Group 20

Assignment Report - Homework 2

ID2207 HT25 Modern Methods in Software Engineering

Lecturer: Mihhail Matskin

Assignment Report - Homework 2

Group 20

16th September 2025

Abstract

This document outlines the software requirements for a new internal management system for the event planning company, `Swedish Events Planners (SEP)`. Analyzing the provided business case, this report serves as the foundational blueprint for the system's future design and development. The document first defines key terms and identifies system actors. It then illustrates core workflows using scenarios and formal use cases, and concludes by specifying essential non-functional requirements to ensure the system is robust, secure, and user-friendly.

1 Glossary

Swedish Events Planners (SEP)	A newly launched event planning company based in Stockholm. Its primary business is organizing various business events, such as workshops, conferences, and summer schools. `SEP` is responsible for managing all event details from start to finish, providing a complete "A to Z" service.
United Swedish Solutions (USS)	A software solutions company with a skilled team of business analysts, software developers, and other specialists. This company won the tender to design and develop the internal management system for `SEP`.
HR Team	Comprised of the `Senior HR Manager (Simon)` and `HR Assistant (Maria)`, this team is responsible for managing staff recruitment and outsourcing when required. The team receives and processes recruitment or outsourcing requests initiated by department managers.
Customer Service Officer	A member of the customer service team who serves as the initial point of contact with clients. Their primary responsibility within the system is to fill out and submit the `"Event Planning Request"` form with the client's initial requirements.
Senior Customer Service Officer	The manager of the customer service team (Janet) who is responsible for reviewing requests submitted by `Customer Service Officers`. This role has the authority to reject requests deemed unfeasible or to forward them to the `Financial` and `Administration Managers` for further review. They are also responsible for creating and managing client records.
Client Record	A core record within the system used to store information for all current and past clients. It contains the details of all events managed by `SEP` for that client. The system must support the management and searching of these records.
	Continued

Financial Manager	The head of the financial department (Alice) who acts as the first reviewer in the event approval process, responsible for evaluating the client's proposed budget and providing feedback. This role also handles budget negotiations with clients, processes budget adjustment requests, and can apply discounts for `frequent clients`.
Administration Manager	The head of the administration department (Mike) who holds the final decision-making authority in the initial approval process. Based on feedback from the `Financial Manager` and their own assessment, this role approves or rejects an `Event Planning Request`.
Marketing Team	Comprised of the `Marketing Officer (David)` and `Marketing Assistant (Emma)`, this team is responsible for attracting new clients by attending conferences and business gatherings. Within the system, they can view client records and generate reports on event earnings and clients.
Production Manager	The head of the production department (Jack), responsible for managing all production-related aspects of an event, such as decorations, food, and filming. This role checks staff schedules, requests additional resources from the `HR team` when there is a shortage, applies for budget adjustments from the `financial department`, and creates and assigns tasks to the various `sub-teams` under their management.
Service Manager	The head of the services department (Natalie), responsible for all food and beverage services during an event. Their responsibilities mirror those of the `Production Manager`, including assessing staffing needs, initiating recruitment requests, applying for budget adjustments, and assigning tasks to the chef and waiter `sub-teams`.
Sub-team	Specialized groups within the `Production` and `Services` departments responsible for specific professional tasks. `Sub-teams` in the `Production` department include photography, audio, graphic design, decorations, and network support. `Sub-teams` in the `Services` department include chefs and waiters.
Vice President	A member of top management (Charlie) who is responsible for generating summary reports on employee utilization, as well as client and event statistics.
Event Planning Request	The starting point of the entire business workflow, initiated in the system by a `Customer Service Officer` after initial contact with a client. This formal request requires multi-level approval from the `Senior Customer Service Officer`, `Financial Manager`, and `Administration Manager`. A sample form includes fields for event type, dates, preferences, and expected budget.
Business Meeting	A meeting with the client organized by the `Senior Customer Service Officer` after an `Event Planning Request` has been initially approved. Managers from the production, financial, and services departments attend to discuss the client's detailed preferences and planned budget.
Recruitment Request	A formal request initiated by a `Production` or `Service Manager` and sent to the `HR team` when additional staff is needed due to scheduling conflicts or resource shortages. This request aims to resolve staffing issues through either long-term hiring or short-term outsourcing. A sample form includes fields for contract type, requesting department, required experience, and job description.
Task	A work item assigned by a `Production` or `Service Manager` to one of their respective `sub-teams`. Upon receiving a task, the `sub-team` must develop a plan and provide feedback on any requirements for an additional budget. System wireframes show the interface for assigning and viewing tasks.

