XYZ Insurance's Managed Print Service Project

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Proposal Overview

Problem Summary

XYZ Insurance is a national car insurance company with more than 60 locations across the United States. The company is looking to gain better insight and improve its current printing processes. Many employees at XYZ Insurance travel from location to location and find that it is often difficult to choose the correct printer. Currently, if an employee would like to print, they must work through the following steps:

1. Physically walk to the printer they'd like to use
2. Note the name of the printer
3. Walk back to their workstation
4. Choose the matching printer (This is an increasingly long list of printers as

XYZ Insurance expands)

5. Submit their print job
6. Walk back to the printer to retrieve their documents

This process is time consuming. Choosing the wrong printer could mean printing documents in another distant location. It opens the opportunity for documents to be picked up by the wrong individual and mishandled. Sensitive consumer or employee data could fall into the wrong hands.

Administrators at XYZ Insurance are struggling as they have little insight into how printers are being utilized. They are unable to set limits which leads to accidental large print jobs and increased waste. Administrators have little visibility into specific employee usage and need that additional information to help educate employees on acceptable printer use. Administrators are looking for a way to set alerts. They are currently only reactionary to ink and paper levels and need a system that would allow them to be proactive and maintain necessary inventory.

IT Solution

XYZ Insurance has contracted JPrint to improve the current printing processes by implementing a centrally managed printing solution. JPrint will work with XYZ Insurance to install PaperCut, a managed print service, that will tie in all their existing printers and simplify the steps employees take to print their documents. The long list of individual printers will be replaced with a single option to choose from. Employees currently have a badge system in place to allow entry into each location. Utilizing this existing system, badge readers will be installed on each printer. XYZ Insurance employees will be able to submit their print job at their workstation, walk to any printer at any location, and scan their badge to release the print job. Administrators will have a website they can access to monitor printer usage, audit individual employee printing histories, and make informed data-driven decisions. The website will allow them to set alerts for usage and low ink levels so they can keep inventory levels on par with their needs.

Implementation Plan

JPrint will start by assessing the current printers installed across all locations. XYZ Insurance will provide a list of all printers currently in place including their network information, make, model, and location. After the current environment is mapped, the project team will work to purchase the necessary licensing from PaperCut. When licensing is obtained, the PaperCut managed print service will be installed on an existing server at the XYZ Insurance headquarters location. XYZ Insurance IT administrators will set thresholds for monitoring and alerts in the accompanying PaperCut backend website. JPrint will set up automated toner purchases for restocking when inventory is low. XYZ Insurance divides its business into three regions. These regions are west, central, and east. Employees typically travel between locations in their region. One region at a time, JPrint will work with local IT staff at each location to install badge readers on existing printers at each location. After the badge readers are in place, the printers will be enabled in the PaperCut print server at headquarters and the employee badge IDs will be imported into the system. The existing long list of printers on employee workstations will be replaced with a single option. XYZ Insurance will send employees instructions detailing the new process and how to print moving forward. The project will be complete when administrators have proper monitoring setup, all printers at each location are linked back to the managed print server, and employees can seamlessly scan their badges to print at any location.

Review of Other Work

Optimizing a company's printing infrastructure can be a significant challenge. This can be compounded by businesses that have many locations spread across large distances. In a case study analysis by Louella Fernandes and Clive Longbottom (2013), they describe a global utility organization's implementation of a managed print service (MPS). This organization has over 300 locations around the world. Implementing an MPS addresses "both security and cost recovery"

by having users authenticate themselves before they release their print jobs (Fernandes & Longbottom, 2013). XYZ Insurance can share the same benefit as employees will have to identify themselves with their badge when they are physically in front of the printer attempting to print. The MPS enabled cost recovery by "providing centralized visibility of print cost and usage" (Fernandes & Longbottom, 2013). The utility organization had the added benefit of the MPS backend website that provides reporting and alerts. This increased visibility can help XYZ Insurance administrators monitor their organization's printing and make informed purchasing decisions.

Maintaining the ability to print can require many people to be involved. A CDW article analyzing managed print services (Hennick, n.d.) notes, "At many organizations, print exists in a sort of limbo between IT and operational departments." IT staff may be responsible for troubleshooting the equipment, but the operations teams may be responsible for maintaining inventory and ordering additional supplies when they are low. This disconnect can cause disruptions for employees who need time-sensitive documents and tie up IT staff as they are troubleshooting several other devices. Although these tasks can be simple, using an MPS can help automate this process and reduce the associated labor costs (Hennick, n.d.). XYZ Insurance can use a managed print service to automatically order toner when a certain level is reached. The MPS can send email alerts to operations teams when it's time to fill the printer with more paper and notify IT if a printer isn't functioning properly or needs a new toner cartridge. Automating this process lowers the number of people needed to maintain the printers, ensures supplies are always available and reduces downtime.

