PRINTING INCORPORATED BOOK PUBLISHING MANAGEMENT PROPOSED SYSTEM

INF60010 REQUIREMENT ANALYSIS AND MODELLING

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EXECUTIVE SUMMARY

This report illuminates various issues encountered by the Printing Incorporated Book Publishing (PIBP) and in order to keep up with latest technologies and methodologies as always by making few changes to their process of handling and database management to their internal system. A completely new automated system has been proposed along with the rationalization as to how the proposed system will improve PIBP in terms of operation. This report also provides the core objectives of the proposed system by outlining the functional and non-functional requirements.

To increase the productivity and strengthening the way of work, the data collection techniques are illustrated. The report also points out the user stories and their acceptance criteria. By providing this, it will be clear what are the expectations by the users of the system which will be helpful in modeling the proposed system based on the OO approach. Furthermore, this report focuses on the various stakeholders and their significance on the PIBP system. For the proposed system, the OO approach is used which includes the Use case diagram, Activity Diagram, Sequence Diagram are created.

The Recommendation and Analysis for PIBP system are provided in this document and highlighted innumerable feasible solutions that meet the sustainability and effectiveness in the current technology-based market.

Contents

INTRODUCTION:

At present Technology has become an inseparable part of the business. No matter what size your business is; in order to grow it you need to infuse technological advancement in your business to survive in the competitive market space. Most of the businesses in today's world would collapse without the use of technology. Businesses require communication, transportation, and many more fields. Technology makes it easier for business to get through all of these components of the business. Technology helps business in reaching a global market. The common example is the internet, it is now the widely used platform for marketing and thus has made easier for businesses to reach a wider audience.

With the growing use of the internet, automation of key business practices has also become a norm for most businesses. Business Process Automation (BPA) is a domain within Business Process Management (BPM) that emphases on how to use automation in regular business practices. BPA reduces manual tasks in a business-like transferring data, sending notifications and extracting information from databases (Kissflow c. 2017). BPA identifies the business processes that can be handled better by systems and machines. Automation of business processes provides some key benefits as mentioned below:

- **Better visibility**: Items can be found and see where they are stuck.
- **Efficiency**: Automation can make things go faster. i.e. automated reminders.
- **Elimination of Errors**: eliminates manual errors made by humans.
- **Effective business insights**: BPA tools can help in reporting and analytics for better business insights.
- **Cost Reduction**: It saves a lot of money by eliminating errors and improving speed.

The objective of this report is to design and analyze the automated system for Printing Incorporated with help of business models and best solution technique. The report discusses key problems identified in the current problem and their solution by comparing various solution

techniques and using business process modeling techniques such as use case diagram, Entity diagram, Sequence diagram, and activity diagram. The goal of this report is to propose a system that will resolve all existing problems in Printing Incorporated.

PROPOSED SYSTEM:

The proposed system will automate key business processes for Printing Incorporated and overcome the current system issues. The new system will automate the process of **tracking of e-books** in production, which is one of the key issues the current system is facing. Management will change the status of the e-book in the system and it will be reflected throughout the system. Author of the e-book will also be notified via an auto-generated email when the e-book status is changed.

The other issue that will be resolved by the new system is the **calculation of sales and royalty**. The new system will automatically calculate the sales and royalty that needs to be paid to the author when an e-book is sold. The proposed system will maintain a central database for all the e-books and the authors.

The proposed system will also have a functionality of **report generation**. The reports will be generated and sent to managers at the pre-defined period of time. However, if the management wants to generate reports for some specific period of time, they can generate them using the system.

Moreover, the system will **automate the payment system** for all, the authors and employees. The system will initiate the payment for all the authors and employees, which after management's approval will be credited to their accounts. The system will also have an automated email system to send various notifications related to payments and e-books.

OBJECTIVE:

The objectives for implementing the new automated system for Printing Incorporated are as follows:

- Maintaining integrity and smoothening the current business process.
- Bringing transparency to the key processes.

- Reducing the time taken for processes and in-turn generating higher revenue.
- Eliminating errors and improving the scalability of the system.

CONSTRAINTS:

The new system will have automation for all of its key business processes. Accordingly, the system will have the following constraints:

1. Dependency Constraint:

If a large number of people are using the system for a long period of time, it may result in an increase in server traffic and may lead to unpredictable failure of the system.

2. Availability Constraint:

The new system will be available for all users (Customers, Authors, Management) 24x7, 365 days. Therefore, the system will go through scheduled maintenance at specific time intervals. During this interval, the system will not be available to its users.

3. Performance Constraint:

Due to continuous usage, the system may lag sometimes and the functionality might get affected. To handle large data of customers the system will require such setting of cloud servers and larger spaces.

4. Unpredictable Expenses:

After the new system gets implemented, the system may cause some expenses related to hardware or software, which are unpredictable. It is not possible to predict a system glitch or any hardware issues.

5. Data Migration:

After the implementation of the new system, the data of the current will need to be migrated to the new system. This process will require enhanced security as it contains propriety data of customers and authors.

6. Manual Dexterity:

Although most of the business processes will be automated in the new system, some of the processes will still require manual interaction. Also, the automated processes may require some manual support at back-end in case any issue arises.

BUSINESS ISSUES:

Tracking of e-books in the production process

Currently, there is no computerized system available for tracking the e-books that are in production. A file-folder is created for each book-in-process. The file-folder moves through different plastic bins after each stage of production. The file contains notes from each production worker and the status of the e-book. Whenever the author requests for the status of the e-book, a production worker has to go through all the plastic bins to find the e-book. The manual process of tracking e-books is unnecessarily lengthy. The proposed system will automate the tracking process of e-books in productions, where after each stage of production, the worker will have to just assign a status to the e-book and it will be reflected throughout the website. Therefore, the author will be able to check the status of e-books without calling the company.

Calculation of Sales and Royalty

In the current system, the sales and royalty for e-books are calculated manually by the accounting department. Sales numbers are downloaded from e-commerce server and dumped into a spreadsheet. Sales numbers from third-party websites are also downloaded and appended to the Spreadsheet. The Accounting Department then calculates the royalty manually from excel sheets and writes checks to authors. The proposed system will automate the sales & royalty calculation process. Royalty of each e-book will be calculated at the time of sale and will be added to the total. The new system will automatically generate sales data from a third-party website as well and provide a sales analysis report at the end of every month, which will be crucial for analytics purposes and deciding company strategies.

No Centralized Database

There is no centralized database for maintaining author data or staff details. Currently, each sales-person keeps a separate database for author leads in MS Access. There is no way to make

sure that two salespersons are not contacting the same author. The proposed system will have a central database that will have details of all the authors, customers and staff in encrypted tables. It will also help in getting user details as and when required by the management.

Ambiguous Payment Process

The proposed system will have a secure payment system for all customers, authors, and employees. The system will automatically initiate the payment at the specific period of time and send it for management's approval. After approval received from authority, the system will credit the payment in the respective accounts via bank channels. It will provide the utmost security and privacy to all the stakeholders. It will be less prone to error due to lack of human factor involved.

SCOPE OF THE PROJECT:

An intuitive UI configuration, secure data repository and environment, and a significantly automated framework will guarantee that the new Printing Incorporated System is totally cutting edge. This will altogether enhance the effectiveness and the productivity of the System and will result in far lesser glitches. The data stored in the system will be safe and centralized and will be maintained more easily than the current system.

Proposed System Functional Requirement:

System requirements for the current system are attached in table format in **Appendix-1**. In this section requirements of the proposed system in addition to current requirements are defined in the table below.

Type of Requirement	**Requirement ID**	**Requirement Statement**	**Comments**
FR	FR18	The system shall maintain a centralised database	The system will have a centralized database that will

		for all its users (Authors, Customers, Employees, e-books)	maintain the details for all its users so that the information can be easily accessed without lengthy stretch.
FR	FR19	The system shall automatically calculate sales & royalty for e-books.	The system will gather the sales data from various channels automatically and consolidate it and calculate sales and royalty from that data.
FR	FR20	The system shall change the status of books-in-progress throughout the website after management approval.	The system will track each e-book in the production process and display the correct status at the website and change the status throughout the database.
FR	FR21	The system shall complete the monetary transactions through	The system will automatically manage the sales transactions performed online

		payment gateway without any errors.	through a secure payment gateway.
	FR22	The system shall send automated notifications when pre-defined conditions are met.	The system will send various kind of auto-generated emails to its users when certain conditions are met. i.e. e-book status changes notifications, payment due to notifications, sales transaction notification etc.
FR	FR23	The system shall automatically generate sales analysis report, e-book selling list, member transaction history report, e-book catalog at a specified period of time for each report.	The system will automatically generate various kind of reports required by the organisation when the certain point of time is reached.
FR	FR24	The system shall generate a sales analysis report, e-book selling list, member transaction	The system will generate the reports on request. Suppose management wants to see the sales

		history report, e-book catalog on request for a specific period of time.	analysis of 15 days, they can enter the dates in the system and system will generate the report according to the criteria provided.
FR	FR25	The system shall initiate the payment for specified users (authors and staff) at the end of each month.	The system will automatically calculate the payment that shall be credited based on royalty calculation for authors, based on a number of working days for staff members and initiate the payment. The system will not credit the payment to the accounts without management approval.
FR	FR26	The system shall automatically validate the file uploaded by the author.	The system will automatically check the file uploaded by the author for corruption issues. It will check if the file is

			corrupted or readable or not and provide a suitable response to the author.
Performance, Usability, Security, Reliability, Availability requirements for the current system are defined in Appendix-1. Below table adds more NFR to the list.			
NFR	NFR08	The system shall show the correct status of e-books in the production process with suitable labels.	The system will show the correct status of the e-books in production as soon as it gets updated by production workers without any delays.
NFR	NFR09	The system shall send the notifications to the respective users as soon as the conditions are met.	It shall not incur any delivery related issues and corruption of message problems.
NFR	NFR10	The system shall notify the backend team when it's facing any issues like traffic overload, metered connection, server failures.	The system will warn the team in case of an emergency, so that backend team can take corrective issues.

NFR	NFR11	The system shall take the back of data and transactions in case of failure.	The system shall maintain the database of users and transactions in case of failure as a pre-emptive action.
NFR	NFR12	The system shall complete the payment transaction in 10 seconds and cancel the transaction in case it takes more than 10 seconds.	The system will follow the standard procedure of maintaining the state while performing monetary transactions.

DATA COLLECTION TECHNIQUES

The collection of both functional and non-functional requirements stage plays a fundamental role in the development process. There are various methods and ways these requirements that can be collected. Analysts take advantage of interactional strategies with various stakeholders such as internal workers, staffs, and users to collect and prioritize requirements. During this business processes and operational information are collected. Following are the different types of data collection techniques that will be used in this process.

Conducting Walkthroughs and Sprint Reviews

To gather the information from various stakeholders regarding the current system in the organization through the walkthroughs and sprint reviews. This technique engages with the usage of a huge spreadsheet where every worker can give their reviews regarding the current system. The given information will be very useful as they provide opinions of larger audiences but this is with very less interaction.

Conduct Interviews and Discussions with Users

The interviews and discussions are conducted in the user's environment for the comfortability as their comfortability is given the first priority. There will list of questionnaires for the one-on-one interviews and these are used to ask the users by the interviewer. Users can be anyone like the Customer or Author or internal staffs. It is one of the effective ways to understand business functions and rules. This is a very interactive based technique where it provides answers to various imperative questions such as,

- What do the users expect from the system?
- What are the changes the users want the organization to implement?
- What is the position of the current working culture of the organization?
- How the management of data needs to be?
- What anomalies does the organization need to overcome?

Brown Paper Sessions

During this brown paper sessions, these papers will be distributed to the larger audiences which include the author, customers, and the internal staffs. This paper is feedback form and this technique totally maintains the confidentiality of the responses given by the users and then the requirements are collected and prioritized correspondingly.

Observe and Document Business Processes

Observation varies from the office walkthroughs to performing various tasks studies. The observer such as the internal staff of PIBP able to share their views and opinions during the facilitated group sessions. It is not necessary to observe and document all the processes at the same level of detail. This technique may make users nervous, so it has to handle properly but it is very interactive. This can be used to document the UML activity diagrams or other suitable process models.

STAKEHOLDER ANALYSIS

Stakeholder	Category	Type	Interests/Influences/Tasks
Customers	Primary	External	• Accountable for most of the revenue generation for the company. • Interested in buying books. • Interested in interacting with author and attending company events.
Authors	Primary	External	• Accountable for writing manuscripts. • Accountable for revenue generation as well. • Interested in getting the best rate of commission on e-book. • Interested in easing procedure of e-book production.
Employees	Primary	Internal	• Interested in processing e-book smoothly through each production stage.
Company Management	Secondary	Internal	• Interested in hassle free process of e-book production. • Interested in getting automated reports. • Reviews and approves payments for staff and authors. • Interested in getting higher revenue and easing the business processes for competitive advantages.

Competitors	Tertiary	External	• Influence the business strategy of Printing Incorporated.
Third Party websites	Secondary	External	• Accountable for getting higher revenue by selling Printing Incorporated's books on their websites.
Cloud Services	Secondary	External	• Accountable for providing paid data storage and operational services.

RECOMMENDATION AND ANALYSIS

After having numerous discussions with all the stakeholders of PIBP and critically evaluated the difficulties they faced in the current process in the system, the new system has been proposed. From the implementation of the proposed system, PIBP would be able to work effectively and efficiently. By offering solutions like Custom-Built Software, Commercial off the shelf (COTS), Open Source Software (OSS) and Software as a Service (SAAS) along with their advantages and disadvantages, several prospects for PIBP would be created. Justifications are also provided as for why one of these solutions is the best fit for the organization. Furthermore, Feasibility analysis is prepared to exhibit the organizational and technical benefits.

TYPES OF SOLUTIONS

Given below are few of the best solutions we believe that could help in the development and advancement of PIBP.

Custom Built Software (CBS)

It is the software as a solution which created specifically or tailor-made for the organization. In this highly paced technology world, there are many software developing companies who are wanting to attract their clients to have a competitive edge by fulfilling their needs and functionality in the software. Current software market may not meet the requirements of the

modern management and business processes, as the companies tend to implement unique features to their information system (Morris, 2001).

Advantages:

- As the software is custom built, it will have only the required functionalities which are performed day to day activities by the PIBP.
- The custom-built software provides greater scalability. For an organization like PIBP can have modified software for each department where employees will have a good sense of using the software.
- It can have built-in integrations as it can be integrated with old software and automate processes or can have third-party integrations if needed.
- Using custom built software, we will be the sole user of the software, so receives less attention from the intruders and hackers. This reduces the security risks possessed by the software.
- It is an expensive option as it requires high upfront costs which justifies the implementation, in the long run, it will reap benefits as it is systematic fit for the organization. There will be no need for the extension of licenses.

Disadvantages:

- There are huge upfront costs which organization has to bear for the business improvement.
- If this project follows the waterfall model then every new functionality added to the system post-delivery will cost more.

Commercial off the shelf (COTS)

Commercial off the shelf (COTS) is the most widely used option amongst the companies because of its economic benefits. These days companies prefer packaged software and hardware which are readily available in the market. Customization, integration, and upgrades of those packages are must to be considered. MYOB, Xero, Salesforce, SAP and Oracle are some of the popular COTS (Boehm et al. 1999).