Continued

Application Status	An indicator that tracks the lifecycle stage of an `Event Planning Request` within the system. Key statuses include "open" during the initial planning phase, "`in progress`" after budget and staffing issues are resolved, and "`closed`" after the event has been finalized and archived.
Financial Request	A request for a budget adjustment submitted by a `Production` or `Service Manager` to the `Financial Manager`. This is initiated when a `sub-team` determines that the client's initial budget is insufficient to meet their stated requirements. The `Financial Manager` then uses this request to negotiate a revised budget with the client. A sample form includes fields for the project reference number, required amount, and the reason for the request.
System View	The customized user interface and set of accessible functionalities that are tailored to each user's role and responsibilities. This ensures that every role (e.g., `Customer Service`, `Financial Manager`) has a different view of the system that is appropriate for their specific tasks.
Use Case: Manage Client Records	A system function that allows authorized users, such as the `Senior Customer Service Officer` and the `Marketing Team`, to create, search, view, and update client information. The goal of this use case is to maintain an accurate and complete client database.
Use Case: Generate Management Reports	A system function that allows authorized management personnel, such as the `Vice President`, `Administration Manager`, and `Marketing Team`, to generate various business reports on demand. Examples include reports on employee utilization and event earnings statistics, which are used to support decision-making.
Use Case: Create and Route Event Planning Request	A core system function that allows a `Customer Service Officer` to enter a client's request and route it between the `Senior Customer Service Officer`, `Financial Manager`, and `Administration Manager` for review. The goal of this use case is to initiate and complete the initial approval workflow for an event.
Use Case: Process Staffing Request	A system function that allows a `Production` or `Service Manager` to submit a recruitment request, which is then received, processed, and updated by the `HR Team`. The goal of this use case is to resolve the staffing and resource requirements for a project.
Use Case: Manage and Assign Sub-team Tasks	A system function that allows `Production` and `Service Managers` to create, assign, and track tasks for their respective `sub-teams`. This use case also includes the functionality for `sub-team` members to view and update their assigned tasks.
Use Case: Process Budget Adjustment	A system function that allows a department manager to submit a request for a budget adjustment, which is then reviewed by the `Financial Manager`. The goal of this use case is to formally manage the adjustment and approval of the event budget when project requirements change.
Use Case: Review Event Request	A system function that allows authorized personnel, such as the `Senior Customer Service Officer` and `Financial Manager`, to examine a submitted event planning request. This process involves verifying request details and client information to assess its feasibility and completeness. It serves as the primary evaluation step before a request is approved, rejected, or sent back for rework.
Use Case: Approve/Reject Event Request	A system function for the `Administration Manager` to provide the final decision on an event planning request after it has been reviewed. The manager can either approve the request, allowing it to proceed, or reject it. This use case represents the terminal step in the approval workflow.