XYZ Insurance is looking for a solution for employees who travel from location to location and need the ability to print anywhere. Ofer Bar-Zakai, an Engineering and Operations Manager at Google, wrote about one of the key elements they needed was "the ability for a user

to press print in Google's New York office and collect that same print job in their London office after travel" (Bar-Zakai, 2022). This is exactly what XYZ Insurance is seeking to implement. Employees can print to a unified print queue and never have to worry about which printer they need to select at their workstation. The managed print service gives employees the freedom to choose any printer, at any location, and at any time.

Businesses are searching for ways to simplify their print process for employees and reduce the associated costs. John Meyer, the Director of IT for Wisconsin Lutheran College, explains how after they implemented the ability for students to swipe their student ID card to release their print job, the functionality "cut paper usage in half almost immediately" (Glaser, 2019). With no managed print service in place, Meyer says, "some print jobs were sent multiple times, piling up on printers and leading to waste and frustrated users" (Glaser, 2019). XYZ Insurance employees have a badge they must scan to enter any location. They can use the same badge to authenticate themselves and release their documents at the printer. This links print jobs to individual employees for any necessary auditing and stops documents from sitting in the printer too long.

Project Rationale

XYZ Insurance started in 2016 as a small operation providing motorcycle insurance. However, in 2018 XYZ Insurance began its low-cost car insurance program and customers from all over the country were looking to use XYZ Insurance services. With the large increase in customer acquisitions, the business has been rapidly opening new offices over the past four years nationwide. The founder of the business initially had no intention of expanding out of the few states they began in. The employees were hired to work from a specific location and didn't need to travel between buildings. The technology chosen by the business was implemented with that in mind. Many of the issues that occurred were handled by a single IT employee at each location.

There is now a small team of IT administrators at each site and there is at least one office in each state.

As the business grows, some of the current technology in place has not scaled with it. XYZ Insurance is now able to invest in better processes to properly plan for future growth. Many employees have several documents they need to print every day. Often employees submit their print job only to find that the printer is out of toner or not functioning properly. Their only choice is to find another printer in the building and open a request for IT to troubleshoot or reload the printer with new toner. When IT replaces the toner cartridge, several old documents that were queued begin to print. This is a waste of resources as most employees have moved on and found another printer. With more employees at each location, the risk of sensitive documents being left in the printer or mishandled has only increased. In addition, IT administrators and leaders have no way to limit or audit employee use. To improve this process and cut costs, XYZ Insurance needs to implement a managed print service. A managed print service will allow all printers to be centrally managed in one system. Employees will need to scan their badge when they are physically standing in front of the printer to release their print job. The new system offers the ability to set alerts for low ink or low paper as well as provide insight into how the printers are being used by logging each print job. Employees print to a single virtual printer that allows them to release their documents at any printer regardless of location.

Current Project Environment

XYZ Insurance decided early on to standardize the equipment used at each location. As a result, each location uses the same printer hardware. There is at least one HP LaserJet Pro M404dn and one HP Color LaserJet Pro MFP M479fdn printer on each floor in every building. XYZ Insurance has 145 printers across 63 locations. Each printer is in a shared space connected

to the network, assigned a static IP address, and mapped with a DNS hostname. A sign with the printer's hostname is posted near each printer so employees can choose the correct printer at their workstation when submitting documents.

Employees use a thin client to remote into a Windows virtual desktop environment hosted at the headquarters location. The list of all network printers is preloaded in the standard computer image for each employee. When attempting to print, employees choose the matching hostname from an increasingly large list of printers.

XYZ Insurance uses a badge system for entry into each location. Employees receive a badge when they are hired and must scan their badge to unlock the door. The Building Security team manages access to each location and allows employees to enter buildings with their badges based on their assigned region. When scanned, the employee badges identify themselves with an eight-digit employee ID. The current badge system in place is compatible with the proposed managed print system and no additional upgrades or adjustments will be needed.

Methodology

In collaboration with the XYZ Insurance IT teams, JPrint will be using the ADDIE methodology model for the project. XYZ Insurance has been successful in the past using this method and has requested JPrint to follow the same plan. The ADDIE project methodology consists of five separate phases. From start to finish, the phases are Analysis, Design, Development, Implementation, and Evaluation. The first two phases of this project have already been completed.