Advantages:

- There are numerous options available to choose from the market which would be useful to PIBP, which can be purchased without spending more resources.
- These companies provide dedicated clients support for the software they provide, therefore PIBP has one less process to worry about and spend the resource elsewhere (Alves & Castro, 2001).
- COTS software's are mostly web and server-based and readily available through distribution and PIBP don't have to spend on Hardware and software for feasibility which makes this option more economical.

Disadvantages:

- Customizing the software to fit the organization is nil here and it comes a lot of preloaded plethora of features which may not be useful to the organization.
- There is always an uncertainty of the software as the development can be halted by the company at any time. Moreover, there is no control over the upgrades and maintenance of the software (Erdogmus et al 1999).
- The reliability of the software is comparatively low to the custom built as COTS software's are subjected to more of attacks by the hackers.

Open Source Software (OSS)

Open source software is in which the source codes are provided for free and they are freely redistributable as the distribution of license applies to all of the derived or modified software. Organizations can make money through the selling of the additional products or services to the base system such as the Content Management System (CMS) such as the WordPress, Joomla, and Drupal. These are OSS providing a rapid development environment for building the web-based software, developers don't charge for the CMS instead they charge for the creation of a website.

Advantages:

- As it is free there is no need to spend for the proprietary software and hardware.

- The software continually evolves in real time as the developers and contributors constantly add and modify it.
- Using OSS means the organization is not locked into using specific vendors system as they can work with other systems.
- OSS can be modified and adapted to the business requirements of PIBP which is not possible in other options.

Disadvantages:

- There can be less support available if anything goes wrong as it relies heavily on the community of users or developers to provide the fix.
- Though it is mostly free, there can be still indirect costs involved which can be incurred.
- Some can take advantage of the vulnerabilities possessed by the OSS instead of fixing them.

Software as a Service (SAAS)

SAAS is software that is owned, delivered and managed remotely by the provider. As the provider delivers the software based on one set of common code and data definitions that are consumed in one to many models by all customers at any time on a pay for use basis or subscription-based metrics are used.

Advantages:

- It requires only lower upfront cost as it generally subscription based and license fees and there is no need of spending resources on hardware and software.
- Quick set up, deployment and easy upgrades are a competitive advantage over other options.
- The accessibility and scalability of SAAS offers many subscription options and flexibility to change as the business grows.

Disadvantages:

- The custom-built in-house software gives a high degree of control but SAAS provides no control whatsoever.

- The access management and the privacy of sensitive information is a major consideration as they are cloud and hosted services.
- Since it is web delivery-based service if the internet service fails there is no access to the software or data.

Even though there are many advantages for outsourcing development of software and several opportunities are provided compared to in-house development, the internal IT department should gain latest technical knowledge in order to cope up with the software development and understand the functionalities of the system to add or implement new functionalities while developing for PIBP.

Below is the comparison between the in-house and outsourced development of the software.

In-house Development	**Outsourced Development**
Advantages: Customizing the software to have a systematic fit to PIBP is one of the biggest advantages of in-house development. This could help PIBP to overhaul the current system. Increased up-front cost but results in a perfect implementation which justifies the cost. It will be easier to expand and upgrade the software based on business expansion.	**Advantages:** Outsourced development has flexibility, reliability, and scalability with high probability. Support is readily available if any issue occurs after the deployment. Deployment is faster than in-house.
Disadvantages: There might be a lack of resources and no proper training to them for software maintenance and upgrades.	**Disadvantages:** Maintaining subscription and licensing cost can be a burden. There will always be uncertainty in the software as it is externally developed.

Matrix Approach to find the best possible solution:

Criteria:

1	Very Poor
2	Poor
3	Average
4	Good
5	Very Good

Weighing the factors:

Factors	**Weightage**
Functional Requirements	
Manage Profile	**4**
Manage E-book Publishing	**5**
Manage Purchase	**4**
Manage Payment	**4**
Manage Notifications	**3**
Generate Reports	**3**
Manage Sales and Royalty	**5**
General	
Performance	**4**
Security	**5**
Data Backup	**5**
Economy	**3**
Reliability	**5**
Service	**3**

Weightage to determine the best solutions:

Functional Requirements	**Weightage**	**CBS**	**COTS**	**OSS**	**SAAS**
Manage Profile	**4**	**3 (12)**	**3 (12)**	**2 (8)**	**3 (12)**
Manage E-book Publishing	**5**	**5 (25)**	**4 (20)**	**3 (15)**	**4 (20)**
Manage Purchase	**4**	**3 (12)**	**4 (16)**	**2 (8)**	**3 (12)**
Manage Payment	**4**	**4 (16)**	**3 (12)**	**2 (8)**	**3 (12)**
Manage Notifications	**3**	**3 (9)**	**2 (6)**	**1 (3)**	**3 (9)**
Generate Reports	**3**	**3 (9)**	**3 (9)**	**2 (6)**	**2 (6)**
Manage Sales and Royalty	**5**	**5 (25)**	**4 (20)**	**3 (15)**	**4 (20)**
Total		**108**	**95**	**63**	**91**
General					
Performance	**4**	**3 (12)**	**4 (16)**	**2 (8)**	**3 (12)**
Security	**5**	**5 (25)**	**3 (15)**	**3 (15)**	**4 (20)**
Data Backup	**5**	**4 (20)**	**5 (25)**	**2 (10)**	**5 (25)**
Economy	**3**	**3 (9)**	**2 (6)**	**3 (9)**	**2 (6)**
Reliability	**5**	**4 (20)**	**4 (20)**	**3 (15)**	**4 (20)**
Service	**3**	**2 (6)**	**3 (9)**	**2 (6)**	**3 (9)**
Total		**92**	**91**	**63**	**92**
Overall Total		**200**	**186**	**126**	**183**

After calculation it is clearly visible that CBS is the beneficial solution to PIBP.

Implementation Justification

Custom-built Software (CBS) would be the most suitable solution for the proposed system. This is not only because it meets the functional and non-functional requirements of the proposed system but it also has the long-term benefits as the business grows. Since there are very fewer platforms that has same functionalities similar to PIBP as other eBook companies such as Amazon, Barnes & Noble and Kobo, they all have their own software system. CBS offers tight integration and functionalities to the system in PIBP as it can be customized for the needs to systematically fit the organization. CBS can help improve the business for a longer period by resolving the existing issues and providing an excellent platform to every stakeholder. It can also provide a competitive edge over the others which shows the scalability and sustainability for the development. Since the data involved here is enormous and to provide the necessary security and privacy CBS has the advantage here which delivers these requirements. CBS increases the productivity of all departments across the PIBP.

Steps to Implement Proposed Solution

Based on Software development life cycle, steps to implement the CBS solution is as follows:

Identifying requirements and design for CBS solution

After making the decision to choose the CBS solution, the system requirements are a document which shows what the software must accomplish. Collaborate on different ideas and features that will work together to satisfy the requirements. Discuss with users, document and review the design. Then decide on the scope of the project.

Planning, Architecture, and Development for CBS

Laying out the tasks and allocating the resources is done in the planning. Once planning is done the system needs a framework and for that technical architecture is defined with the integration of technologies. Then the development takes place as time is spent on coding and once the system is designed and the foundation is laid, the application is built.

Testing for CBS

End-to-end testing and user acceptance testing are done during this process. During development, features are tested in isolation but as unified software. Once whole software is developed end-to-end is tested and allows it to compare with original specifications. User acceptance test (UAT) is for to identifying the issues that testers may have left out. Since there are interaction with third party systems, integration testing should also be done.

Maintenance and Upgradation for CBS

After deploying the software throughout the organization, now comes the possibility of improvement and maintenance of them, since it is built in-house maintaining the software is easy for the technical team. As the business grows the software changes are upgraded easily as they are based solely on only this PIBP organization.

PROJECT FEASIBILITY:

Project feasibility is an evaluation of the potential impact that the proposed project will have like financial, technical and legal. Here, we will discuss about in accordance to the Printing Incorporated:

1. **Economic Feasibility**

   It is about making sure if it is logical to complete the project with its cost and revenue. Economic feasibility of Incorporated Printing can be analyzed by the cost-benefit analysis of the proposed project. This will ensure that the benefits are exceeding the cost of the investment.

2. **Technical feasibility:**

   Technical feasibility for Incorporated Printing will be high as the complete information system will be there on cloud, which will reduce the need of hardware components.

3. **Schedule feasibility:**

   The time taken for Printing Incorporated will not be long as they are clear with both the functional and non-functional requirements. They also have a quick decision-making capability which will further enhance the schedule feasibility.

4. **Organizational feasibility:**

   It is how well the project is fitting in with the requirements for the project. To ensure the organization feasibility, Printing Incorporated needs to clearly define their requirements so that according to them the most effective solution can be implemented.

METHODOLOGY:

Suitable Methodology:

We will recommend that Agile methodology should be followed for Printing Incorporated as it involves iterative development in short cycles with a high level of interaction with the users or business representatives, that is what the functionality demands.

During the various development stages of the Printing Incorporated System, the stakeholders will update the requirements. Since agile is very flexible and its response to change is good, the updates will be added to the next phase of the software development. The user's and stakeholder's feedback will be used as an input for the next phase of the development, therefore maintaining a constant business interaction.

The table below shows the comparison of various methodologies:

	Strengths	**Weaknesses**
Agile	• High flexibility • High customer satisfaction • Constant interaction • Continuous quality assurance	• Lack of long-term planning • Professional teams are required

	• Customer gains strong sense of ownership.	• Difficult workflow coordination among different small teams.
Waterfall	• Easy to understand and use. • Provides requirement stability • Planning and designing are straight forward. • Progress is easily measured	• All the requirements are to be known upfront. • Less customer interaction. • If a change is needed, project has to be started from scratch. • If initial requirement is faulty, entire project is ruined.

Reasons for selection of Agile methodology is stated below:

1. High flexibility
2. Faster process
3. Continuous improvements
4. High customer satisfaction
5. High chances of delivery of most suitable system for clients.
6. Constant interaction with the user and the stakeholders.

Various agile methodology tools that can be used for development are:

1. **Agile for Scrum**: It automatically updates the stakeholder with the prospect's progress.
2. **Active Collab**: It is good for small businesses and is easy to use. It provides excellent support with very little training.

3. **Pivotal Tracker**: It is generally used for mobile projects. It becomes user-friendly after a brief introduction period.
4. **Atlassian Jira + Agile**: It facilitates development by incorporating Kanban, Scrum and customizable workflows.

CHANGE MANAGEMENT:

A standard change management plan will be documented for the proposed project. Every time a change is requested the team will have to follow a standard template which will describe the proposed change. Key details in the document will be:

- Purpose & Justification: purpose and justification of the requested change.
- Stakeholder Involvement & effect: Description of which stakeholders are involved and how they will be impacted with the change.
- Roles & Responsibilities of Those in change request: It will clearly describe the roles and accountability of each team member who will work on the change.
- Procedure to execute the change: Description of standard process that will be followed in execution of change. It will describe the tools & technologies that will help in implementing change.
- Budget: Description of budget for change.
- Risks involved: List of all the risks involved in implementing the change.
- Change Management Schedule: Schedule of how the change will proceed.
- Contingency plan: Description of plans in case execution of change goes wrong.

The above document will be reviewed and approved by change management team. After their approval only, the change can be proceeded. All the stakeholders will be notified about the change. Any issues occurring during the change process will be dealt with the standard procedure documented in the template.

CONCLUSION

Analyzing the current system aided in identifying the gap in the system which could be improved for better functionality of the system. We identified that the current system has many manual work which could lesser accuracy and performance compared to the proposed system where most of the vital functions are automated and with the integrated Artificial Intelligence based manuscript validation helps to cut the period of validation tremendously and by using the Object Oriented approach like Use Diagram, Description, Sequence Diagram and Activity Diagram along with this some recommendations based on our analysis to run the system effectively are also proposed. Along with all these it is advised to automate all the processes without a human interaction to improve the overall business and this can be achieved by increasing the security measures, designing a user-friendly interface and with proper user feedback the system can achieve maximum profit in the long run.

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APPENDICES

USER STORIES AND ACCEPTANCE CRITERIA:

1. Member

As a member, I want to view my loyalty points in my profile, so that I can use it for my next purchase.

Acceptance Criteria:

1. Be able to click the profile.
2. Shall display accumulated loyalty points.
3. When purchasing an eBook there shall be an option to use these loyalty points.

2. Production Worker

As a Production worker, I want to view the status of the book in progress, so that I can report to the author without manually searching all the bins.

Acceptance Criteria:

1. Be able to view the status of current book in progress.
2. Be able to enter author details.
3. System shall be able to display the status of the book to the worker.

3. Author

As an author, I want to check the status of my book, so that I can keep a track of the production process.

Acceptance Criteria:

1. The upfront cost shall have been paid to view the book status.
2. Be able to login into the portal.
3. Be able to check real time status by clicking on 'View Status'.

4. Management

As management, I want automatically calculated sales and royalties, so that I can make payments to the authors on time.

Acceptance Criteria:

1. System shall be able to gather data from the server
2. System shall be able to calculate the sales and royalties from the data.
3. Can mark as ‘paid’ when the payments have been made.
4. Can send the payment report to the accountant via system.

5. Accountant

As an accountant, I want automatically generated sales analysis report, so that I can analyze the sales revenue.

Acceptance Criteria:

1. System shall be able to gather the sales revenue data.
2. System shall be able to generate sales revenue reports.
3. Shall be able to click on ‘View Sales Revenue Report’ according to the time period that they select.

6. Customer

As a customer, I want a catalogue of the eBook, so that I get all the information about the eBook like price, category and sale frequency.

Acceptance Criteria:

1. System shall gather all the details about the e-Book.
2. Shall display the price.
3. Shall display the category.
4. Shall display the sale frequency.

7. Author

As an author, I want the list of sold copies, so that I can keep a track of my selling.

Acceptance Criteria:

1. System shall have all the information regarding the book sales.
2. Shall display sales analytics.
3. Shall display sales details like to whom it is sold and the reviews.

8. E-commerce Company

As an e-commerce company, I want third party integration with the database system, so that I can update the sales and royalties' details in real time.

Acceptance Criteria:

1. System shall be able to integrate with third party websites.
2. E-commerce shall share their sales and revenue data directly to the system.
3. System should be able to read and generate reports based on the data shared with it.

