Final Report: An Investigation into Business Process Engineering Opportunities

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Executive Summary:

The purpose of this research project is to generate insights about a selected business and develop technical solutions to business process inefficiencies. Already before conducting any research, the principal investigator has identified the business' inventory management processes as an area for improvements, thus the research study will revolve around improving this specific process. Improvements will be made to user experience and to further meet the needs of management where applicable. Interviews will be conducted with employees to understand user experience and collect grievances about the process. Data collected in the interviews will be organized and synthesized into a research findings report. This research findings report will then be utilized by researchers and developers to produce revisions for the current system. Such improvements will need to be transformed into prototypes. The prototypes will undergo pilot testing with users. The user experience, aesthetics, usability, and more will be compared between the current system and proposed solution systems. Proposed solutions are intended to improve general business efficiency, but also to improve employee user experience and job satisfaction. Once all these steps are completed, researchers will present these changes to company management for approval. Following approval, developers would be charged with coordinating with employees and management to implement the new system. Technical changes will be made, but also training, support, and documentation will need to be provided to employees. This project's success depends on considerate planning, thorough research, appropriate technical revisions, and suitable presentation to the business stakeholders.

Introduction:

The purpose of this paper is to deliver a final research project proposal. Submitted alongside this report is a project powerpoint presentation recording. This final research project proposal is a requirment of completing the course INFM400 Research Methods and Project Planning Management for Information Technology and Informatics. This research project, once approved, will become my capstone project and is set to begin in the following 8 week semester course INFM480 (approximately 10/21/2024 to 12/17/2024). As described above, research is to be conducted surrounding a selected business (which I also happen to work at) and about the inventory management process specifically. Interviews will be performed between researchers and employees/stakeholders. These interviews seek to better understand user sentiment towards the process as is. Researchers will attempt to identify and formalize issues with the current system. Then researchers will propose solutions to the problems identified. A business process engineering proposal is the final deliverable of this research project and would be presented to the business at the end of the project.

Contents:

Research question:

What are the key inefficiencies within the current inventory management process at my place of work, and how can research design be employed to generate system improvements to enhance user experience, usability, and business deliverables?

Proposed Research Methodologies:

Script Setup:

The purpose of this interview is to understand employee sentiment or experience surrounding the company's small equipment inventory process. This interview will attempt to identify issues with the current system keeping in mind employee roles, needs, and seniority. This is only the initial interview. Researchers may initiate follow-up interviews with participants if necessary. Employees are busy people, so establishing interviews in comfortable environments at suitable times is very important to receiving high volunteer rates. Microsoft Teams is already in use at the company so it will be the standard choice for the interviews.

Introduction:

- Introduce yourself to the participant

- Thank the participant for engaging in the interview

- Inform the participant of the purpose of the study

- Remind the participant of their right to withdraw from the study at any time

- Remind the participant that after data collection has begun, any already collected data is preserved for the study regardless of their choice to withdraw

- Inform the participant that the interview should take approximately 45 minutes to an hour, but depending on the engagement and discussions, it could take even more time. Researcheres should not allow the interview to go on too long unless there is notable engagement from the participant and there are no signs of fatigue because of the long interview time.

Background:

- Can you tell me about your job role at the company?

- How long have you been at this company? How long have you been in this job role?

- Can you tell me about your current connection to the inventory process?

Main Questions:

- What tools do you use to track equipment?

- What is your current experience with the inventory process?

- How often do you perform the inventory process?

- Have you experienced any challenges or frustrations with the current inventory process?

- How often do you encounter misplaced, broken, or missing equipment?

- In your opinion, what are some inefficiencies within the inventory management process?

- How well do you feel the current inventory system facilitates communication between team members? If it does not, why do you think this is the case?

- Do you feel there is enough coordination between field members and management regarding the equipment inventory? Are there any issues with coordination? What could improve this?

- What improvements or changes would you like to see for the current inventory process?

- Are there any specific technologies or existing inventory management solutions you would like to see replicated?

- How do you think a better inventory management system would improve your work or the company operations in general?

Closing:

- Is there anything else you would like to share about your experience with the small equipment inventory process?

- Before we end the interview, is there anything else you would like to share or discuss in general?

- Announce the end of the interview session. Thank the participant for doing the interview with you. Wish them a good day.

Proposed data collection instrument:

As briefly mentioned in the previous section, Microsoft Teams will be used to perform interviews and meet with user participants. This research study will not utilize audio or video recordings for the interviews. Thus it is pertinent for researchers to use some form of notetaking. Since the business already is in a Microsoft Teams environment, the obviously optimal choices are to use Microsoft Word or OneNote. In addition to these tools, if appropriate, researchers may elect to use the built-in transcription feature in the meeting with consent from the participant.

Project Planning Report:

The project planning deliverable is the below timeline. This timeline was constructed through understanding of industry standard development lifecycles such as the software development life cycle (SDLC), agile and others. The plan follows the general 6 step cycle of planning, research/analysis, design, implementation, testing, and maintenance. Planning has already taken place so this timeline begins with research/analysis through the interview process. Additional planning considerations include reporting to stakeholders. Where appropriate updates will be given to business management and other stakeholders described in the stakeholder map.

The below timeline is meant to be used as a general guide; the exact tasks and timeline will be subject to change and in accordance with the class timeline.

Week 1:

- Identify, recruit, and schedule interviews with appropriate employee participants
- Prepare and deliver necessary interview materials including consent forms and meeting details

Week 2:

- Conduct interviews: Conduct interviews one at a time with a day gap between each interview. This day gap is to ensure the researcher can not only conduct the interview, but also process/organize the data and reach out for clarification if necessary.

Week 3:

- Continue conducting interviews and follow-ups if necessary

Week 4:

- Synthesize data to identify common themes, issues, and insights
- Produce a research findings report

Week 5:

- Using the research findings, begin to brainstorm process improvements

- Begin developing a technical solution

Week 6:

- Begin prototyping

- Finalize prototype

- Design pilot testing study

Week 7:

- Perform pilot testing

- Collect user feedback

- Synthesize user feedback

Week 8:

- Draft, revise, and finalize process engineering proposal

References:

Yeates, J. (2024) *INFM400 Week 6 Project Timeline*. [Unpublished manuscript] Mercer University.

Yeates, J. (2024) *INFM400 Week 4 Defining Project Details*. [Unpublished manuscript] Mercer University.

Yeates, J. (2024) *INFM400 Week 5 Methodology and Data Collection Instruments*. [Unpublished manuscript] Mercer University.