During the analysis phase, JPrint met with XYZ Insurance to form a project team, understand the current environment, and demonstrate how their printing processes currently function. XYZ Insurance walked through the entire process from start to finish while

highlighting the pain points. The project team determined that the scope of this project will include just the network printers and separate fax services will be addressed at a later date.

JPrint provided XYZ Insurance with their recommendations during the design phase. A managed print service created by PaperCut was the chosen system. It was determined that the system will be housed in the XYZ Insurance headquarters data center. Administrators will set alerts for IT to replace low ink cartridges and create automated purchase orders. Additionally, they'll set alerts for the operations teams to refill the printers with paper when they are running low. The badges used by employees to enter buildings will also be used to authenticate themselves when releasing their print job. The final step will be to replace the current list of printers in the employee's workstation with a single virtual printer.

XYZ Insurance has already given JPrint some preliminary background information regarding the printer makes and models that are currently used in the environment during the analysis phase. However, in the development phase, XYZ Insurance will provide JPrint with the network information for each printer including MAC address and static IP address. They will provide the location including building and floor to gain a full picture of where each device is and create an accurate device list in the new system. The necessary licensing will be acquired from PaperCut and the software will be installed on existing hardware at headquarters. Administrators will familiarize themselves with the new system and set necessary alerts. XYZ Insurance will work with their badge system vendor to export the current employee IDs for import in the new PaperCut managed print system. JPrint will order and ship compatible badge readers to each XYZ Insurance location.

The implementation will begin by piloting the new system at a single XYZ Insurance location. The existing printers will be linked to the new managed print system and JPrint will work with local IT staff to install the new badge readers and update the posted signage for

employees. XYZ Insurance will send communications to employees to bring awareness to the change and provide instructional material. When it has been determined that the new system is functioning as intended for one location, the rest of the region's printers will be linked to the new system. After the first region is online and connected successfully, the other two regions will follow.

Bringing the project to a close, the evaluation phase will include testing the process from start to finish. The project team with representatives from XYZ Insurance and JPrint will submit a print job in one location, travel to another location, and attempt to release the print job to validate success. XYZ Insurance will gather feedback from employees to determine if there are any inconsistencies or provide additional employee training.

Project Goals, Objectives, and Deliverables

Goals, Objectives, and Deliverables Table

	Goal	Supporting objectives	Deliverables enabling the project objectives
1	Understand current printer hardware	1.a. Gather all existing printer hardware information	1.a.i. Create a spreadsheet with existing printer hardware information and location details
		1.b. Obtain printer network information	1.b.i. Gather hostnames, MAC addresses, and static IP addresses associated with each printer
2	Upgrade printing processes	2.a. Set up PaperCut managed print service	2.a.i. Purchase licensing from PaperCut
			2.a.ii. Install and configure PaperCut managed print service on existing server at headquarters
			2.a.iii Import existing printers
			2.a.iv Set alerts, limits, and automated toner purchasing
		2.b. Utilize existing badge system	2.b.i. Purchase compatible badge reader hardware and ship to each location
			2.b.ii. Obtain export of employee IDs from existing location entry badge system

			2.b.iii Import existing employee badge IDs into managed print service
		2.c. Update employee computers	2.c.i. Replace existing printers in employee Windows virtual desktops.
		2.d. Test and validate the print process	2.d.i. Perform a test print on site
			2.d.ii. Perform a test print and travel to another location
3	Provide employee training	3.a. Send communication	3.a.i Send email communication to employees informing them of the change
			3.a.ii Email instructional information to employees
		3.b. Update posted signage	3.b.i. Update posted signs near printers to remind employees of the new process

Goals, Objectives, and Deliverables Descriptions

Goal 1: Understand current printer hardware. While XYZ Insurance has a general idea of the hardware currently in place, they don't have a complete updated list of all printers at each of their locations. Additionally, to connect the printers with the new managed print system, they will need to gather network information for each printer. Goal one will be complete when the project team has a detailed spreadsheet with all necessary printer attributes. This goal includes the following two objectives:

Objective a: Gather all existing printer hardware information. XYZ Insurance will direct their local IT staff to create a list of printers at their local office including hostname, make, model, building, and floor. This is a crucial step, and the objective will be considered complete when there is a full understanding of what and where each printer is so that they can be properly entered into the new managed print system. This objective has one deliverable:

Deliverable i: Create a spreadsheet with existing printer hardware information and location details. A shared spreadsheet will be created to include each location. Local XYZ Insurance IT staff will be responsible for accessing the spreadsheet and entering the printer location, hostname, make, and model details for their office.