EVENTS FOR PROPOSED SYSTEM:

UPDATED EVENT TABLE:

No.	Event Type	Event	Trigger	Source	Use Cases from System's POV.	Response	Destination
1.	External	User (Author, Customer) registers on website	-registration request -check for duplicates	User	Create new account	-registration status	User
2.		User logins to the website	-Login request	User	Validate Credentials	Login status notification	User
3.		Author pays initial fees to set-up account for publishing e-books.	-payment request	Author	Process payment	-payment status -payment receipt	Author
4.		Author uploads manuscript.	-manuscript	Author	Validate Document	Upload status notification	Author

			uploaded				
5.		Author opts for book promotion services by paying the required fees.	-payment request	Author	Process Payment	-payment status -payment receipt	Author
6.		Author requests for status of e-book in production	-e-book status request	Author	Get e-book status	-e-book status	Author
7.		Management verifies and approves the payment to author and staff	-payment approval request	Management	Approve payment	-payment status	-staff -author
8.		Management updates e-book status in production	-e-book status change	Management	Update e-book status	-changed e-book status	-Management
9.		Management approves e-	-e-book publishm	Management	Approve publishment	-e-book publishment status	-Management

		book to be published	ent request				
10.		Customer searches for an e-book	-e-book search request	Customer	Search Book	Search results	Customer
11.		Customer adds e-book to shopping cart	-cart status change request - e-book stock verification request - membership verification request -discount calculation request (if member)	Customer	Add e-book to Cart	-updated cart details -discounted price (if member)	Customer

12.		Customer buys book	-payment request -record customer details request (if a member)	Customer	Process Customer Payment	-Payment Invoice -updated payment details -customer purchase details	Customer; Management
13.		User (Author/Customer) updates account details	-update details request	User (Customer/Author)	Update User details	-Update confirmation -Updated details	User (Customer/Author)
14.		Customer buys membership by paying membership fees.	-payment request	Customer	Process Payment	-payment status -payment receipt -membership ID	Customer
15.		User (Author/Customer) contacts	-query received	User (Custo	Process Query	-response to the query	User (Custom

		service desk regarding some query.		mer/Author)		-updated status of the query	er/Author)
16.		Member customer sends a message to Author on website's chat forum	-message request received	Customer	Manage Interaction	-message sent notification	Customer
17.		Management requests reports over a specific period of time	-report generation request	Management	Generate Reports	-generated reports	Management
18.		Management sends email invitation to member customers for company events	-company event created	Management	Send Invitations	-email sent notification	Management
19.	Temporal	System credits salary into employee's bank account	-end of the month reached	System (Auto-generated)	Credit Salary	-salary slips -salary credit notification	Employee

		after management approval	- manage ment approval				
20.		The system calculates sales & royalty at the end of each month.	-end of the month reached	System (Auto-generated)	Calculate Sales & Royalty	-sales & royalty report	Author
21.		The system initiates payment to the author after management approval	-end of the month reached - payment initiation request - manage ment approval	System (Auto-generated)	Manage author payments	- payment status notification	Author
22.		System generates reports for specific	-report generati on request	System (Auto-generated)	Generate Reports	-Generated reports	Manage ment;

		period of time.					
23.	State	System sends reminder emails to members whose payment is due	-Payment due date reached	System (auto generated)	Send reminder email	-reminder email	Customer
24.		System updates no. of copies available for buying.	-e-book bought by the customer	System (auto-generated)	Update e-book stock	-updated stock details	Management;
25.		System verifies the uploaded file.	-manuscript uploaded	System (auto-generated)	Verify the file	-verification notification	Author
26.		The system sends a notification to the author when e-book status gets changed	-e-book status changed	System (auto-generated)	Send e-book status notification	-e-book status notification	Author

27.		System publishes an e-book after it gets approved by management	-e-book publishment request	System (auto-generated	Publish e-book	-e-book publishment status	- Management
28.		The system records member customer's purchase details at the time of purchase.	-e-book purchased by a member	System (auto-generated)	Record details	-purchase details	- Management

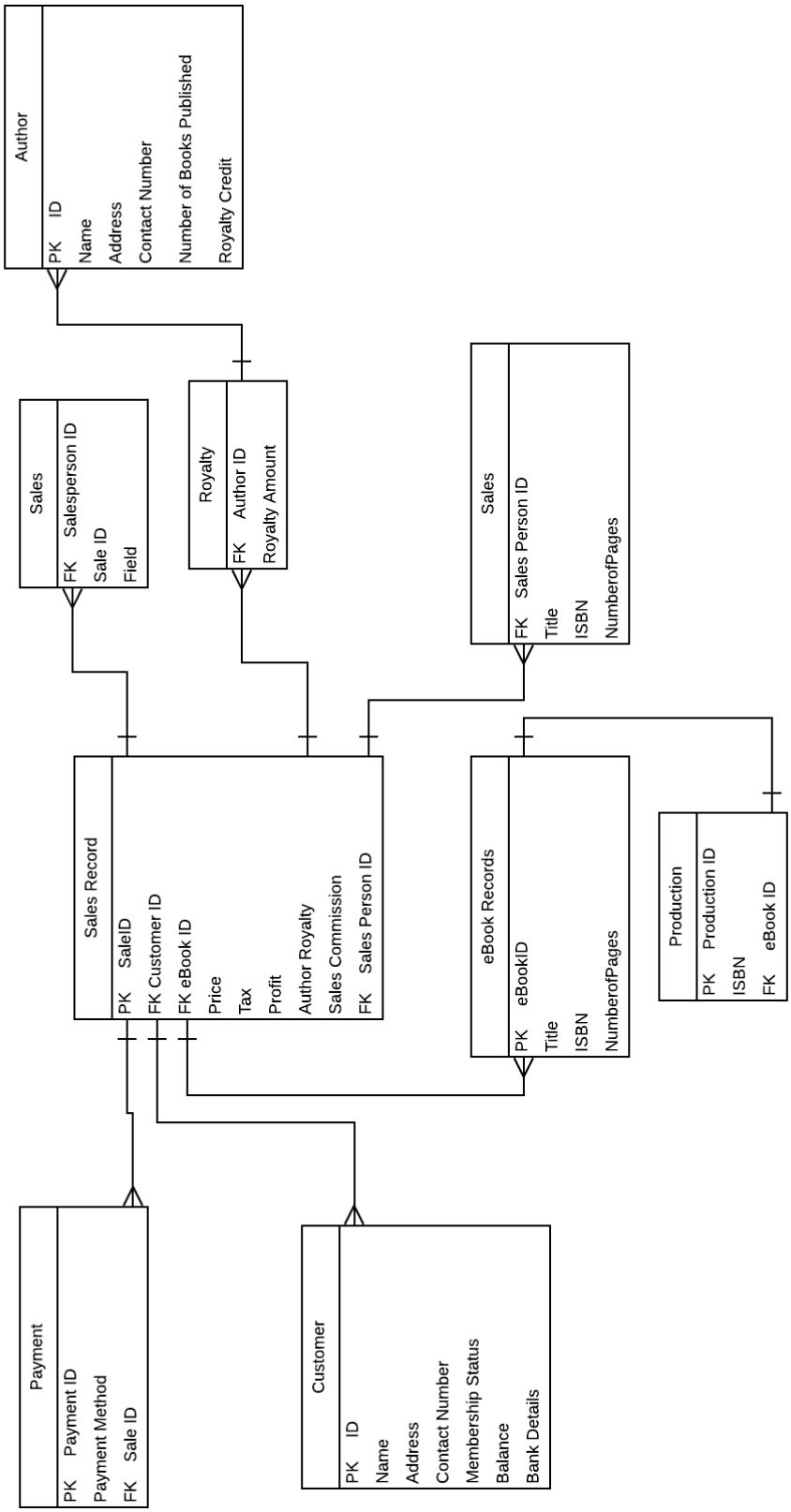
CRUD TECHNIQUE:

We have identified four main actors for use-case diagrams and we are using crud technique on only key events in order to get all the required details about those events.

Use case	**Customer (Member, Non-member)**	**Author**	**Management**	**Third-party website**
Manage User profile	CUD	CUD	RD	R
Manage e-book production	R	R	CRUD	
Respond to Queries	CRUD	CRUD	R	

Manage Interactions	CRUD	CRUD	R	
Manage Sales	R	R	CRU	CU
Calculate Royalty		R	RUD	
Manage Notifications	R	R	R	
Manage Payments	CRD	CR	CRUD	

ERD DIAGRAM


Author
PK ID
Name
Address
Contact Number
Number of Books Published
Royalty Credit
Sales
FK Salesperson ID
Sale ID
Field
Royalty
FK Author ID
Royalty Amount
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Title
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FK Sales Person ID
eBook Records
PK eBookID
Title
ISBN
NumberofPages
Production
PK Production ID
ISBN
FK eBook ID
Payment
PK Payment ID
Payment Method
FK Sale ID
Customer
PK ID
Name
Address
Contact Number
Membership Status
Balance
Bank Details

DATA DICTIONARY

PHYSICAL DATA DICTIONARY

Sales Record			
Primary Key/ Foreign Key	Field Name	Data Type	Field Size
Primary Key	SaleID	Number	10
Foreign Key	Customer ID	Number	10
Foreign Key	eBook ID	Number	10
	Price	Number	5
	Tax	Number	5
	Profit	Number	5
	Author Royalty	Number	10
	Sales Commission	Number	10
Foreign Key	Sales Person ID	Number	10

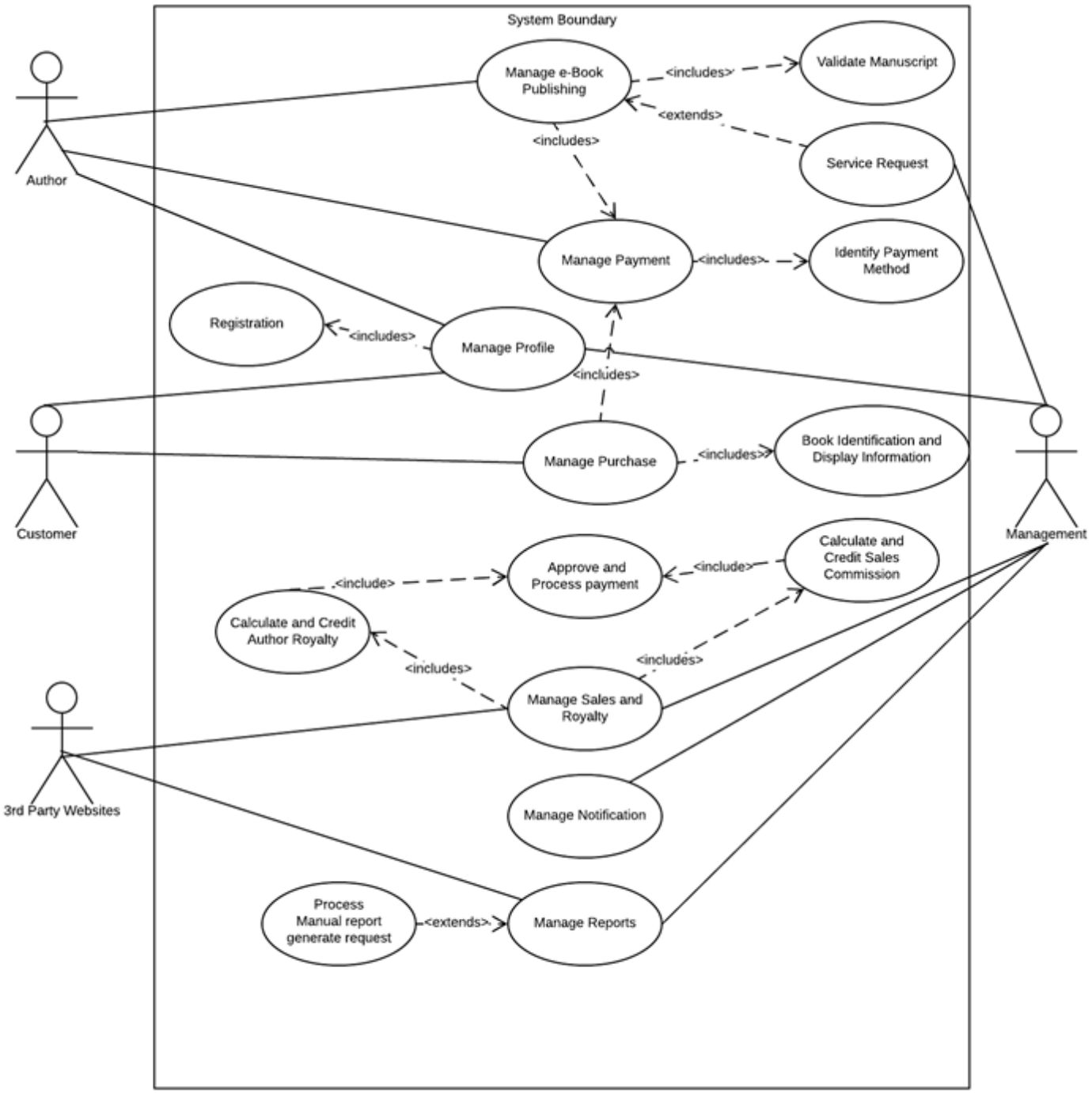
Customer			
Primary Key/ Foreign Key	Field Name	Data Type	Field Size
Primary Key	ID	Number	10
	Customer ID	Number	10
	Name	Varchar	20
	Address	Varchar	20
	Contact Number	Number	10
	Membership Status	Varchar	5
	Balance	Number	5
	Bank Details	Number	10

LOGICAL DATA DICTIONARY

Fragment	Data Dictionary (Logical)
Manage Profile	AuthorDetails = AuthorID + AuthorName + Contact Number + Address AuthorName = Title + FName + LName Title = [“Mr”|“Mrs”|“Miss”|“Ms”] CustomerDetails = CustomerID + CustomerName + Contact Number + Address + Membership Status CustomerName = Title + FName + LName MembershipStatus = [“Active”|“Pending”]
Manage Payment	Payment = [“CustomerDetails”	“AuthorDetails”] + Invoice + CardDetails Invoice = [“CustomerID”	“AuthorID”] + BookID + Amount + Tax CardDetails = CardNumber + Expiry Date + CVV

MODELLING OO APPROACH

USE CASE DIAGRAM



USE CASE DESCRIPTION

Brief Description

Manage Profile

The user can have access to their details and accounts after identification where they can change or update their information such as bank details, home address, office address, and many more. The user has to be logged into the system to access other

Registration

New Customers and New Authors can register into the system for the first time with their details to access the system where the users are supposed to choose a username and password.

Manage E-Book Publishing

If the user wants to publish their book, they have to upload their manuscript with an initial payment and during the time of screening they can access their status of the manuscript.

Validate Manuscript

After the author pays the initial payment, the system pushes the manuscript across layers of screening but first through automated AI based screening system to check for errors then through few layers of manual screening process to get the manuscript approved for publishing.

Service Request

The system can be accessed by the author if they need assistance with the manuscript tracking, promotional services or any other issues with the publishing of their book.

Manage Purchase

The customers may need to browse the collection to select their book or they might have a book in mind which they can search using any identifiers that the system accepts and add them to a personal virtual cart.

Book identification and Display Information

The System request the user to enter any book identification like the name, author, date of publishing or the ISBN then the system searches the database with the identification shows the closest matches.

The user after the system, shows the search results can select a book to display detailed information about the book. If the user is interested in buying the book then the users can add them to the cart then browse through the other books if they are interested in buying more than one book.

Manage Payment

When the author is ready to pay the initial amount or when the user has finalized their buying list, they can proceed to the payment section where the initial cost or the cost of the book along with taxes are calculated and is displayed to the respective user where they can confirm the information displayed and pay the amount using the preferred payment method.

Identify Payment method

The users can choose to pay the amount required to confirm the order using their preferred payment method that is accepted by the system.

Manage Sales and Royalty

The system automatically calculates the sales commission and royalty for the sales that are made directly and through 3rd party sales that have to be paid to the salesperson and author and automatically transfers it upon approval.

Calculate and Credit Author Royalty

The system automatically calculates the author royalty upon each sale and combines the data of 3rd party websites then the system credits it into their respective authors account within the system for approval at the end of the month.