Continued

Use Case: Manage Employee Records	A foundational system function that allows authorized users, such as `Department Managers` and the `HR Team`, to create, view, and update employee profiles and information. This use case serves as a central data source for other functions like task assignment (`Manage &Assign Sub-team Tasks`) and scheduling.
Use Case: Submit Sub-team Plan	A system function that enables a `Sub-team Member` to formally submit a completed plan or task deliverable. This action is a required component of the overall task management workflow, signaling the completion of assigned work to the relevant manager.
Use Case: Manage Staff Scheduling &Assignments	A system function that enables a `Department Manager` to assign specific employees to events or projects and manage their work schedules. This use case relies on accessing the central employee database (`Manage Employee Records`) to retrieve staff information and availability.
Use Case: Client Record Not Found	An `alternative scenario` within the `"Review Event Request"` process. This use case is triggered when the reviewing officer cannot find the client's record in the system, representing an exception that must be handled before the review can be completed.
Use Case: Invalid/Incomplete Request Data	An `alternative scenario` within the `"Review Event Request"` process. This use case is triggered when the submitted event request contains errors, is missing required information, or is otherwise invalid. It represents an exception that requires correction before the review can proceed.
Use Case: Request Rework Required	An `alternative outcome` for the `"Review Event Request"` and `"Approve/Reject Event Request"` use cases. This function is triggered when a request is fundamentally sound but requires specific modifications. It formally sends the request back to the originator for revision and resubmission.

2 Identified Actors

The following actors have been identified who will interact with the system:

1. **Customer Service Officer**

   A member of the customer service team who serves as the initial point of contact with clients. Their primary responsibility is to create and enter the details of a new `"Event Planning Request"` into the system and forward it for review.

2. **Senior Customer Service Officer**

   The manager of the customer service team who reviews, updates, and forwards event planning requests received from the `Customer Service Officer`s. This role has the authority to reject a request directly. They are also responsible for creating and managing `Client Record`s and organizing business meetings with clients.

3. **Administration Manager**

   The manager who reviews event planning requests and, based on feedback from the `Financial Manager`, makes the final decision to approve or reject them. This role can also view employee records and generate various reports on events, employees, and clients.

4. **Financial Manager**

   Acts as the first reviewer for new event requests, providing feedback on the estimated budget. This role negotiates budget adjustments with clients, manages discounts for frequent clients, and can view client and employee records.

5. **Production Manager**

   Manages all production-related aspects of an event (e.g., decorations, filming, audio). This role receives and updates event requests, creates and assigns tasks to production `sub-teams`, initiates resource requests to the `HR team`, submits budget adjustment requests to the financial department, and views staff schedules.

6. **Service Manager**

   Manages all food and beverage services for an event. Their responsibilities and system interactions mirror those of the `Production Manager`, including updating requests, assigning tasks to service `sub-teams`, requesting resources from `HR`, and requesting budget adjustments.

7. **Sub-team Member**

   A specialist within the Production or Services department (e.g., Decorating Architect, Top Chef). This role receives assigned tasks from their respective manager, reviews the details, and updates the task with their work plan and comments, especially noting if an extra budget is required.

8. **HR Team**

   Responsible for managing staff recruitment and outsourcing. This actor receives and processes requests for new employees or external resources from department managers. They can also search and view employee records and create/publish job advertisements using the system.

9. **Marketing Team**

   Responsible for attracting new clients. Within the system, this actor can search and view `Client Record`s and generate reports on event earnings and clients to support their marketing efforts.

10. **Vice President**

    A member of top management who uses the system to generate high-level summary reports regarding employee utilization, as well as client and event statistics.

3 Identified Scenarios

3.1 Create Event Planning Request Scenario

Scenario name	`Create Event Planning Request`
Participating actor instances	New Client, `Customer Service Officer`, `Senior Customer Service Officer`
Flow of events	1. A new client contacts `SEP` to request planning for a business conference. 2. The `Customer Service Officer` opens the event planning system and selects Create New Request. 3. The officer enters the following details provided by the client:ă • Event type: Conference • Start date: October 10, 2025 • End date: October 12, 2025 • Preferences: Filming, decorations, food and beverages 4. The system validates the input fields to ensure all required data is present and correct. 5. Upon successful validation, the officer submits the request. 6. The system forwards the request to the `Senior Customer Service Officer` for review and further processing.

