

Student Printing Management System (CTSC update)

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WATERLOO

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Agenda

- The long & bumpy road
- Update on process
- Achievements, issues & future plans
- Feedback (Student & staff)
- How to get involved?
- Discussion

The long & bumpy road

Student Printing Functional Requirements

Introduction

The CTSC Printing Sub group has been investigating printing at the University of Waterloo. In keeping with the original recommendation from the McBoyle report for the creation of CTSC, the group is looking for opportunities to collaborate and share expertise and experience across campus. Consequently, the group has been identifying and documenting best practices with the goal of providing a seamless printing experience for students. The focus of this document is students who are charged to print to University-owned printers. Some issues facing other groups (such as Faculty and Staff) may be similar, but are beyond this document's scope.

Goals

The primary goal is to make the task of printing as seamless and efficient for our students as possible. The key component of which is to provide a consistent user experience across campus. Supporting this is the goal of seeking out opportunities for collaboration.

Functional Requirements

User support

- Easy to use and consistent interface across faculties and release stations.
- Understandable naming of printers and any other labeled terminology/technology.
- Simple and standardized procedure for printing from student-owned wireless devices (laptops/tablets/smartphones) – such as PrinterOn, currently used by the Library.

Device Platforms supported

- Windows
- Unix/Linux
- Mac OS
- Mobile devices (e.g. tablets & smart phones)

Network Protocols

- Encrypted IPP (Internet Printing Protocol)
- LPD/LPR (Line Printer Daemon/Line Printer Remote)
- CIFS (Common Internet File System, also known as SMB Server Message Block)


Page Description Languages

- PS (PostScript), the defacto printer "standard". Desired default PDL on campus.
- PCL (Printer Command Language) for problem PDFs on HP printers.

UCIST Recommends Student Printing Pilot

- Retail Services will lead the pilot project in partnership with CTSC Printing Sub-committee*
- RFP release in May June – 2013; presentations in July; evaluation June August; testing in summer fall – 2013
- Release date dependent on testing results; the two faculties and Retail Services decided on Jan-2014 release date
- Pilot Group consists of:
 - Two faculties:
 - Faculty of Environmental (Lab environment with release station & multiple printers)
 - Applied Health Sciences (Lab environment release from workstation & one printer)
 - One college – Renison (using Xerox MFP)

Existing Printing Scenarios

- Currently ~~three~~ four scenarios
 - XAS printing (2 steps)
 - Most faculties (AHS, Arts, Engineering, Science, Math)
 - Equitrac printing (3 steps)
 - Used by ~~ENV~~ & School of Architecture
 - Funds are transferred from XAS
 - ITC / PrinterOn (2 applications – 1 step)
 - Library printing services
 - Combination of ITC & PrinterOn
 - PaperCut (1 application – 1 step)  “The Pilot”

Achievements to date

- Test/training environment setup in GSC
- Production printing environment in AHS, ENV & Renison
- Easy to manage interface for faculty IT Admin staff
 - Fully involved in the deployment process (including training)
- Students print directly from WatCard Flex Funds
- Currently print jobs released from “release station” or from workstation or mobile device via web interface
- Currently 2 Virtual Windows (PaperCut & a Print Server)
 - A third will be for Web Printing
- Database hosted in IST’s SQL cluster

Issues to date

- Connection between PaperCut and Heartland - resolved
- Importing WatCard (student IDs) – still manual
 - Working on automating; currently no impact on system
- Current Xerox (MFPs) still use “Secure Access EIP 1.0+”
 - MFPs still fully functional; working on solution
 - IST resolved issue with work-around
- Old (10+ years) Ricoh (MFP) colour printer
 - IST working on solution; most likely similar to Xerox (MFP) issue

Future Plans

- Web Printing
 - Upload print jobs from personal computers & mobile devices
- “Follow me printing”
 - Print to a virtual queue and release at desired printer later
- Tighten security
 - SSL communication between all the servers
- Faculty Print Servers
 - Work on adding these servers – more distributed administration
- Secondary application server
 - Still in discussions with Vendor on final configuration