Calculate and Credit Sales Commission

The system automatically calculates the sales commission upon each sale and combines the data of 3rd party websites then the system credits it into their respective sales persons account within the system for approval at the end of the month.

Approve and Process payments

The system automatically sends the credit balance to the respective managers who then verifies it and approve them then the system automatically pays the authors and the sales persons based on their credit in the system upon approval.

Manage Notifications

The system automatically generates notifications for the managers to verify payment, report and also generates overdue notifications that need to send to member customers.

Manage Reports

The system automatically generates all the report for the management such as sales commission, customer transaction, author royalty, profit report and many more reports for the management to make informed decisions at the end of the specific term at a specific time.

Process Manual Report generate request

The system automatically generates the reports that the required by the management at for a specific term at request by the management.

Intermediate use case description

Manage e-book Publishing

Description

If the user wants to publish their book, they have some procedure to follow with an initial payment and during the time of screening, they can access their status of the manuscript.

MAIN FLOW

1. The author needs to login to the system
2. The author uploads the manuscript to the system
3. The system prompts the author for the initial payment
4. The author selects payment option and makes the payment
5. The payment statement is emailed to the author
6. The system forwards it for AI-based validation then to the manual validation process
7. Then upon approval, the system sends a notification the author and then prompts the author to opt for promotional services.

Exceptions

1. At step one, if the author has no login credentials, he/she can't get access to the system.
2. At step four, if the author has some different payment options other than what is accepted by the system, the author will not be able to make the payment.
3. At step four, if the author enters wrong payment details, then step five will not happen

Manage Payment

Description

When the user has finalized their buying list or author wants to make their initial payment, they can proceed to the payment section where the cost of the book along with taxes are calculated

and is displayed to the user where they can confirm the information displayed and pay the amount using preferred payment method.

MAIN FLOW

1. The author or the customer needs to login to the system.
2. Then they are forwarded to a secure payment portal.
3. They enter payment details to the system.
4. Then the system authenticates their information.
5. Then they are brought back to the confirmation page.
6. The system sends an email confirmation.

EXCEPTION

1. At step one, if the author has no login credentials, he/she can't get access to the system.
2. At step three, if the author has some different payment options other than what is accepted by the system, the author will not be able to make the payment.
3. At step four, if the author enters wrong payment details, then step five will not happen

Manage Sales and Royalty

The system automatically calculates the sales commission and royalty for the sales that are made directly and through 3rd party sales that have to be paid to the salesperson and author and automatically transfers it upon approval.

MAIN FLOW

1. The author royalty and sales commission are calculated by the system
2. Their respective amount is credited to their accounts in the system
3. The manager looks for anomalies in this data
4. The manager approves the payment

5. The system automatically initiates the payment

EXCEPTION

1. At step one, if the manager doesn't enter correct credentials, they can't get access to the system.
2. At step four, if the manager doesn't approve the payment the amount is held.

Formal Use Case Description

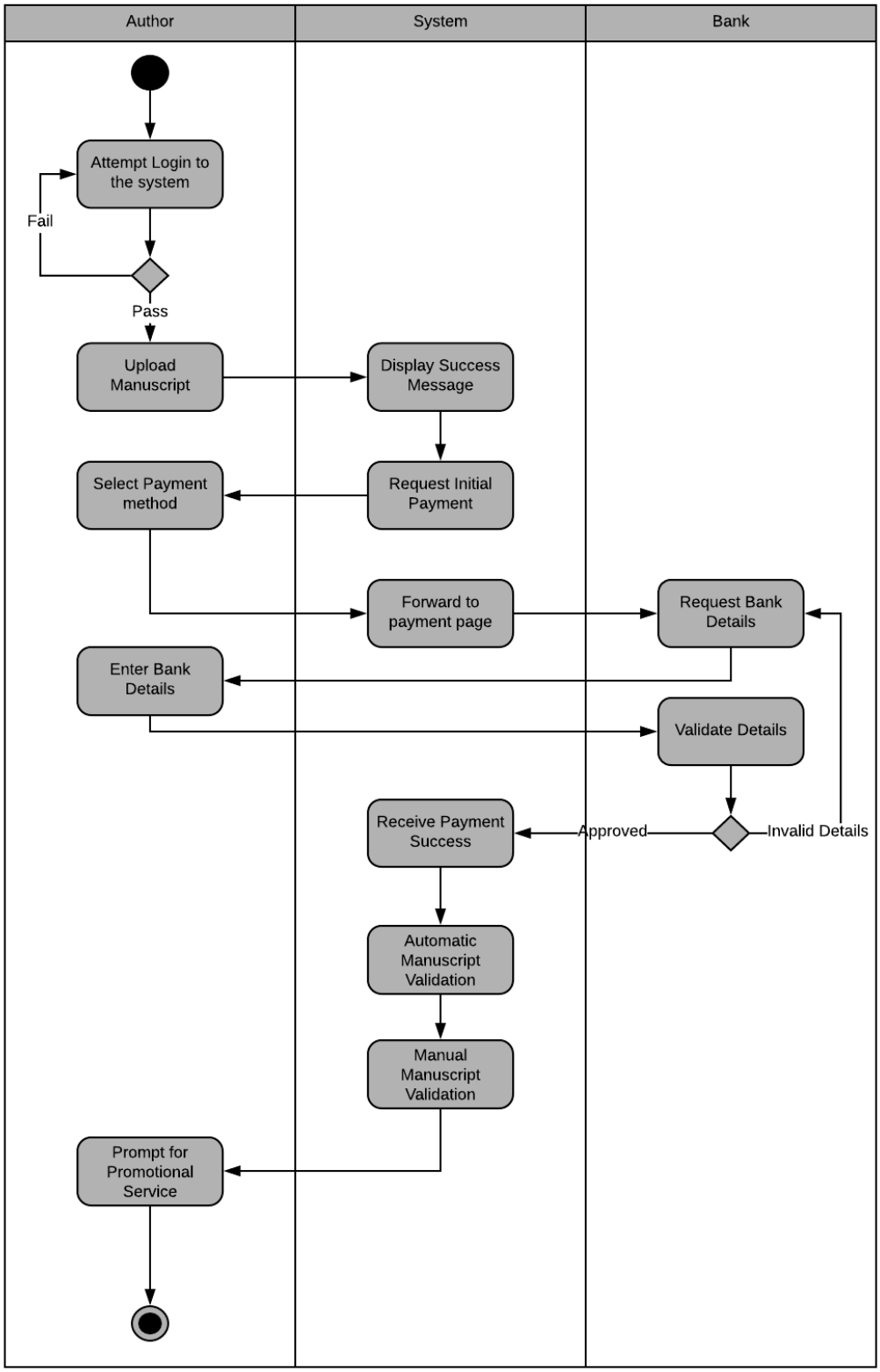
Manage e-book Publishing

Scenario	The author wants to publish their book or wants to access their status of the manuscript.
Trigger Event	Author accessing the system to upload manuscript.
Brief Description	If the user wants to publish their book they have some procedure to follow with an initial payment and during the time of screening, they can access their status of the manuscript.
Actor	Author
Stakeholders	Author, Sales Team Member, Managers, and CEO
Precondition	The author must log in successfully to access the system
Postcondition	The book is successfully published and confirmation mail is sent to the author.
Flow of Activities	**ACTOR**

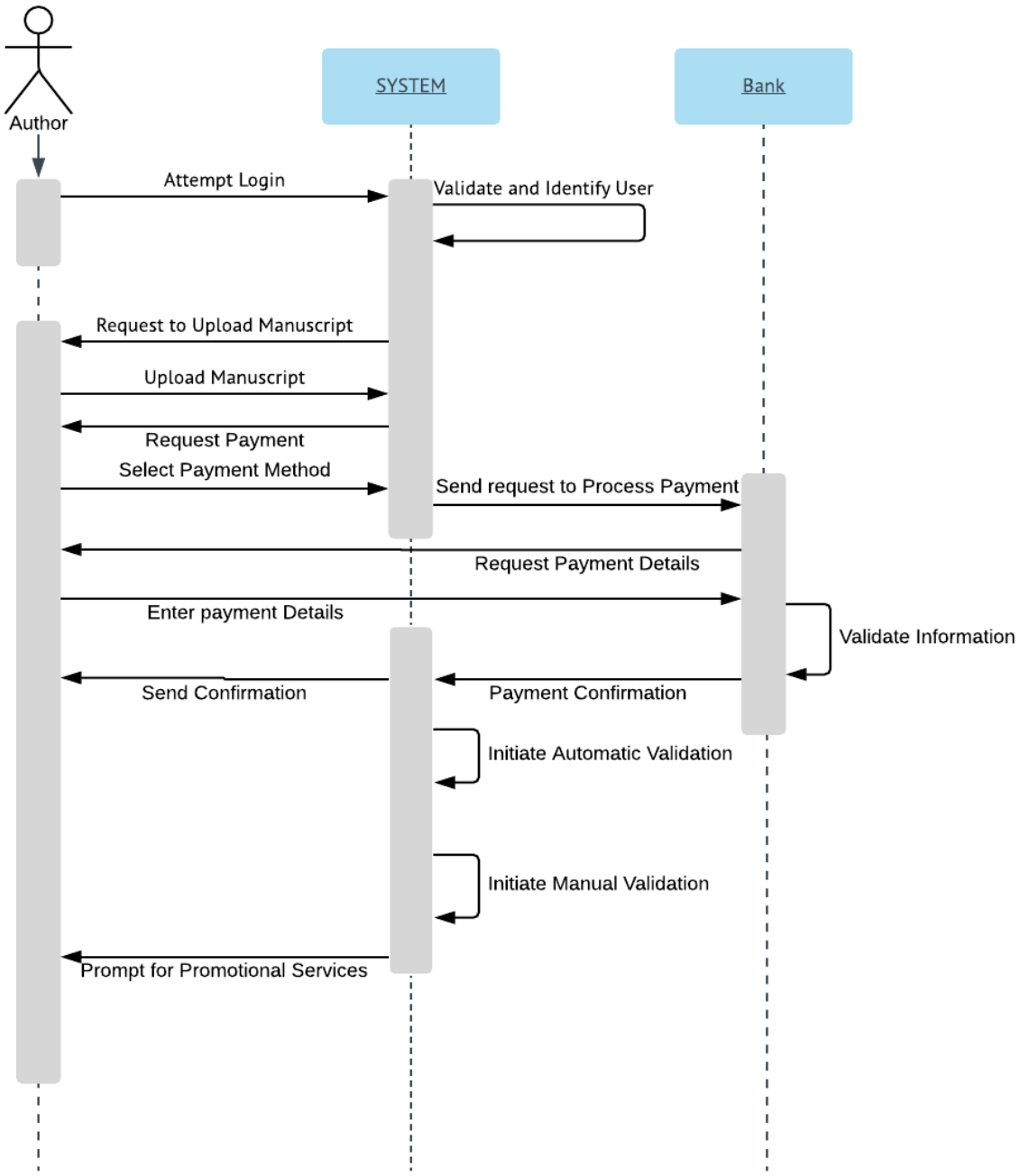
	1. The author needs to login to the system. 2. The author needs to upload the manuscript to the system 3. The author selects the payment method and pays the initial amount **SYSTEM** 1. The system authenticates the author's credentials 2. The system displays the upload manuscript page 3. The system validates the manuscript 4. The system displays payment slip and payment method 5. System processes payment 6. System sends a confirmation message
Exception	1. At step one in the author, if the author has no login credentials, he/she can't get access to the system. 2. At step four in the system, if the author has some different payment options other than what is accepted by the system, the author will not be able to make the payment.

	3. At step three in the author, if the author enters wrong payment details the payment will be canceled.

ACTIVITY DIAGRAM



SEQUENCE DIAGRAM



Comparison of Traditional and OO Approach:

Traditional Approach	OO Approach
It works with different types of SDLC such as the waterfall, spiral and iterative models.	It is the Object-oriented modelling language.
There are different phases involved in this project such as the gathering of requirements for the stages of software life cycle.	It is best suited for adopting the latest technologies which are based on objects. This is used for computer applications.
There is no flexibility.	There is lot of flexibility.
This approach uses structural and procedural programming.	This approach uses object-oriented programming.
The phases are analysis, design, implementation and testing.	This approach has use case diagram, sequence diagram, activity diagram and class diagram.
It takes lot of time to develop.	It takes even longer time to develop a project.
One of the drawbacks of traditional approach is that it uses old lifecycle models.	OO SDLC has three phases of the traditional approach and they are analysis, design and implementation.

Current System:

Current System Functional Requirements:

Type of Requirement	Requirement ID	Requirement Statement	Comments
FR	FR01	The customers shall be able to login to the System by providing valid credentials.	
FR	FR02	The system shall assign a unique identification number to the members.	The system shall provide a unique ID to members so that the system can send promotion and discount mails to members.
FR	FR03	The system shall provide an option for member customers to send emails to e-book authors.	The member customer shall have some extra privileges like receiving free copies of the books, exchange ideas with author, get discount and attend free company events.
FR	FR04	The system shall assign a unique identification number to each e-book.	Unique ID can help in tracing the number of sales.

FR	FR05	The system shall record sales transaction made by member customers.	The recorded transaction can be used for marketing purposes.
FR	FR06	The system shall provide options for paying by credit card, cheque or through banks to member customers.	
FR	FR07	The system shall allow member customers to pay later in the month of their purchase	Members can pay later at any time in the month of their e-book purchase.
FR	FR08	The system shall provide two payment options to non-members, payment by credit card or through bank account.	Non-members have to pay at the time of the purchase by either credit card or through bank account.
FR	FR09	The system shall be able to generate e-books in various format.	E-books designed in different formats can be suitable for reading on different devices or for printing purposes.
FR	FR10	The system shall record the sales transactions made via different channels separately.	The e-books are sold via various online channels, so the system shall record the transactions made via

			different channels separately.
FR	FR11	The system shall allow users to update their account details.	
FR	FR12	The system shall allow creation of new account by collecting user name, address, phone number, email address.	
FR	FR13	The system shall allow users to update their password.	
FR	FR14	The system shall allow users to delete their account.	
FR	FR15	The system shall allow users to reset their passwords.	
FR	FR16	The system shall allow salespersons to add author leads details.	
FR	FR17	The system shall allow the salespersons to update author leads details.	

NFR	NFR01	The system shall load the page in less than 5 seconds.	
NFR	NFR02	The system shall display dialogue box saying “please wait” if it takes longer to load the webpage.	
NFR	NFR03	The system shall have help button on every screen.	
NFR	NFR04	The System availability percentage shall be 99%.	The system shall be available 99 out of 100 times.
NFR	NFR05	The system shall be able to handle fifty simultaneous connection requests.	
NFR	NFR06	The system shall provide 256-bit encryption to databases.	Encryption of data is required to ensure security.
NFR	NFR07	The system shall maintain all the system data storages correctly.	