Objective b: Obtain printer network information. The XYZ Insurance IT network team will update the shared spreadsheet to include network information for each of the respective printers. Using the hostname provided by local IT staff, the network team will gather the matching network information. This objective will be complete when the network team has entered all information and matched it to their location. Objective b has one deliverable:

Deliverable i: Gather hostnames, MAC addresses, and static IP addresses associated with each printer. The XYZ Insurance IT network team will use their existing tools to export the MAC addresses and static IP addresses associated with the hostnames provided. The team will use this export information to complete the shared spreadsheet.

Goal 2: Upgrade printing processes. This is the main goal for the entire project. XYZ Insurance's current printing processes have caused frustration for employees by wasting time and resources. By investing in a new managed print system, employees will have a simple process for releasing their print jobs using their badges. Additionally, IT administrators will have better controls and insight into how their printers are being utilized. Administrators can create email alerts for the proper IT teams to replace missing toner cartridges and notify operations teams to refill the printer with paper. The second goal will be considered complete when the new

PaperCut managed print system is set up, printers have been connected, employee computers have been updated, and the system is tested to verify employees can print using their badges.

Goal two includes four objectives:

Objective a: Set up PaperCut managed print service. To set up the new system, the project team will contact PaperCut to purchase a license. PaperCut will be installed, the existing printers will be imported into the new system, and IT administrators will configure the system to set limits and alerts. JPrint will set up automated purchasing of toner for restocking. This objective will be complete when the new managed print server is set up, existing printers are connected, and automatic restock is implemented. This objective has four deliverables:

Deliverable i: Purchase licensing from PaperCut. The project team will reach out to PaperCut to gather licensing information. After licensing is agreed upon, XYZ Insurance will gather the necessary purchase approvals internally and obtain a license from PaperCut. The license provided by PaperCut will be used for activation when the system is installed.

Deliverable ii: Install and configure PaperCut managed print service on an existing server at headquarters. XYZ Insurance IT has determined that an existing Windows server in their headquarters data center has the necessary hardware requirements to install the PaperCut managed print service. After installing PaperCut, the project team will work with the network team to make it accessible to the existing printers and employee virtual desktops.

Deliverable iii: Import existing printers. Using the information in the spreadsheet, the existing printers will be imported into the PaperCut system. After importing the printers, the details regarding location and floor will be entered to

differentiate them. This will allow XYZ Insurance to organize them by location in the new system enabling them to better target the offices for alerts.

Deliverable iv: Set alerts, limits, and automated toner purchasing. IT administrators will set email alerts for the local IT staff at each office to notify them when a printer is running low on ink. Email alerts will also be set up for local operations teams to refill the printer with paper when it's near empty. IT will set a limit of 50 pages allowed to be released in a single job. Automated toner purchasing will be set up with JPrint to automatically ship toner to each location before they run out.

Objective b: Utilize the existing badge system. Employees are provided with a badge when they go through new hire orientation. The badge is used to enter each location. This system is managed by a third-party vendor and XYZ Insurance's building security team. XYZ Insurance would like to utilize their badges to authenticate employees when releasing their print job. This objective will be complete when new badge reader hardware is installed, and the project team has obtained existing badge information from the vendor. This objective has three deliverables:

Deliverable i: Purchase compatible badge reader hardware and ship to each location. JPrint will obtain the necessary badge reader hardware and ship it to each XYZ Insurance location. When the badge readers are received, JPrint will work with local IT staff to install the new hardware on each printer and verify its connection.

Deliverable ii: Obtain export of employee IDs from existing location entry badge system. XYZ Insurance has an existing badge system used by employees to enter their offices. Each badge is given an employee ID number and tied to the

employee's name. The project team will reach out to the vendor that manages their badging system to obtain an export of the employee IDs.

Deliverable iii: Import existing employee badge IDs into managed print service. Using the exported badge numbers provided by the badging system vendor, the existing IDs will be imported into PaperCut. This will enable employees to use their badges to authenticate themselves when attempting to release their print job.

Objective c: Update employee computers. After physically walking to the printer to obtain the hostname, the employee must scroll through a long list of printers to pick the matching name. After installing the new system, the list will be replaced with only one option. This objective will be complete when employee virtual desktops have been updated to remove the old list and replaced with the new virtual printer.