3.2 Review and Approve Budget Scenario

Scenario name	`Review and Approve Budget`
Participating actor instances	`Senior Customer Service Officer`, `Financial Manager`, Client, `Administration Manager`
Flow of events	1. The `Senior Customer Service Officer` updates the `Event Planning Request` in the system, including the clients preferences and proposed budget. 2. The client proposes a budget of 250,000 SEK, which includes premium decorations, custom catering, and professional filming services. 3. The request is forwarded to the `Financial Manager` for review. 4. The `Financial Manager` logs into the system and opens the budget details of the event request. 5. The system automatically flags the request with a warning: Budget exceeds department threshold (200,000 SEK) and marks it as Requires Negotiation. 6. The `Financial Manager` clicks Initiate Negotiation, and the system generates a budget negotiation form. 7. Using the systems internal messaging feature, the `Financial Manager` contacts the client to explain the issue and suggests adjustments. 8. The client responds through the system, agreeing to reduce the budget to 210,000 SEK. 9. The `Financial Manager` updates the budget information and adds a note.

	10. The `Financial Manager` clicks Submit Review, and the system forwards the updated request to the `Administration Manager`. 11. The `Administration Manager` receives a notification, logs in, and reviews the feedback before making the final decision.

3.3 Assign Tasks to Sub-teams Scenario

Scenario name	`Assign Tasks to Sub-teams`
Participating actor instances	`Production Manager`, `Sub-team` Members, `HR Team`
Flow of events	1. The `Event Planning Request` has been approved by the `Administration Manager` and marked as Ready for Execution in the system. 2. The `Production Manager` logs into the system and opens the event request details. 3. Based on the clients preferences (e.g., filming, decoration, audio), the `Production Manager` creates individual tasks for each relevant `sub-team`. 4. Each task includes a description of the required service, expected deliverables, and deadlines. 5. The system sends notifications to the assigned `sub-teams` (e.g., filming team, decoration team, audio team). 6. `Sub-team` members log into the system, review their assigned tasks, and begin preparing their execution plans. 7. Each `sub-team` submits their plan through the system, including any additional budget needs or material requirements. 8. The `Production Manager` reviews the submitted plans and identifies a potential resource shortage in the decoration team due to overlapping events. 9. The `Production Manager` initiates a resource request to the `HR Team`, specifying the need for temporary staff or outsourcing. 10. The `HR Team` receives the request and begins processing recruitment or outsourcing options. 11. Once staffing issues are resolved, the `Production Manager` updates the task statuses to Confirmed and sets the event status to In Progress.

3.4 Process Staffing Request Scenario

Scenario name	`Process Staffing Request`
Participating actor instances	`Production Manager`, `HR Team`
Flow of events	1. `SEP` receives a client event request, which is approved by the `Administration Manager`. The event status is set to Ready for Execution. 2. The `Production Manager` logs into the system and opens the event details to begin assigning tasks to `sub-teams`. 3. While reviewing availability, the `Production Manager` discovers that the decoration team is short-staffed due to overlapping events.

4. Since the event is scheduled to begin in three days, the manager determines that the staffing request is urgent.
5. The `Production Manager` opens the `Staffing Request` form in the system and fills in the following details:

- Event ID: EVT-2025-0915
- Department: Production
- Request Type: Outsourcing
- Number of Staff Needed: 2 decorators
- Required Skills: Venue setup, lighting design
- Reason: Scheduling conflict, original team unavailable
- Priority: Emergency

6. The manager submits the form. The system automatically flags the request as Urgent and sends an immediate notification to the `HR Team`.
7. The `HR Team` receives the alert and begins processing the request with high priority. They contact external vendors to check for available personnel.
8. Within one hour, `HR` updates the request status to In Progress and sends feedback to the `Production Manager`: Vendor contacted, confirmation expected tonight.
9. The next morning, `HR` updates the status to Resolved and attaches the list of outsourced staff and their arrival schedule.
10. The `Production Manager` confirms the staffing arrangement in the system and reassigns the decoration tasks to the new team members. The event status is updated to In Progress.