Corrected Event Table – Current System

S. No Event type	Event	Trigger	Source	Use cases	Response	Destination
1. External	Author calls to convert and publish his Book as eBook	Author enquiry Phone call	Author	Manage Enquiry	Production Process Promotion and payment details	Author
2. External	Salesperson wants to add Author details to database	Sales lead Author details	PI System	Manage Author database	Record confirmation Author information	PI System
3. External	Author agrees to sell	Initiate payment	Author	Manage Payment	Sale confirmation Payment confirmation	Author
4. External	Author sends Manuscript in packet	Initiate production process Corrections sent	Author	Manage Production	Scanning the Manuscript Corrections updated PDF EPub Mobi File is created and posted to web	PI System

5. External	Author calls to check the progress	Author enquiry	Author	Manage Enquiry	Manually checked Status and updated Progress details	Author
6. External	HR Staffs want to combine Sales record	Access Sales lead DB	Management	Manage Sales	Sale records are combined manually and updated	Management
7. External	HR Staffs wants to measure Salespersons performance	Access Sales lead DB	Management	Manage Salesperson details	Salesperson performance calculated and updated	Management
8. State	eBook is created and has to be uploaded to e-commerce website	System notify when PDF, EPub or Mobi is created	System (Auto generated)	Manage file uploads to e-commerce website	File uploaded notification eBook identification number created	Management
9. External	eBook is ready for promotion	Standard promotion Paid promotion	PI System	Manage Promotion	Promotion and Marketing details	Management
10. External	Customer clicks to register at e-commerce website	Registration form Customer details	Customer	Maintain Registry	Account created confirmation	Customer

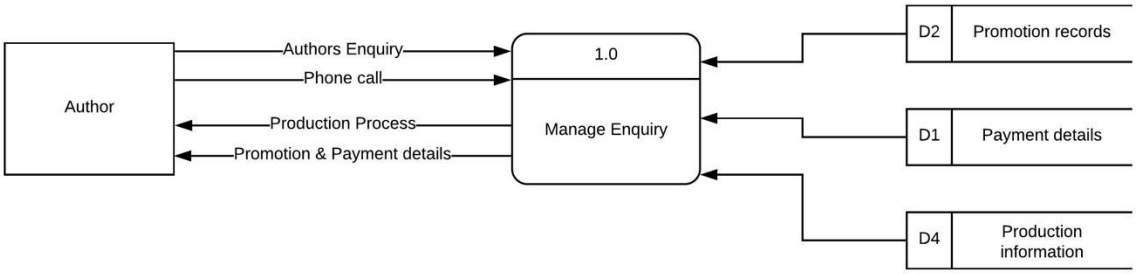
					Customer Unique Identification number created	
11. External	Customer searches catalogue and click on the eBook for purchase	Initiate purchase process Payment process Pay later Display Download format options	Customer	Manage Purchase	Payment successful Invoice details Download options PDF, EPub and Mobi displayed eBook download is emailed Update customer details with eBook ID	Customer
12. State	eBook download link is emailed to customer	System notify when link is sent	System (Auto-generated)	Create notification email with download link is sent	Download link sent successful notification	Management
13. Temporal	Time for registered Customer to	End of 30 days	System (Auto-generated)	Create e-mail report	Report sent	Customer

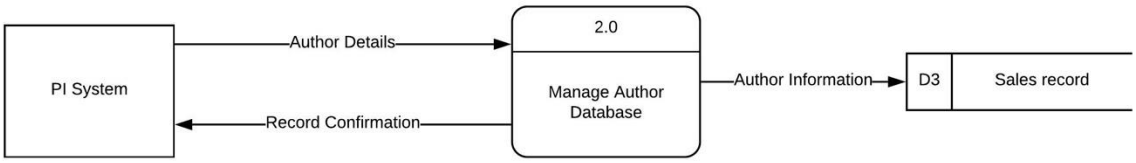
	pay for eBook if chosen to pay later			(reminder to pay)		
14. State	Promotional things are curated for customers based on eBook purchase	System notify when curated things are ready	System (Auto-generated)	Create notification Sent Promotional things via e-mail	Promotion sent successful notification	Management
15. Temporal	Time for dumping the sales number from e-commerce server	End of each quarter	System (Auto-generated)	Add Sales numbers to Excel	Sales number report	PI System
16. External	Accounting Department ready to calculate royalties	Royalty compensation form	PI System	Process Royalties	Royalties calculated 15% Commission 85% Authors Royalty check is written manually	Management
17. State	Royalty check is ready to be sent to Author	System notify when it is ready to be sent	System (Auto-generated)	Create notification for sending royalty check	Sent royalties notification	Author
18. External	Promotion and	Requests quarterly or	Management	Create report	Report generated to	Management

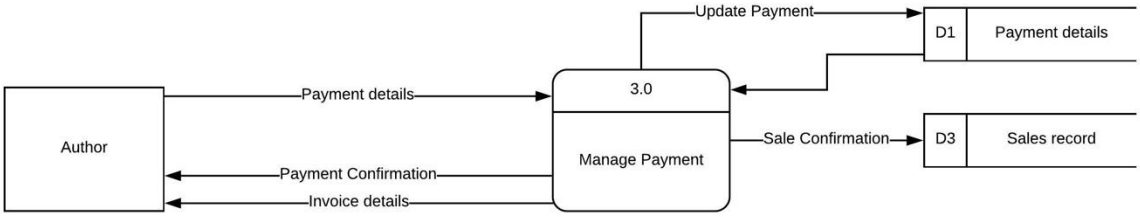
	Marketing Department wants Member transaction history	annually customers detail with eBook purchase history			analyze and develop customer mailing list is sent	
19. State	When a member hasn't purchased eBook in a month	System notify when it's time to send special offers to members	System (Auto-generated)	Generate e-mail	E-mail with special offers is sent	Customer
20. External	Promotion and Marketing Department wants member details	Requests member details	Management	Generate report	Member details in report	Management
21. External	Promotion and Marketing department contacts member	Phone call	Management	Manage purchase	Contacted regarding purchasing eBook	Customer
22. External	Accounting Department wants to analyze sales revenue	Requests sales data	Management	Generate report	Inventory and sales data in report	Management

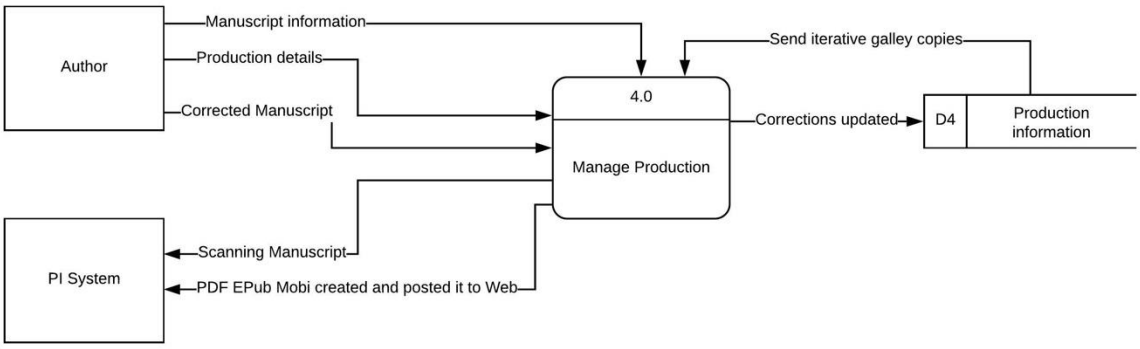
23. External	Accounting Department wants catalogue of eBook	Requests catalogue and inventory	Management	Generate report	eBook catalogue, sales and inventory in report	Management
24. External	Customer asks for Print on Demand	Requests for Print on demand Initiate payment	Customer	Maintain Printing	Printing the eBook Payment successful Invoice details	Customer
25. External	Sales and services department is ready to give the printed eBook	eBook printed	Management	Maintain Printing	Printed eBook is given	Customer

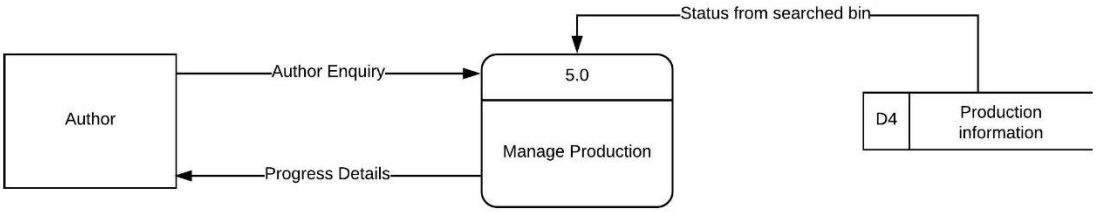
Data Fragments:

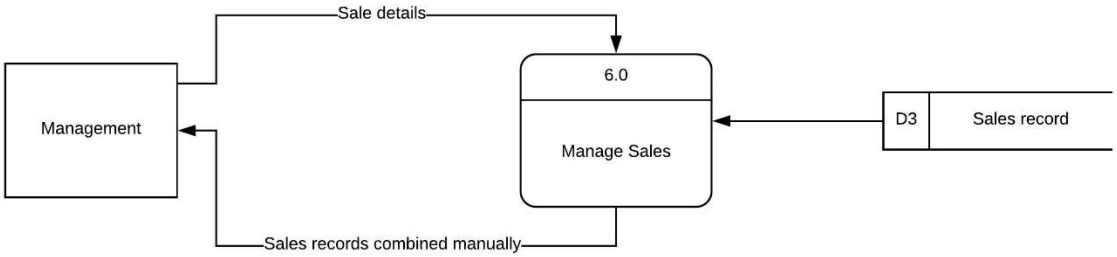


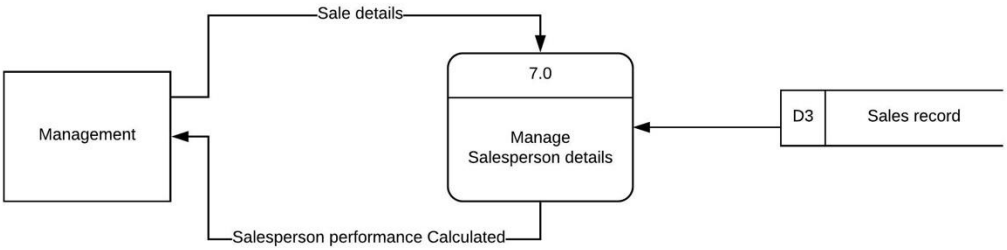


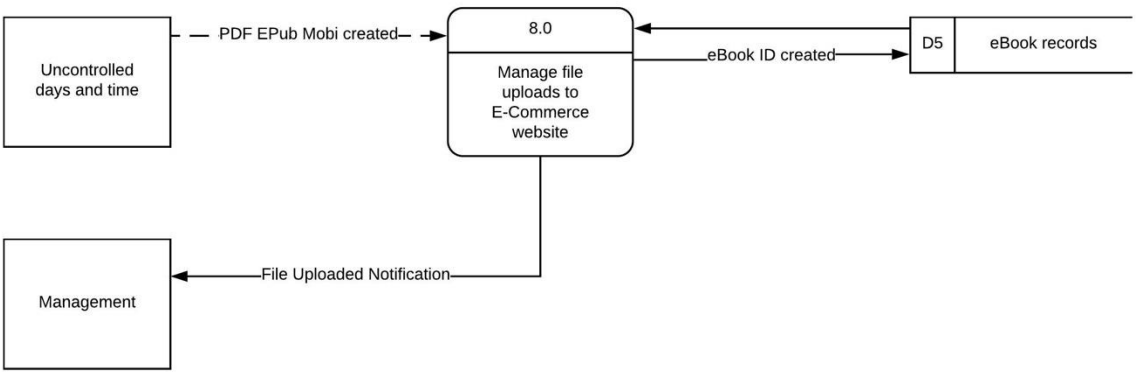


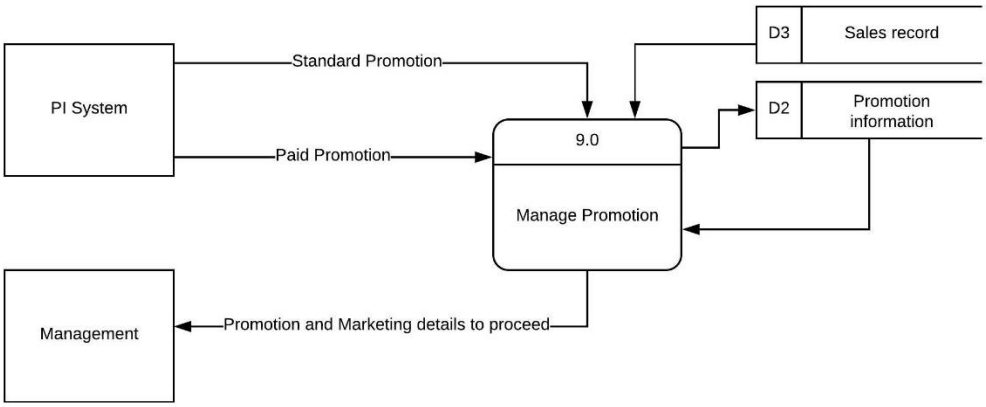


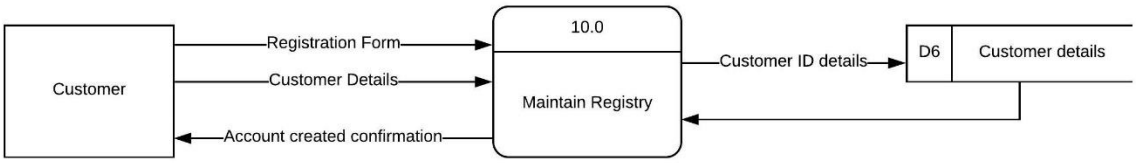

Status from searched bin
Author
Author Enquiry
5.0
Manage Production
Progress Details
D4
Production information

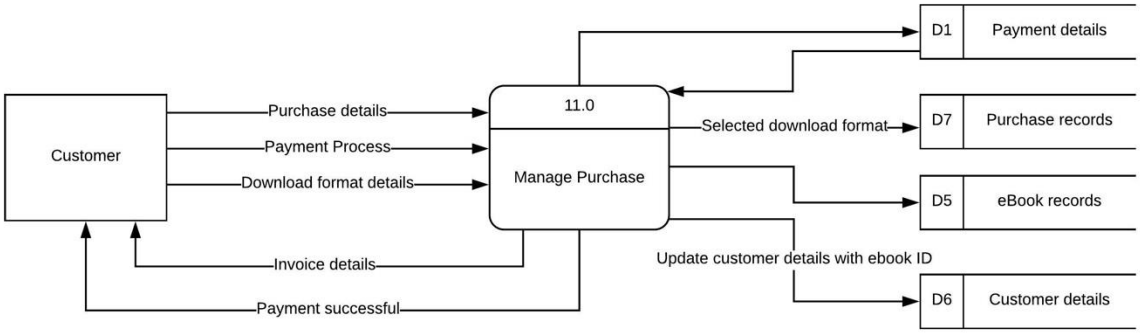

Sale details
Management
6.0
Manage Sales
D3
Sales record
Sales records combined manually