Student Survey Questions (1)

- Is the new printing system convenient? **YES – 100%**
- What do you like about the new system?
 - Don't require money in printing account – **76%**
 - Easy to Use – **47%**
 - Faster – **24%**
- Where on campus would you **MOST** like to see printing services offered?
 - Computer Lab – **67%**
 - Library – **50%**
 - Student Life Centre – **28%**
 - Residences – **22%**

Student Survey Questions (2)

- What device do you WANT to be able to print from?
 - Laptop on campus – 59%
 - Computer Lab – 53%
 - Phone/Tablet – 47%
 - Computer off campus – 18%
- Where on campus would you MOST like to see printing services offered?
 - Computer Lab – 67%
 - Library – 50%
 - Student Life Centre – 28%
 - Residences – 22%

Student Survey Feedback

- Its so Awesome and cheap. I was the first to use it !!!
- Easy to use, and nice to see cost before printing B&W
- Cool :) Less tedious than before, having to switch money from accounts twice!
- The old printing system took extra money for the transfer, so this system is nicer.
- Good upgrade from previous system
- Much easier to use than the old system where you have to login and transfer money 3 times to put money on your printing account
- Faster

IT Admin Staff Feedback

- Absolutely fantastic!
- Anecdotally printer output is increasing
- Numerous release/interface options is impressive
 - Release station with multiple access controls
 - WatCard swiper
 - Enter WatCard (i.e. Student) number
 - Enter Nexus credentials
 - Web interface from either workstation, laptop or mobile smart device
 - Web Printing (soon) – upload files directly to web server
 - Follow Me Printing (soon) – pick up print jobs at any printer on campus
- Nice reporting features & easy to refund

How do you get involved?

- Department printing scenarios.
- Contact
 - Randy Dauphin rdauphin@uwaterloo.ca
 - Bill Baer bill.baer@uwaterloo.ca
- Demo and admin
- Setup infrastructure

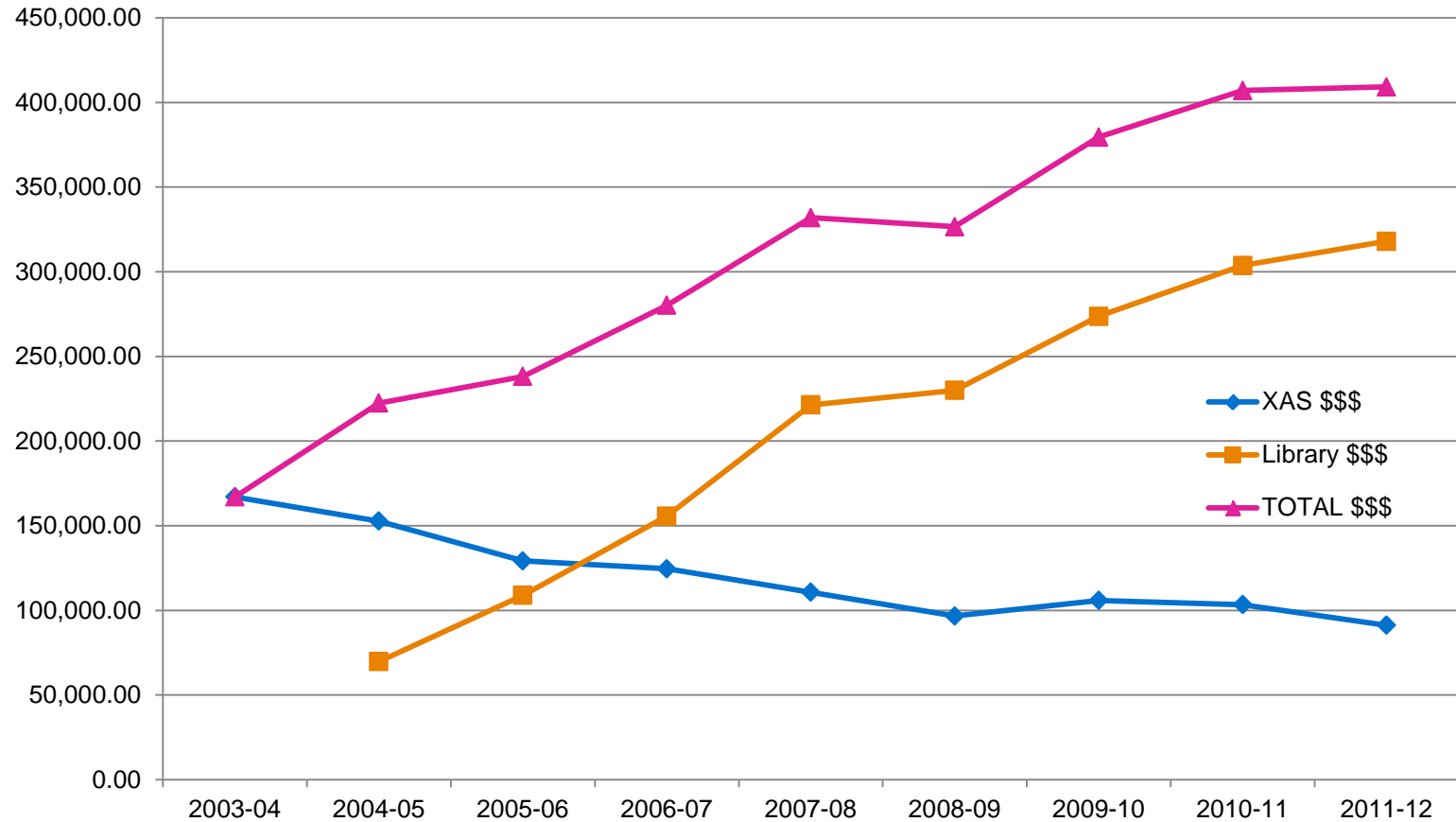
Questions & Discussion ...

