Sun adds additional attributes
  - Xerox "buries" options in the -C*class* option
  - IBM adds
    - *extensions to the -o option*
    - *new options (-N, -T, -Z, -t, -n, -B)*
  - HP adds
    - *New control file extensions (R,A,"N B","N O",J)*
    - *extensions to the -o option*
  - Digital adds new control file extensions (>,<,A,B,D,E,F,G,K,O,S,X,Z,x,z)
- Conclusion -- RFC1179 not the place to start for an Internet Printing Protocol