CSE 499A (Section 5)

Project Impact and Constraints (CO4)

Project Title: NSU RFID Based Smart Printzone

Submitted To

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Abstract:

In our university, we have been using RFID (Radio- Frequency Identification) cards for quite some time now. In this project, our concept is to increase the functionality of our RFID cards by implementing a Smart Printing System, in which our RFID cards can be used as a printing card.

In this report we will cover the sustainability and constraints which includes economic, environmental and social aspects that need to be evaluated and taken in to account in research segment and development process of our project

Economic (Cost) impact:

- In our 499A we will develop a prototype of RFID based smart print zone. If we become successful, then we will deploy it.
- There are both software and hardware part in our project. The software making cost is virtually zero. But we have some hardware costs included. Such as we need printer, RFID card, RFID Reader, RFID reader controller, Server for web app and main RFID engine, a server pc which will handle the whole system.
  Following is a cost of mass production:

Product	Price
Rfid Engine Pc	150,000 TK
Server Cost	Depends on Requirement
Rfid Reader(Paxton RFID Reader per unit)	13000 Tk
RFID Card	Already Available
Web App Server	Depends on requirement
Printer	50,000 (Per Unit)
RFID Reader Controller	Depends on Requirement

- There are no tax incentives
- Cost Saving : No need of RFID Printer which costs 3 times more than the existing printer. Huge amount of money. N number of printers can be added to our system with just a simple rfid reader which will be installed after market. Web app is also a great solution to reduce the use of Print zone PC's.
- Availability of Resources: We have already talked with the RFID reader (Paxton Company) dealer and they ensured the availability. And traditional printer is also available in our country. Server is not a big issue also in the age of 2021.

Environmental Impact of the product:

- Our System will reduce environmental pollution as we are going to reuse the existing printer and they are not going to be wasted and not going to cause any environmental pollution.
- Our system will reduce page wastage which will bring a change in consumption and also reduce the misuse of natural resources which are used to make pages.
- Our system doesn't rely on scarce or abundant resources.
- Our system doesn't violate any environmental regulation.

Social Impact of the product:

- The developed product will bring a magnificent impact on our student's day to day life. They will not to wait for long time in front of printer to get their documents to be printed. After the implementation of our products number of printers will also be increased. Admin can easily monitor students. Students will never miss any single document after printing job is done because at a time a single user's document will be printed. So no chance of overlapping.
- It address the need of Admin of NSU it and Students of NSU.
- This product is going to change the consumption pattern as file missing hassle will be gone and students will not require them to print missing file again and again.
- This product is going to make some task automatic which are being done manually now. Such as blocking student's for valid reasons. Giving print from NSU print zone pc is not mandatory in this system. User's can use their own laptop or even mobile phone to give the print command.
- This product will create new job fields.
- There is a little amount of safety concern and no health concerns
- There is no social and environmental constraints.

Legal considerations and constraints:

- Regularity issues: Web app cyber security
- Existing technology limitations: No such limitations
- Existing standards that impact the system design requirements: As the print zone pc is connected with Ethernet lan port so we have to maintain IEEE Fast Ethernet/ 100Base-T 802.3u standard
- Standardized network technologies: IPV4 and IPV6 for web app according to the requirements.
- Standardized security mechanism: As we are planning to deploy our web app in AWS so there is some security protocols such as TCP and SSH protocols.
- Standardized software development: We are using Laravel PHP framework and C# for client app + rfid engine
- Standardized software engineering practices: We are following softaware development guidelines and rules.
- Hardware standards: We are going to use the hardwares which are currently being used by North South Uuniversity. Such as they are using Paxton RFID reader and controller and we will also use that hardware and we are modifying their Printer and turn them into smart one.
- Open source standards, software, and operating systems: We will use linux open source operating system for our web app server and windows for RFID engine. We are going to use Apache Server which will be installed in both windows and linux.

Thank You