- Transition information on current student printing funds
 - AHS – allowed funds to remain in XAS (if student wanted to print elsewhere)
 - ENV – allowed funds to remain in Equitrac (to be used up, but appears it might be orphaned)
- How quick is implementation of new area?
 - Quick, however varies depending on area
- Any issues with BAD PDFs, etc?
 - Only one to date, however anecdotally seems to be fewer!
- How does faculty define what they want to support?
 - i.e. how much control remains in the hands of the local IT Admin staff?
 - Control of queues remains in local IT Admin staff hands
 - Both AHS & ENV are focusing on dialing-back the need for controlling too much
 - Defining print-queues, clearing queues, refunds, trouble-shooting remain at local level
- Does it interface with Linux computers?
 - Yes, fully supported, however only minimal testing to date
- Continue to update CTSC and UCIST (soon)
 - When new faculties join
 - Create a community area for collaboration

Functional Requirements

- Make the task of printing as seamless and efficient
- Provide a consistent user experience across campus
- Simple and standardized procedure for printing from student-owned wireless devices
- Single sign on – integration with Central Authentication Service (CAS) and WatCard credentials.
- Run a single, centralized and centrally-supported instance of the print spooling, accounting, and quota software
- Create a flexible accounting system that allows differential charging and tracking of costs
- Easy to use reporting tools
- Flexible quota system
- Support entitlement printing
- Easily add a robust range of networked printers to print spoolers
- **The ultimate goal is to charge the WatCard directly on a per-job basis. That is, users pay with the WatCard in one step rather than n steps.**

University Printing trends



Outcome for Students

Printing at UW will be:

- Better, Efficient & Economical
- Eco-friendly
- Secure
- Improved user experience
 - Updated (i.e. Mobile)
 - Convenient
 - Easy
 - Flexible

Outcome for Admin...

Printing at UW will be:

- Printing revenue should increase
- Tax issues will be simplified
- Remote location will also be facilitated
- Every printing activity can be monitored centrally
- Yet allowing for decentralized tweaking