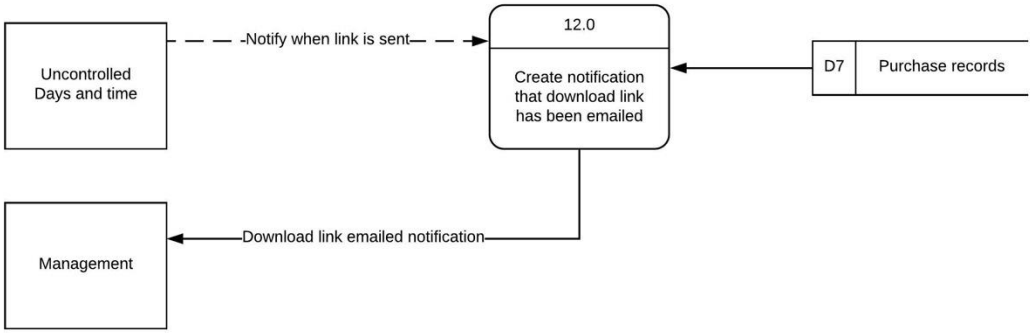

Sale details
Management
7.0
Manage Salesperson details
D3
Sales record
Salesperson performance Calculated

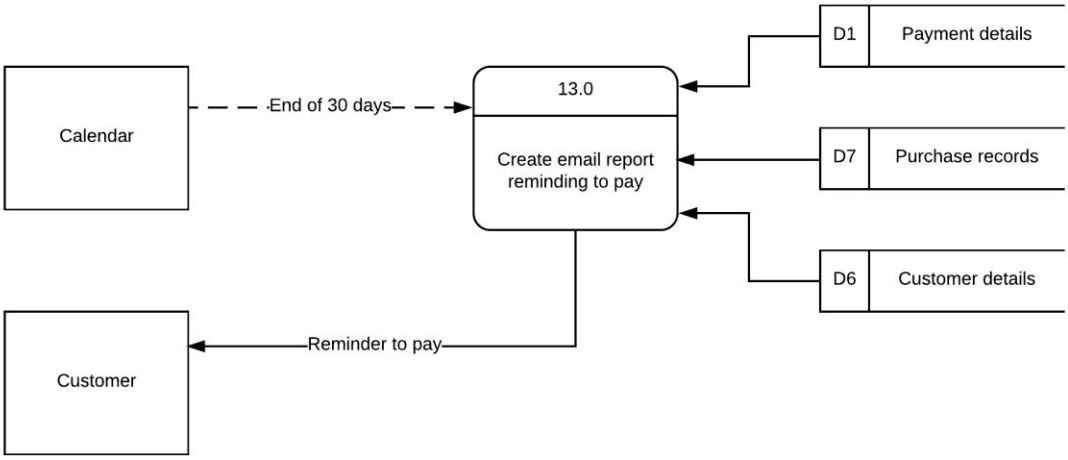

Uncontrolled days and time
PDF EPub Mobi created
8.0
Manage file uploads to E-Commerce website
eBook ID created
D5
eBook records
Management
File Uploaded Notification

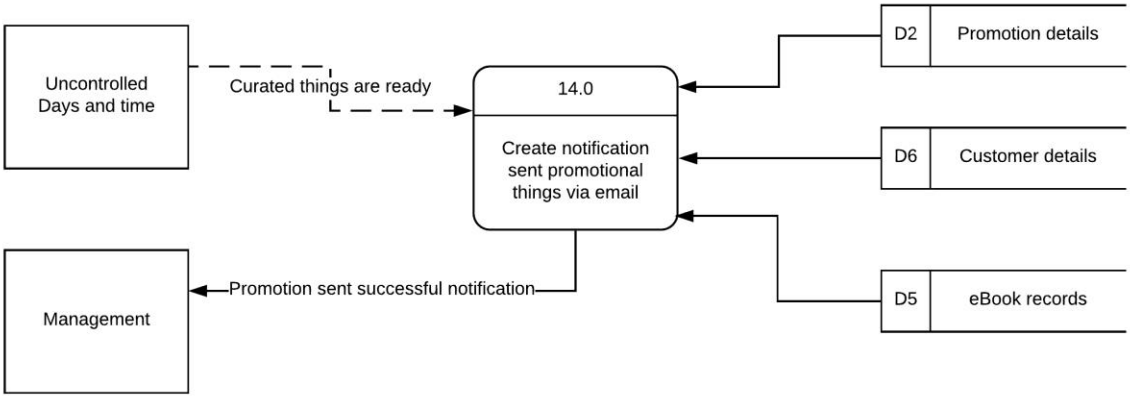

D3
Sales record
PI System
Standard Promotion
D2
Promotion information
9.0
Paid Promotion
Manage Promotion
Management
Promotion and Marketing details to proceed

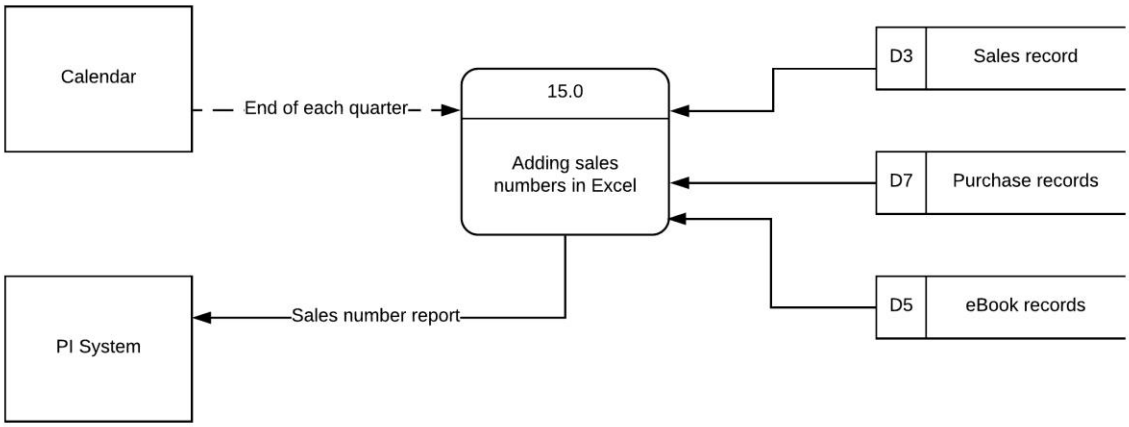

10.0
Customer
Registration Form
Customer Details
Maintain Registry
Customer ID details
D6
Customer details
Account created confirmation

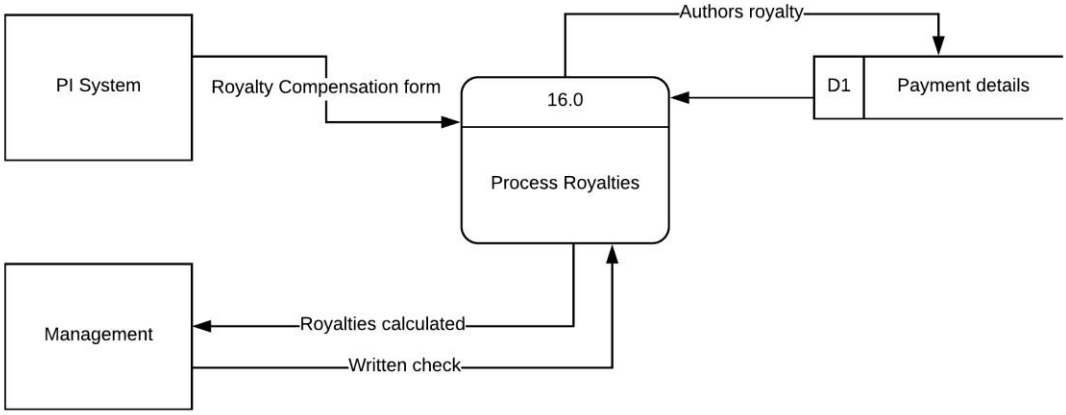

D1
Payment details
Customer
Purchase details
Payment Process
Download format details
11.0
Manage Purchase
Selected download format
D7
Purchase records
D5
eBook records
Update customer details with ebook ID
D6
Customer details
Invoice details
Payment successful

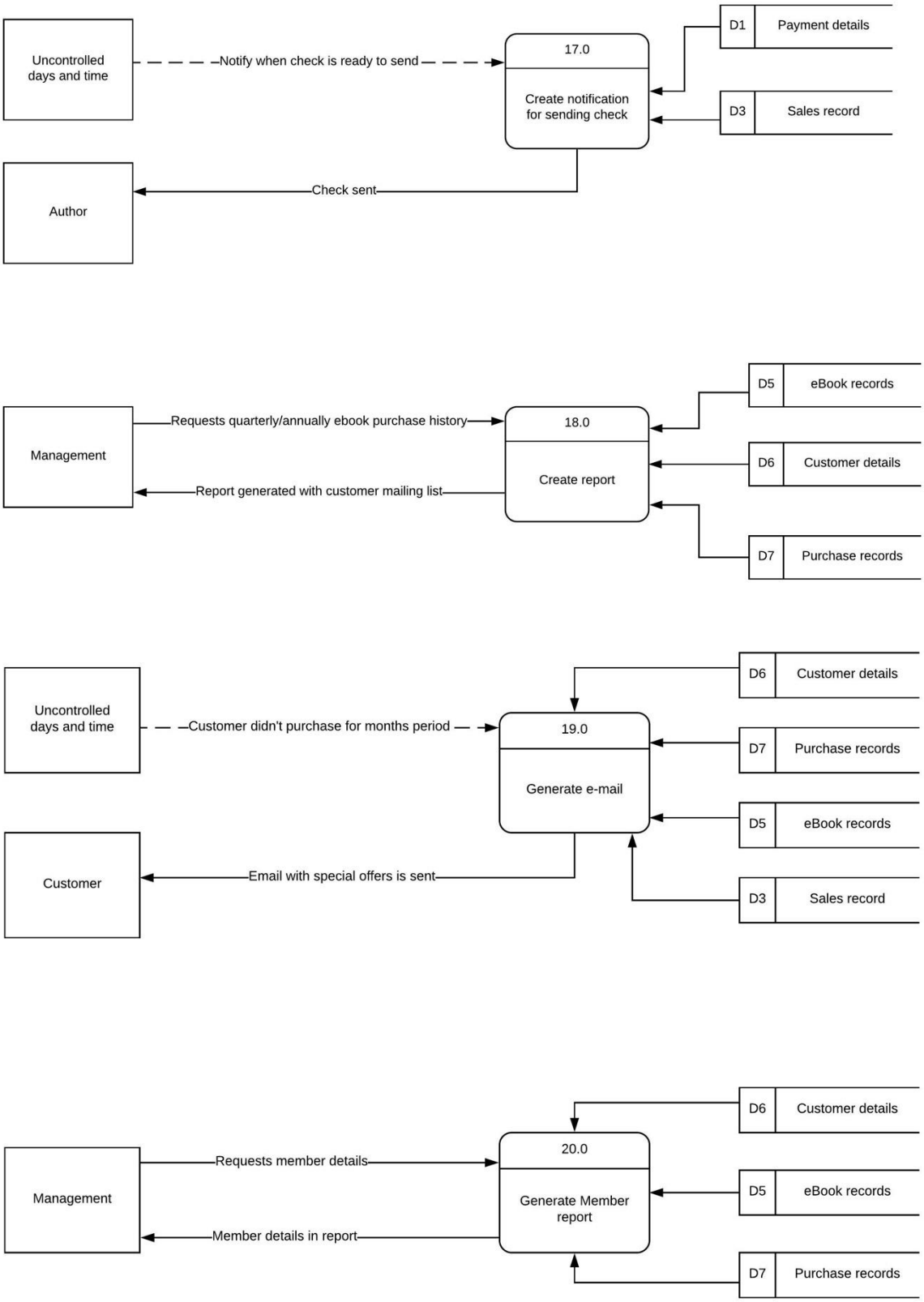

Uncontrolled
Days and time
-Notify when link is sent
12.0
Create notification
that download link
has been emailed
D7
Purchase records
Management
Download link emailed notification

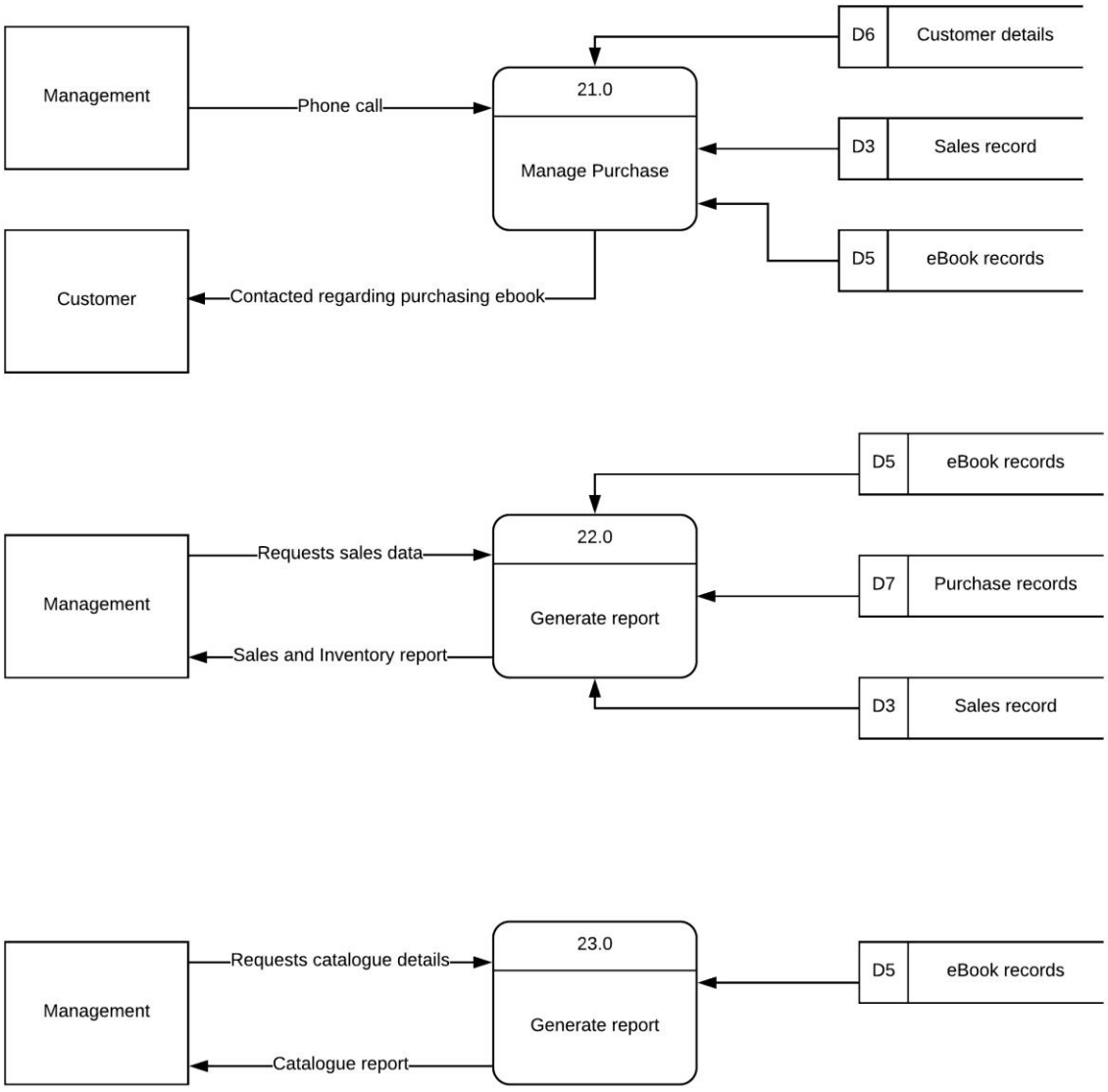

Calendar
End of 30 days
13.0
Create email report reminding to pay
D1
Payment details
D7
Purchase records
D6
Customer details
Customer
Reminder to pay