4 Identified Use Cases

4.1 Use Case Diagram

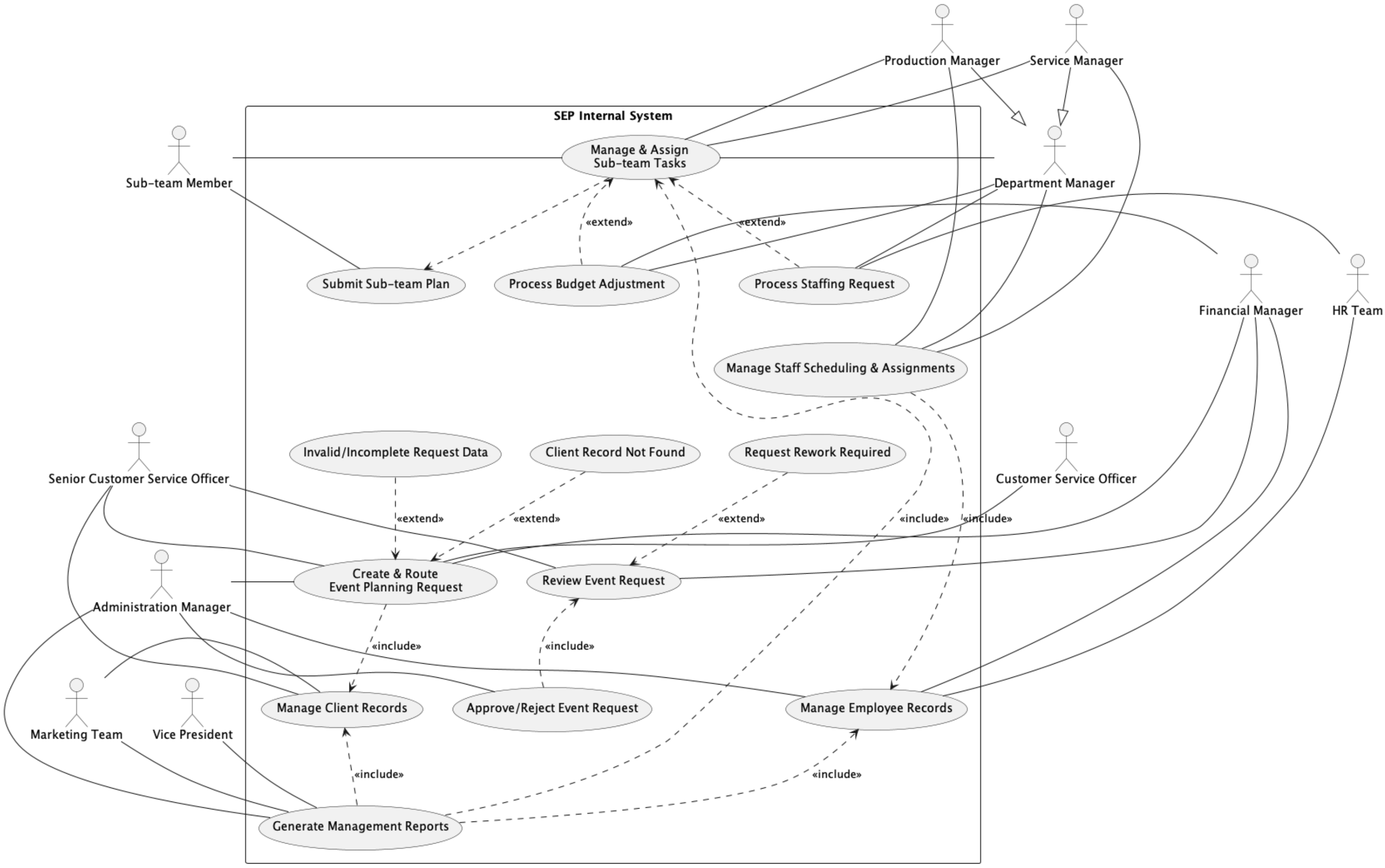

Figure 1: Use Case Diagram of SEP Internal System

4.2 Use Case Descriptions

Create Event Planning Request

Use case name	`Create Event Planning Request`
Participating actors	• `Customer Service Officer` • `Senior Customer Service Officer`
Flow of events	1. `Customer Service Officer` logs into the system. 2. System authenticates the officer and provides access to the request form. 3. Officer enters the event details: type, start and finish dates, and preferences (decorations, filming, food, beverages, etc.). 4. Officer submits the request. 5. System validates the input and creates a new event planning request record. 6. System routes the request to the `Senior Customer Service Officer` for further review and approval.
Entry condition	• `Customer Service Officer` logs into the system. • System validates the officers credentials. • Officer accesses the event planning request functionality.
Exit conditions	• The request is successfully created and routed to the `Senior Customer Service Officer` for review. • If data is missing or invalid, the request is rejected.
Alternative Flows	• **AF1: Client record not found** – When the `Senior Customer Service Officer` reviews the request, the system cannot locate the client record. – The officer must first create a new client record before the request can proceed to further review.
Exceptions	• **EX1: Invalid/Incomplete Request Data** – If the entered details are missing (e.g., no event dates) or invalid (e.g., wrong format), the system rejects the request and prompts correction.

Review and Approve Budget

<table>
<tr><td>Use case name</td><td>Review and Approve Budget</td></tr>
<tr><td>Participating actors</td><td>Financial Manager
Senior Customer Service Officer
Administration Manager</td></tr>
<tr><td>Flow of events</td><td>Financial Manager opens the request from the work items list.
System displays the request details: client estimate, cost breakdown, historical discounts, and prior comments.
Financial Manager reviews the budget details and compares with internal limits and cost models.
Financial Manager adds feedback/commentse.g., adjustments, conditions, or discount suggestions.
Financial Manager selects an action: Approve, Request negotiation, or Return for completion.
System updates the request status and attaches the financial feedback.
If approved, System forwards to the Administration Manager and sends notifications to involved parties.</td></tr>
