Plan Overview

A Data Management Plan created using DMPonline

Title: TPM- MSc- Optimizing Reverse Supply Chain Operations through ERP Integration: A Focus on Managing Urgent Defects with SAP

Creator: Nikhil Shitole

Affiliation: Delft University of Technology

Template: TU Delft Data Management Plan template (2021)

Project abstract:

The study explores the integration of Information Systems (IS) like Enterprise Resource Planning (ERP) systems, particularly SAP, as a standardized platform for managing Reverse Supply Chain (RSC) operations with an emphasis on urgent defects flow. In the context of high-tech industries, efficient, responsive, and transparent management of urgent repairs, reconditioning, and remanufacturing is critical for maintaining operational continuity and ensuring customer satisfaction. The primary aim is to understand how leveraging an IS like SAP can improve communication flow and information sharing among internal stakeholders, thus addressing urgent defects more effectively and having a positive impact on the KPIs.

This research is underpinned by a qualitative analysis focusing on the experiences, and challenges faced by stakeholders involved in RSC operations for the management of urgent defective products that need immediate repair work so that they can be reused in manufacturing. Through semi-structured interviews and document analysis, the study aims to identify key inefficiencies in current RSC processes, explore criteria for prioritizing urgent defects within SAP, and assess the impact of transitioning to SAP on the Key Performance Indicators (KPIs) of RSC operations. Additionally, it investigates the influence of adopting SAP to improve transparency, visibility, and efficiency of the RSC processes and explores necessary change management strategies for successful SAP optimization and implementation.

The literature reveals gaps in understanding how IS like ERP systems support Reverse Logistics (RL) and the specific functionalities of ERP that can be tailored for RSC operations with the RL. Despite recognizing the benefits of standardization in RL for visibility and operational efficiency, there is a lack of detailed analysis on ERP-based information systems' development and adoption to enhance RSC efficiency. This research aims to bridge these gaps by providing insights into optimizing SAP ERP for urgent defects management in RSC, contributing to the strategic management of reverse logistics in high-tech industries.

Through this study, we seek to contribute towards the strategic integration of IS in RL, highlighting the role of ERP in RSC operations' by positively impacting the KPIs while improving efficiency, transparency, and scalability. By focusing on SAP as a standard platform for managing urgent defects, this research underscores the importance of standardized processes and information integration in achieving a sustainable and efficient RL framework, aligning with circular economy objectives.

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0. Administrative questions

1. Name of data management support staff consulted during the preparation of this plan.

My thesis supervisor Professor M.Y. (Yousef) Maknoon

2. Date of consultation with support staff.

2024-03-15

I. Data description and collection or re-use of existing data

3. Provide a general description of the type of data you will be working with, including any re-used data:

Type of data	File format(s)	How will data be collected (for re-used data: source and terms of use)?	Purpose of processing	Storage location	Who will have access to the data
Interviews recordings	.mp3 (for audio) .mp4/ .avi (for video)	Recorded during the interview (with informed consent)	Capturing expert's opinions about the SAP system. This would be used for generating transcripts to do data analysis	TU Delft Onedrive, TU Delft MS Teams	Nikhil Shitole, M.Y. (Yousef) Maknoon, J. (Jafar) Rezaei, Dr. A.C. (Sander) Smit
Interview transcripts	.txt/.pdf/.doc	Automatically generated transcripts by audio-to-text convertors	Capturing expert's opinions about the SAP system.	TU Delft Onedrive, TU Delft MS Teams	Nikhil Shitole, M.Y. (Yousef) Maknoon, J. (Jafar) Rezaei, Dr. A.C. (Sander) Smit
Interview Summary	.txt/.pdf/.doc	Produced from transcripts	To provide a privacy-preserving version of the data for long-term archival	TU Delft Onedrive, TU Delft MS Teams	Nikhil Shitole, M.Y. (Yousef) Maknoon, J. (Jafar) Rezaei, Dr. A.C. (Sander) Smit
Survey	.xlsx (Excel spreadsheet), .txt/.pdf/.doc	Based on the questionnaire that will be shared with the participants	Capturing expert opinions	TU Delft Onedrive, TU Delft MSTeams	Nikhil Shitole, M.Y. (Yousef) Maknoon, J. (Jafar) Rezaei, Dr. A.C. (Sander) Smit
Participant's list	.xlsx (Excel spreadsheet)	Professional network.	Capturing expert's opinions	TU Delft Onedrive, TU Delft MS Teams	Nikhil Shitole, M.Y. (Yousef) Maknoon, J. (Jafar) Rezaei, Dr. A.C. (Sander) Smit
Report	.pdf	Serves as a record of the process as well as documentation	Long term documentation	TU Delft Onedrive, TU Delft MS Teams	Nikhil Shitole, M.Y. (Yousef) Maknoon, J. (Jafar) Rezaei, Dr. A.C. (Sander) Smit

4. How much data storage will you require during the project lifetime?

- 250 GB - 5 TB

II. Documentation and data quality

5. What documentation will accompany data?

- Data will be deposited in a data repository at the end of the project (see section V) and data discoverability and re-usability will be ensured by adhering to the repository's metadata standards
- README file or other documentation explaining how data is organised
- Methodology of data collection

III. Storage and backup during research process

6. Where will the data (and code, if applicable) be stored and backed-up during the project lifetime?

- OneDrive

The data will be organized as follows:
The OneDrive repository will contain a folder for Interviews, in which each sub-folder will contain all documents about a single interview - the proof of consent, recording, and transcripts.