Uncontrolled Days and time
Curated things are ready
14.0
Create notification sent promotional things via email
D2
Promotion details
D6
Customer details
D5
eBook records
Management
Promotion sent successful notification

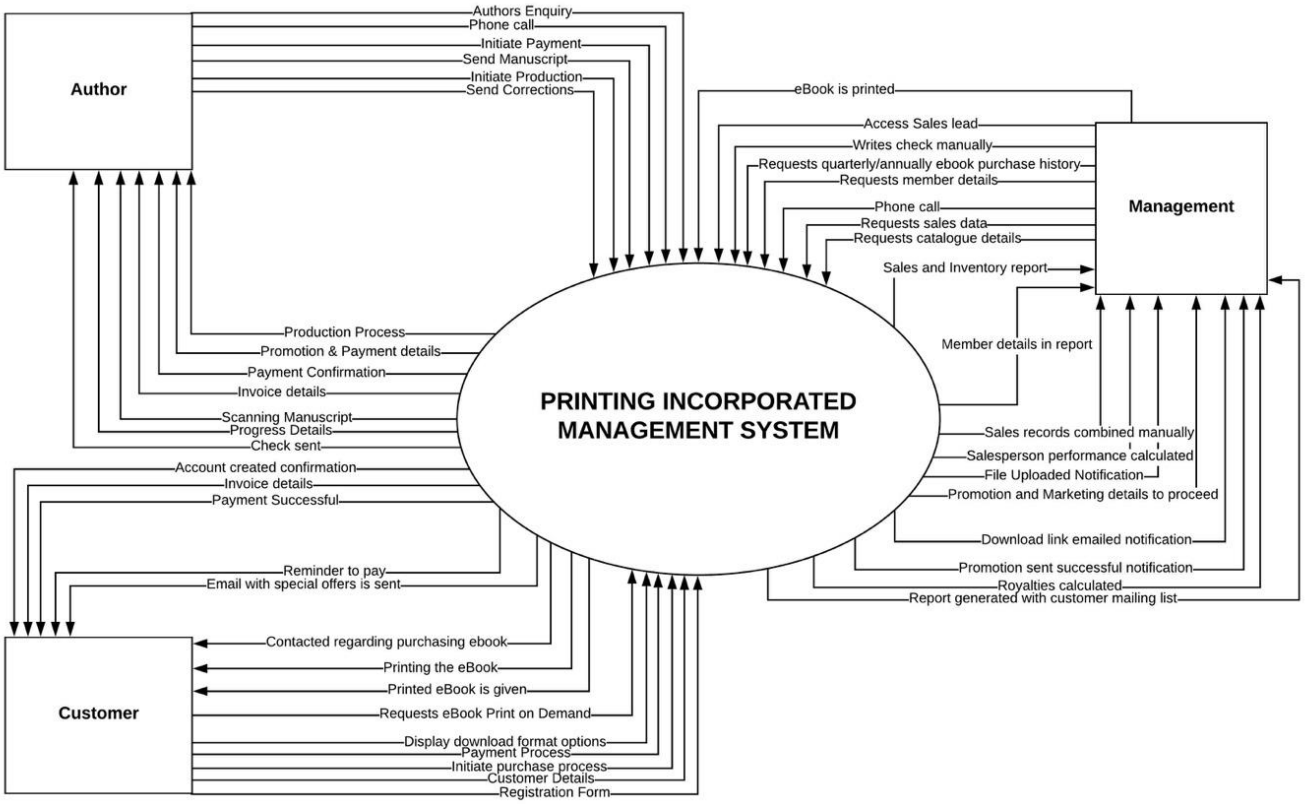

Calendar
End of each quarter
15.0
Adding sales numbers in Excel
D3
Sales record
D7
Purchase records
D5
eBook records
PI System
Sales number report


PI System
Royalty Compensation form
Authors royalty
16.0
Process Royalties
D1
Payment details
Management
Royalties calculated
Written check

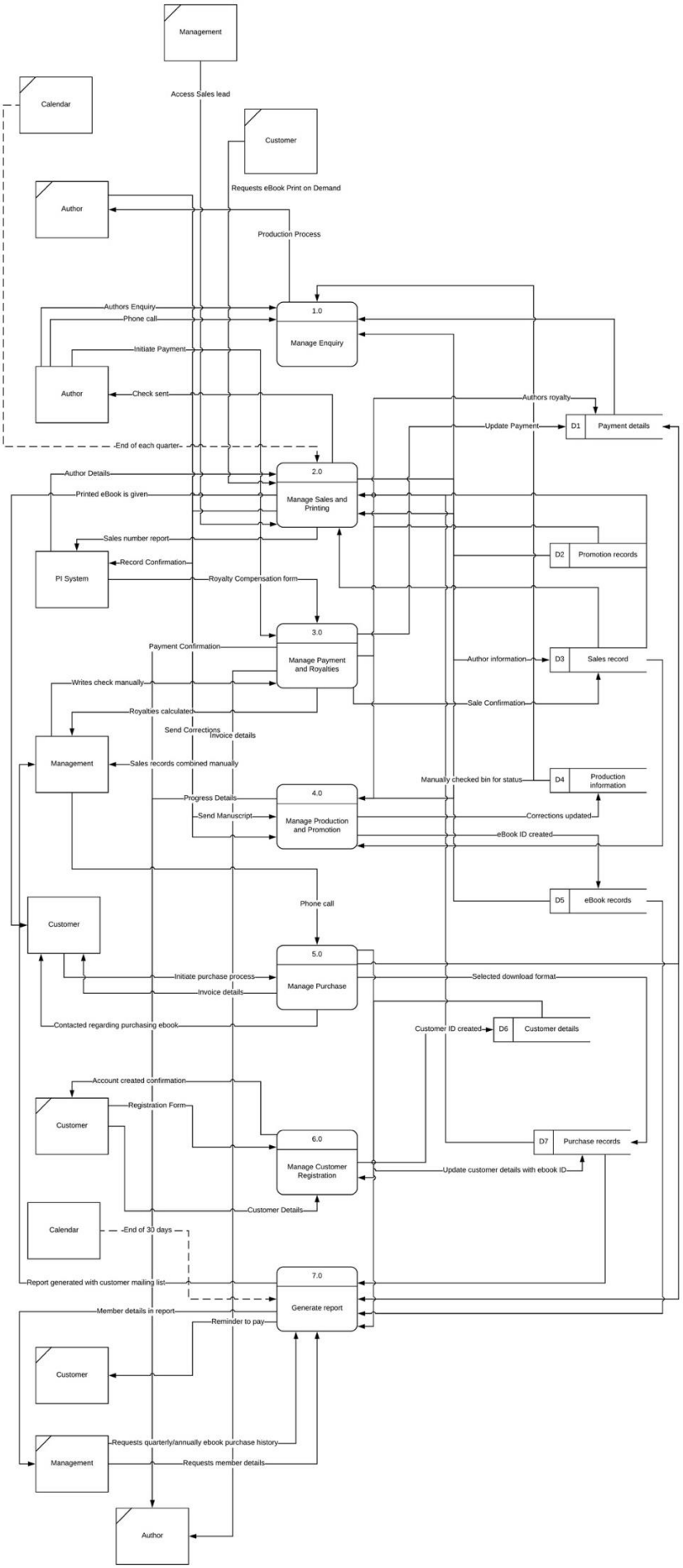

Uncontrolled days and time
Notify when check is ready to send
17.0
Create notification for sending check
D1
Payment details
D3
Sales record
Author
Check sent
Management
Requests quarterly/annually ebook purchase history
18.0
Create report
Report generated with customer mailing list
D5
eBook records
D6
Customer details
D7
Purchase records
Uncontrolled days and time
Customer didn't purchase for months period
19.0
Generate e-mail
Customer
Email with special offers is sent
D6
Customer details
D7
Purchase records
D5
eBook records
D3
Sales record
Management
Requests member details
20.0
Generate Member report
Member details in report
D6
Customer details
D5
eBook records
D7
Purchase records



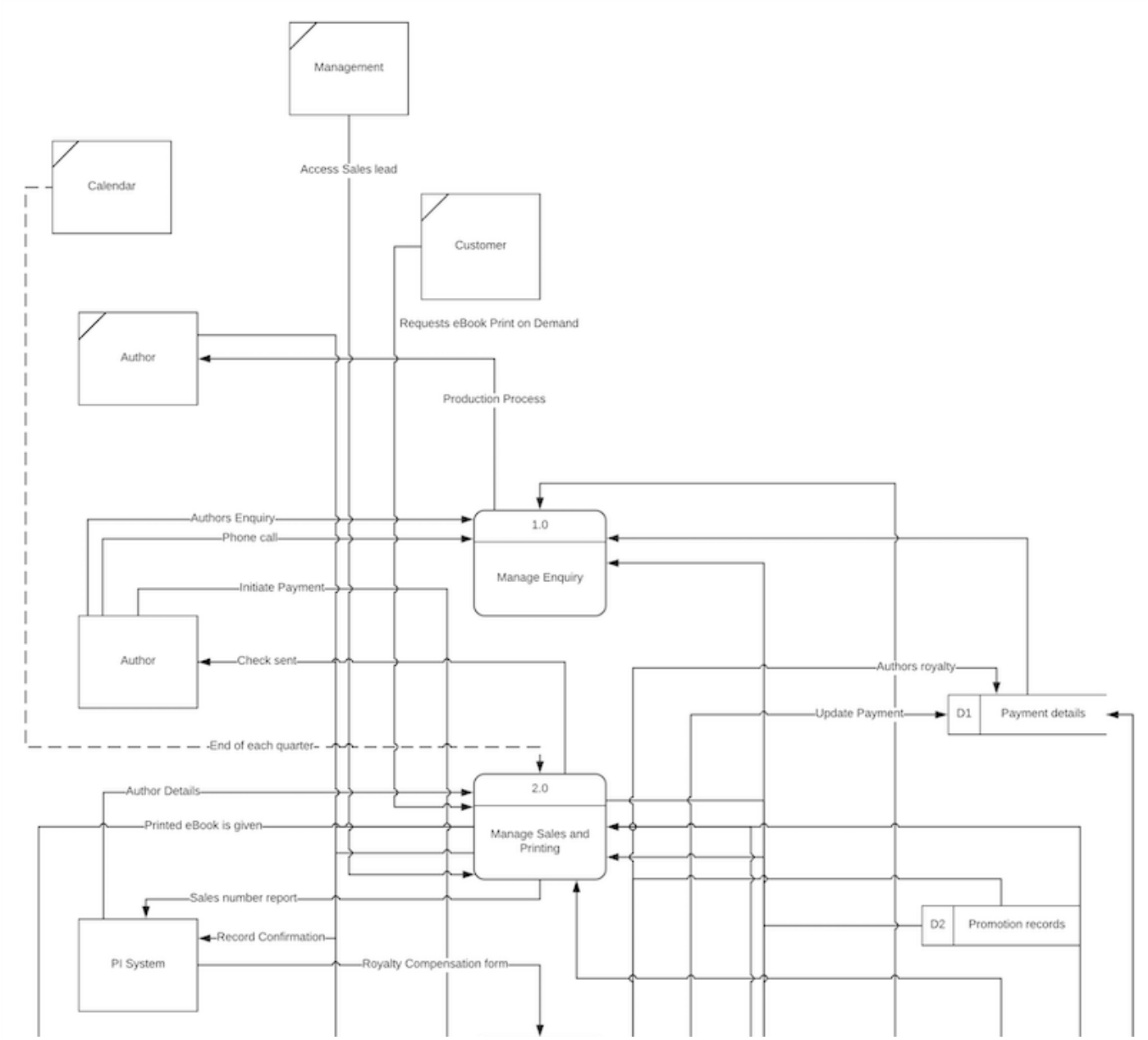
CONTEXT DIAGRAM:

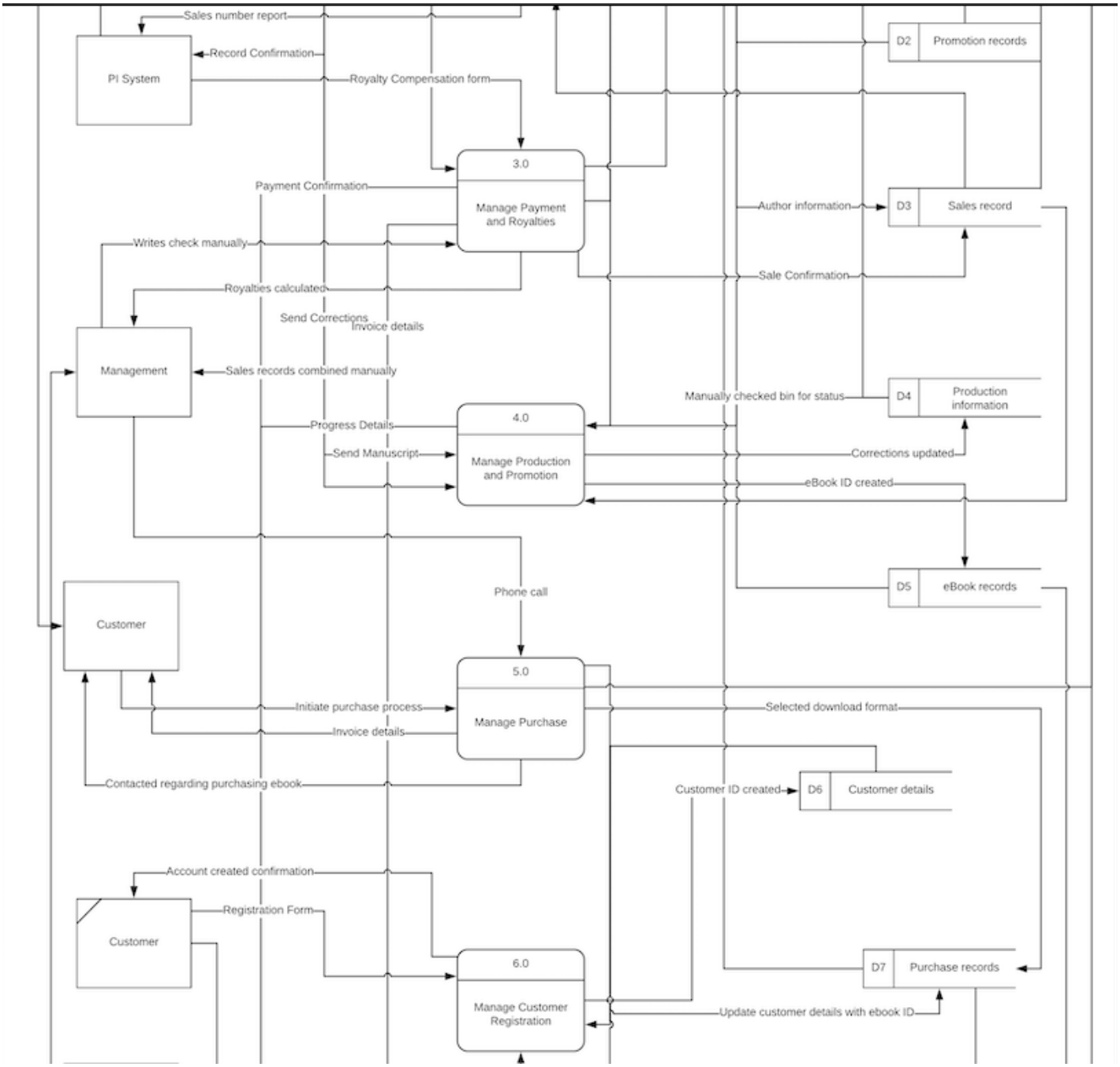


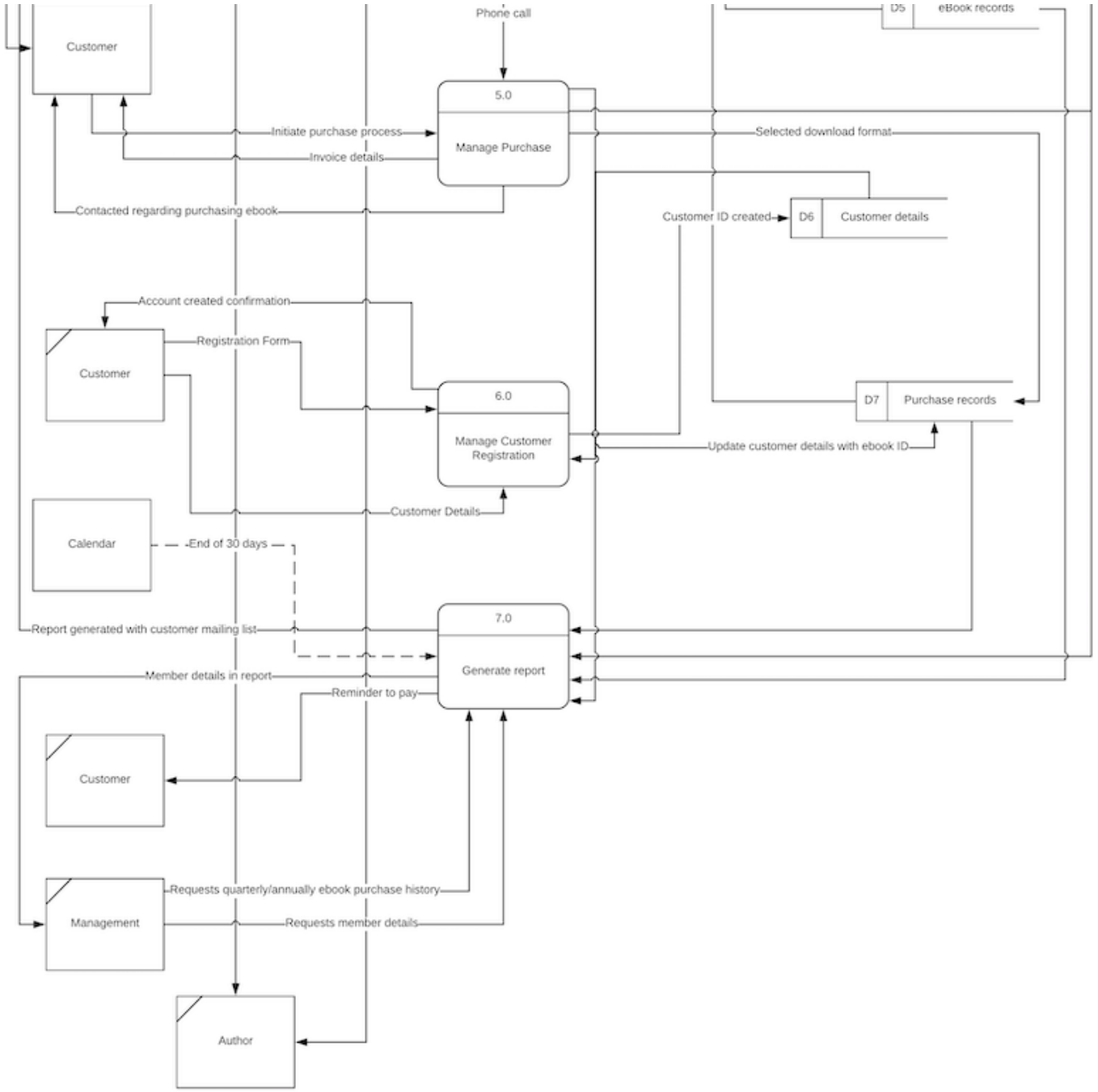
DFD LVL 0 Full diagram:


Management
Calendar
Access Sales lead
Customer
Requests eBook Print on Demand
Author
Production Process
Authors Enquiry
Phone call
1.0
Manage Enquiry
Initiate Payment
Author
Check sent
Authors royalty
Update Payment
D1
Payment details
End of each quarter
Author Details
Printed eBook is given
2.0
Manage Sales and Printing
Sales number report
D2
Promotion records
PI System
Record Confirmation
Royalty Compensation form
3.0
Manage Payment and Royalties
Payment Confirmation
Author information
D3
Sales record
Writes check manually
Sale Confirmation
Royalties calculated
Send Corrections
Invoice details
Management
Sales records combined manually
Manually checked bin for status
D4
Production information
Progress Details
4.0
Manage Production and Promotion
Send Manuscript
Corrections updated
eBook ID created
D5
eBook records
Phone call
Customer
5.0
Manage Purchase
Initiate purchase process
Invoice details
Selected download format
Contacted regarding purchasing ebook
Customer ID created
D6
Customer details
Account created confirmation
Customer
Registration Form
D7
Purchase records
6.0
Manage Customer Registration
Update customer details with ebook ID
Calendar
End of 30 days
Customer Details
Report generated with customer mailing list
7.0
Generate report
Member details in report
Reminder to pay
Customer
Requests quarterly/annually ebook purchase history
Management
Requests member details
Author

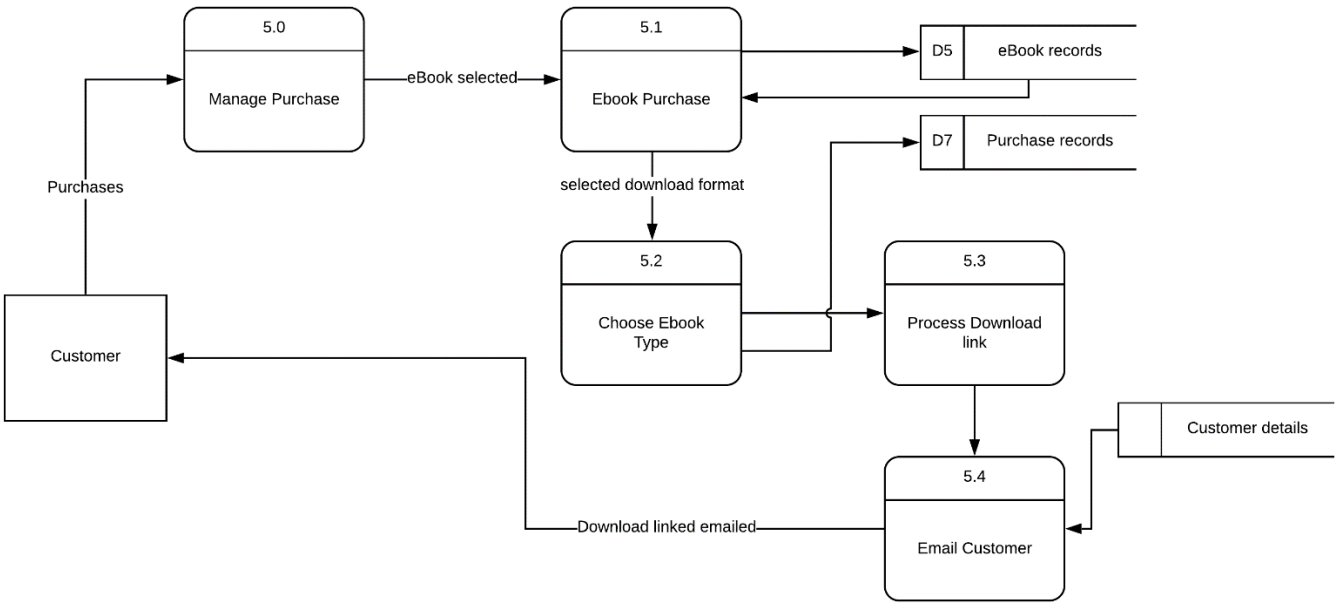
DFD Lvl 0 Splitted diagram:


Management
Calendar
Access Sales lead
Customer
Requests eBook Print on Demand
Author
Production Process
Authors Enquiry
Phone call
1.0
Manage Enquiry
Initiate Payment
Author
Check sent
Authors royalty
Update Payment
D1
Payment details
End of each quarter
Author Details
2.0
Manage Sales and Printing
Printed eBook is given
Sales number report
D2
Promotion records
Record Confirmation
PI System
Royalty Compensation form


Sales number report
PI System
Record Confirmation
Royalty Compensation form
D2
Promotion records
3.0
Manage Payment and Royalties
Payment Confirmation
Author information
D3
Sales record
Writes check manually
Sale Confirmation
Royalties calculated
Send Corrections
Invoice details
Management
Sales records combined manually
Manually checked bin for status
D4
Production information
4.0
Manage Production and Promotion
Progress Details
Send Manuscript
Corrections updated
eBook ID created
D5
eBook records
Phone call
Customer
5.0
Manage Purchase
Initiate purchase process
Invoice details
Selected download format
Contacted regarding purchasing ebook
Customer ID created
D6
Customer details
Account created confirmation
Registration Form
Customer
6.0
Manage Customer Registration
D7
Purchase records
Update customer details with ebook ID

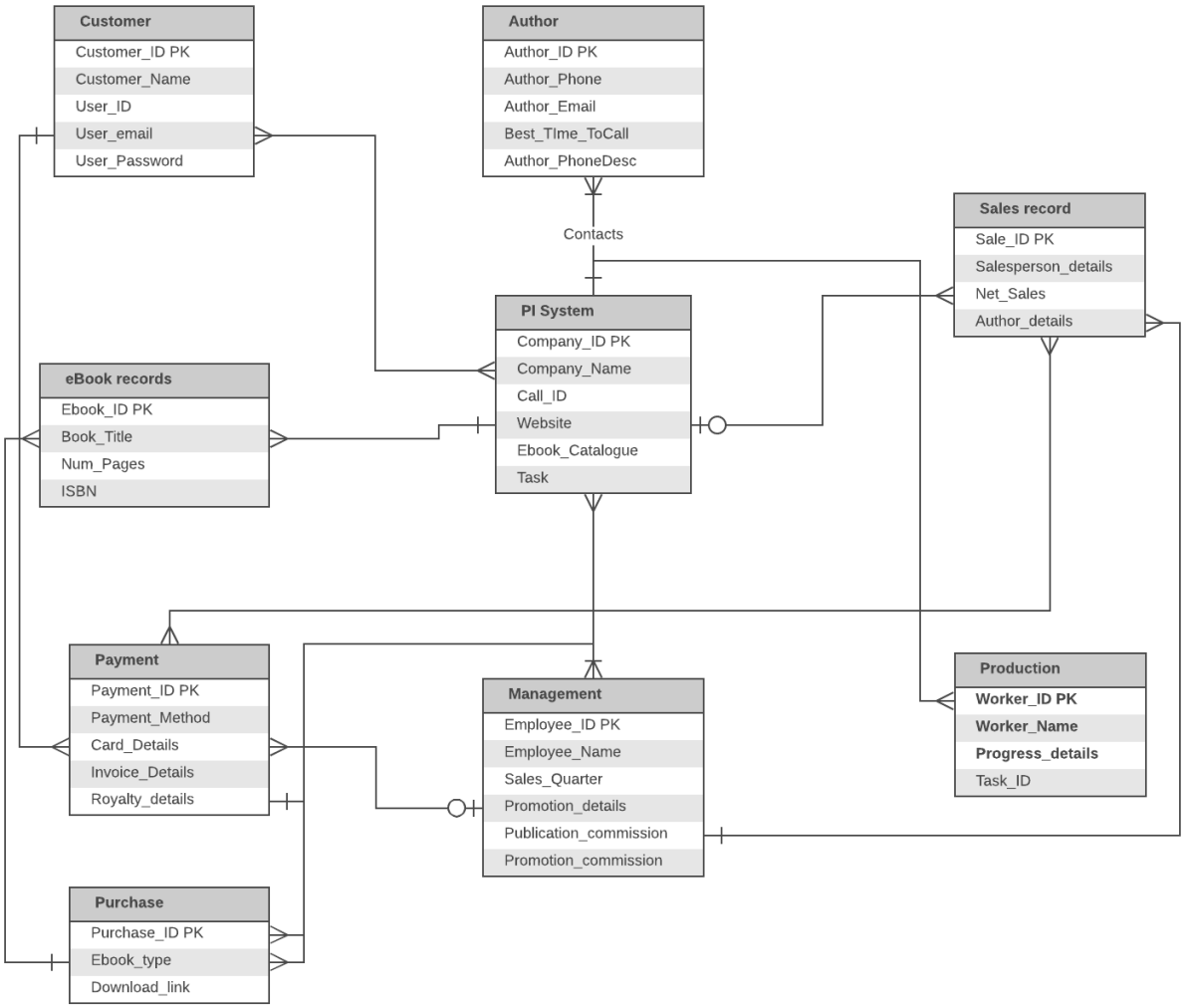

Customer
Phone call
D5
eBook records
5.0
Manage Purchase
Initiate purchase process
Invoice details
Selected download format
Contacted regarding purchasing ebook
Customer ID created
D6
Customer details
Account created confirmation
Customer
Registration Form
6.0
Manage Customer Registration
D7
Purchase records
Update customer details with ebook ID
Customer Details
Calendar
End of 30 days
7.0
Report generated with customer mailing list
Generate report
Member details in report
Reminder to pay
Customer
Management
Requests quarterly/annually ebook purchase history
Requests member details
Author

DFD Lvl 1:


5.0
Manage Purchase
eBook selected
5.1
Ebook Purchase
D5
eBook records
D7
Purchase records
Purchases
selected download format
5.2
Choose Ebook Type
5.3
Process Download link
Customer
Customer details
5.4
Email Customer
Download linked emailed

ERD Diagram

CURRENT SYSTEM



Time Contribution Statement

TIME CONTRIBUTION STATEMENT

Tasks	Team Members			
	A:	B:	C:	D:
Team meetings	15 hours	15 hours	15 hours	15 hours
Tutor feedback meetings (preparation, attending, follow up)	1 hour	1 hour	1 hour	1 hour
Team management and administration	2 hours	2 hours	2 hours	2 hours
Research Searching and analysing	19 hours	19 hours	25 hours	25 hours
Model Development Analysis, evaluation, development, reviewing	5 hours	5 hours	5 hours	5 hours
Team Documents (e.g. Assignment report) Preparing and Writing	20 hours	22 hours	25 hours	25 hours
Reviewing Checking and correcting other's work	5 hours	4 hours	6 hours	6.5 hours
Total hours for assignment/project	67 hours	68 hours	79 hours	79.5 hours

Member's Name	Members Signature
A: Naveen Chandrasekaran	Naveen
B: Sarah Grover	Sarah
C: Abishek Balakrishnan Selvam	Abishek
D: Shivang Savjibhai Bajaniya	Shivang
End date of Period	22-10-2018
Tutor's Signature	
Date	