<tr><td>Entry condition</td><td>Financial Manager logs into the system and has the required permissions.
An Event Planning Request with clients estimated budget is in status Pending Financial Review.
All baseline event details (type, dates, preferences, Client Record) are available to view.</td></tr>
<tr><td>Exit conditions</td><td>The request is updated with financial feedback and forwarded to the Administration Manager for a decision; or
A budget negotiation process is initiated due to limits being exceeded; or
The request is returned to the Senior Customer Service Officer due to missing/invalid financial data.</td></tr>
<tr><td>Alternative Flows</td><td>AF1: Budget exceeds threshold
At step 3, if the proposed budget exceeds the internal financial threshold, the Financial Manager initiates a negotiation with the client.
After agreement, the budget is updated and the review continues.</td></tr>
</table>

Exceptions	• **EX1: Missing or invalid financial data** – If required budget information is incomplete or contains errors, the system rejects the financial review and sends the request back to the Senior Customer Service Officer for correction.

Assign Tasks to Sub-teams

Use case name	Assign Tasks to Sub-teams
Participating actors	• Production Manager / Service Manager • Sub-team Leaders • HR Team
Flow of events	1. Production/Service Manager opens the approved event request in the system. 2. Manager reviews client requirements and event specifications. 3. Manager creates tasks for each relevant sub-team, detailing activities, deadlines, and budget allocations. 4. System validates the task details and saves them. 5. System notifies the assigned sub-teams of their new tasks. 6. Sub-team Leaders review the tasks and prepare their activity plans. 7. Sub-teams submit their plans, including resource needs and additional budget requests, through the system. 8. System records the submitted plans and links them to the event request.
Entry condition	• Event Planning Request has been approved by Administration and Financial Managers. • The request status is set to Open. • Production/Service Manager logs into the system with the proper permissions.
Exit conditions	• Tasks are successfully created and assigned to all relevant sub-teams. • Sub-teams submit their plans (activities, resources, budget needs), and the system records them. • If shortages are detected, an HR request is generated.