Deliverable i: Replace existing printers in employee Windows virtual desktops. Employees currently have a long list of all printers on XYZ Insurance's network. To simplify the process, the list will be replaced with a single virtual PaperCut printer. Employees will print to the virtual printer and the correct printer is chosen by walking to any printer and scanning their badge.

Objective d: Test and validate the print process. The project team will perform tests to verify that the technology is working as intended. The tests will be completed within one location as well as from one location to another. This objective will be considered complete when a successful print job is performed at one site and when traveling to other locations. The objective has two deliverables:

Deliverable i: Perform a test print on site. To verify the system is working

properly at one location, the project team will walk through the entire process. They will submit a print job on a virtual desktop, use their badge to authenticate, and release the print job at a printer in the same location.

Deliverable ii: Perform a test print and travel to another location. To ensure that employees who travel from location to location can release their documents at other locations, the project team will perform a test. They will submit a print job at one location, physically travel to a different location, use their badge to authenticate, and release their print job.

Goal 3: Provide employee training. While this may be a welcome change, employees need to be made aware of how they are affected before the new system is implemented. Providing the information ahead of time will help to minimize any disruption that the new process may cause. This goal will be considered complete when employees have received communication about the planned changes and are provided with instructions to follow the new process.

Objective a: Send communication. To keep employees informed, email communications before implementation will be sent. The project team will also send instructional documentation before the project is live. The objective will be complete when employees have been informed of the coming changes and have a guide for the new process. This objective has two deliverables:

Deliverable i: Send email communication to employees informing them of the change. To make employees aware of the changes that are going to occur, XYZ Insurance will send informational emails to employees. This will help employees understand the reasoning behind the new process and prepare for the change.

Deliverable ii: Email instructional information to employees. Although the process is simple, XYZ Insurance will send employees step-by-step instructions on how to print to the virtual printer and release their print job using their badge. This will serve as a reference for employees as they familiarize themselves with the new system.

Objective b: Update posted signage. Near each existing printer, XYZ Insurance has posted helpful signs to guide new employees. This objective will be complete when the existing printer names and instructions have been updated for the new system. The objective has one deliverable:

Deliverable i: Update posted signs near printers to remind employees of the new process. There are currently signs with the existing hostnames posted near each printer. There are also helpful instructions posted for the current procedures. The signs will need to be replaced with the name of the virtual printer and the instructions will need to be updated to follow the new process.

Project Timeline with Milestones

Milestone or deliverable	Duration (hours or days)	Projected start date	Anticipated end date
Meeting – Project Start	1 day	7/5/2022	7/5/2022
Create a spreadsheet with existing printer hardware information and location details	2 days	7/6/2022	7/7/2022
Gather hostnames, MAC addresses, and static IP addresses associated with each printer	1 day	7/8/2022	7/8/2022
Purchase licensing from PaperCut	5 days	7/11/2022	7/15/2022
Send email communication to employees informing them of the change	1 day	7/18/2022	7/18/2022
Install and configure PaperCut managed print service on an existing server at headquarters	1 day	7/18/2022	7/18/2022

Import existing printers	2 hours	7/19/2022	7/19/2022
Set alerts, limits, and automated toner purchasing	3 hours	7/19/2022	7/19/2022
Purchase compatible badge reader hardware and ship to each location	7 days	7/20/2022	7/29/2022
Obtain export of employee IDs from existing location entry badge system	3 days	7/20/2022	7/22/2022
Import existing employee badge IDs into managed print service	1 hour	7/25/2022	7/25/2022
Replace existing printers in employee Windows virtual desktops.	1 hour	7/25/2022	7/25/2022
Perform a test print on site	1 day	8/1/2022	8/1/2022
Perform a test print and travel to another location	2 days	8/1/2022	8/2/2022
Update posted signs near printers to remind employees of the new process	1 day	8/3/2022	8/3/2022
Email employee instructional information	1 day	8/3/2022	8/3/2022
Meeting – Project End	3 hours	8/4/2022	8/4/2022

Outcome

The XYZ Insurance managed print service project will completely change the way employees print. Employees will no longer have to worry about printer names, whether the printer has supplies, or if someone will misplace their documents before they can get to the printer. Administrators will have a central website they can utilize to better understand how their printers are being used and set limits to reduce potential waste. Local IT staff and operations teams will receive alerts when it's time to refill the printers with toner or paper. When the project concludes, the project team will continue to monitor the system and seek feedback from employees to determine if any concerns need to be addressed. The project will be considered successful if an employee can submit their print job in one location and release it using their badge at a different location.

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