IV. Legal and ethical requirements, codes of conduct

7. Does your research involve human subjects or 3rd party datasets collected from human participants?

- Yes

8A. Will you work with personal data? (information about an identified or identifiable natural person)

If you are not sure which option to select, first ask your Faculty Data Steward for advice. You can also check with the privacy website . If you would like to contact the privacy team: privacy-tud@tudelft.nl, please bring your DMP.

- Yes

Before the interview, the following demographics of the participants will be collected:
- Name
- Email Address
- Company
- Role in the company
- Number of years of experience in the industry

8B. Will you work with any other types of confidential or classified data or code as listed below? (tick all that apply)

If you are not sure which option to select, ask your Faculty Data Steward for advice.

- No, I will not work with any confidential or classified data/code

I will only be working on understanding the current inefficiencies in the process flow of Reverse Logistics and what improvements can be made to improve the process flow. This is based on the interviewees that will be conducted.

9. How will ownership of the data and intellectual property rights to the data be managed?

For projects involving commercially-sensitive research or research involving third parties, seek advice of your Faculty Contract Manager when answering this question. If this is not the case, you can use the example below.

The datasets underlying the published papers will be publicly released following the TU Delft Research Data Framework Policy. During the active phase of research, the project leader from TU Delft will oversee the access rights to data (and other outputs), as well as any requests for access from external parties. They will be released publicly no later than at the time of publication of corresponding research papers.

10. Which personal data will you process? Tick all that apply

- Other types of personal data - please explain below
- Data collected in Informed Consent form (names and email addresses)
- Signed consent forms
- Photographs, video materials, performance appraisals or student results
- Email addresses and/or other addresses for digital communication
- Names and addresses

Other demographics:
- Company in which they work
- Role in the company
- Number of years of experience in the field

11. Please list the categories of data subjects

Experts and users of SAP system for the Reverse Logistics Operations

12. Will you be sharing personal data with individuals/organisations outside of the EEA (European Economic Area)?

- No

15. What is the legal ground for personal data processing?

- Informed consent

16. Please describe the informed consent procedure you will follow:

All study participants to be interviewed will be asked for their written consent for taking part in the study and for data processing before the start of the interview.

17. Where will you store the signed consent forms?

- Same storage solutions as explained in question 6

For each interview there will be a folder which will contain following information:
- consent form

- interview recording
- interview notes (if any)
- transcripts
- anonymized transcripts

18. Does the processing of the personal data result in a high risk to the data subjects?

If the processing of the personal data results in a high risk to the data subjects, it is required to perform a Data Protection Impact Assessment (DPIA). In order to determine if there is a high risk for the data subjects, please check if any of the options below that are applicable to the processing of the personal data during your research (check all that apply).
If two or more of the options listed below apply, you will have to complete the DPIA. Please get in touch with the privacy team: privacy-tud@tudelft.nl to receive support with DPIA.
If only one of the options listed below applies, your project might need a DPIA. Please get in touch with the privacy team: privacy-tud@tudelft.nl to get advice as to whether DPIA is necessary.
If you have any additional comments, please add them in the box below.

- None of the above applies

19. Did the privacy team advise you to perform a DPIA?

- No

22. What will happen with personal research data after the end of the research project?

- Personal research data will be destroyed after the end of the research project
- Anonymised or aggregated data will be shared with others

23. How long will (pseudonymised) personal data be stored for?

- Other - please state the duration and explain the rationale below

The pseudonymized data will not be archived.

24. What is the purpose of sharing personal data?

- Other - please explain below

The personal data will not be shared and the transcripts will be anonymized.

25. Will your study participants be asked for their consent for data sharing?

- Yes, in consent form - please explain below what you will do with data from participants who did not consent to data sharing

The consent form will say:
- The data collected during this interview will be anonymized and publicly shared. All personal data collected during the interview will be deleted at the latest 1 month after the end of the project (estimated to be 30th September 2024).

V. Data sharing and long-term preservation

27. Apart from personal data mentioned in question 22, will any other data be publicly shared?

- I do not work with any data other than personal data

29. How will you share research data (and code), including the one mentioned in question 22?

- I will upload the data to another data repository (please provide details below)

I will upload the data (thesis report) after the completion and approval from my thesis supervisor and committee into the TU Delft student thesis repository.

31. When will the data (or code) be shared?

- At the end of the research project

VI. Data management responsibilities and resources

33. Is TU Delft the lead institution for this project?

- Yes, leading the collaboration - please provide details of the type of collaboration and the involved parties below

TU Delft will be the leading collaborator and the anonymized data from interviews will be shared with the internship company ASML Netherlands BV through the internship report.

34. If you leave TU Delft (or are unavailable), who is going to be responsible for the data resulting from this project?

My thesis supervisor: M.Y. (Yousef) Maknoon (M.Y.Maknoon@tudelft.nl)

35. What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

No additional resources will be required. The student thesis repository of TUDelft has quite a large number of space available for each researcher to store the data free of charge. We do not expect to exceed this and therefore there are no additional costs for long-term preservation.