Alternative Flows	**AF1: Process Budget Adjustment** - During task planning, a sub-team identifies insufficient budget for their assigned activities. - The `Production/Service Manager` submits a Budget Adjustment request to the `Financial Manager`.
Exceptions	**EX1: Sub-team unavailable** - If a `sub-team` cannot accept a task due to schedule conflict, the system notifies the manager. The manager must reassign tasks or adjust timelines.

Process Staffing Request

Use case name	`Process Staffing Request`
Participating actors	- Department Manager (`Production Manager` or `Service Manager`) `HR Team` (`HR` Manager, `HR` Assistant)
Flow of events	1. Department Manager navigates to the `Staffing Request` function in the system. 2. Department Manager fills in the staffing request, including job roles, number of people, duration, and justification. 3. The system validates the data (mandatory fields and correct formats). 4. The system generates a formal staffing request and submits it to the `HR team`. 5. The `HR team` receives the request and views it in their work items list. 6. `HR team` evaluates the request and initiates either a recruitment or outsourcing process. 7. `HR team` updates the request status in the system (e.g., In Progress, Completed, Rejected). 8. The system notifies the Department Manager of the result and logs it into the event record.
Entry condition	- The Department Manager identifies a shortage of staff while assigning or executing tasks. - The `Event Planning Request` is in Open/In Progress status. - The Department Manager has the permission to submit a `Staffing Request`.

Exit conditions	• A formal `Staffing Request` (hiring or outsourcing) is created and submitted to the `HR team`. • The `HR team` receives and processes the request. • The `HR team`s decision is communicated back to the Department Manager.
Alternative Flows	• **AF1: Request Rework Required** – If `HR` determines the submitted staffing request lacks sufficient detail (e.g., missing job role or duration), they return the request to the Department Manager for rework.
Exceptions	• **EX1: Invalid request data** – If mandatory fields (e.g., number of staff) are missing or incorrectly formatted, the system rejects submission and prompts correction.

5 Non-functional Requirements

Category	Requirement Description
Security	• The system must implement role-based access control to restrict functionality based on user roles (e.g., `Customer Service Officer`, `Financial Manager`, `HR Team`). • Sensitive financial data and employee records should only be accessible to roles with explicit permissions, such as the `Financial Manager` and `HR Team`. • Only authorized managers should have the permissions to approve, reject, or request negotiations for event requests.
Usability	• The system shall provide a unique and intuitive user interface tailored to the specific tasks of each role. • Forms for creating requests (e.g., Event Planning, Recruitment) must be clear, easy to navigate, and provide real-time data validation to prevent common user errors. • Managers must have a clear overview of their pending tasks and work items to ensure timely processing.

Continued

Category	Requirement Description
Performance	• The system must support the planning and management of multiple parallel events simultaneously without performance degradation. • Report generation for clients, employees, or finances should be completed within a reasonable timeframe (e.g., under 10 seconds) even with a large dataset. • System response time for common actions like submitting a form or viewing a `Client Record` should feel instantaneous to the user (e.g., under 2 seconds).
Reliability	• The system must be highly available during standard Swedish business hours (e.g., 99.5% uptime). • In the event of an error during a critical transaction (e.g., saving a request), the system must ensure no data is lost and provide a clear error notification to the user. • The system must maintain a persistent and complete history of all organized events, clients, and staff assignments.
Scalability	• The system architecture must be scalable to support a growing number of employees within the organization. • The system must be able to handle an increasing volume of data related to new clients and events over several years without a significant loss in performance.
Auditability	• All critical actions, such as creating a request, approving a budget, or assigning a task, must be logged with a timestamp and the ID of the user who performed the action. • The system must provide a traceable history for each event request, showing all status changes, comments, and decisions made by different managers throughout the workflow.

Bibliography

[1] ID2207 HT25 Modern Methods in Software Engineering Course Staff. (2025). *Business Case Description For Homework 2, 3 and 4* [Course material]. KTH Royal Institute of Technology, ID2207 HT25 Modern Methods in Software Engineering.