MAY 23, 2024

ASSIGNMENT 2
SAND 6221

LWANDLE CHAUKE
ST10380788

QUESTION 1

1.1.

The Agile Approach to the development of the airport customer relations management system:

What is agile development?

The Agile approach to information system development emphasises flexibility and rapid response to anticipate new and changing requirements. It is characterised by its iterative and incremental nature, which emphasises flexibility, customer collaboration, and the ability to adapt to changes throughout the development process. This methodology breaks down the project into smaller, manageable increments or iterations, allowing for continuous testing and integration of new features.

Key features of the agile development approach:

1. Iterative and Incremental Development: Agile employs short development cycles, known as iterations or sprints, to progressively enhance the software's functionality. Each iteration results in a potentially shippable product increment, allowing for continuous assessment and improvement.

2. Customer Collaboration: Continuous feedback from stakeholders is a cornerstone of Agile. By involving customers and stakeholders throughout the development process, Agile ensures that the final product aligns closely with user requirements and expectations. Regular feedback sessions help to refine and adjust the project scope based on real-world input.

3. Adaptive Planning: Agile plans are designed to be flexible and accommodate changes even in the later stages of the development process. This adaptive planning allows the project to respond to new requirements and changes in priorities without significant disruption.

4. Continuous Improvement: Agile promotes a culture of continuous improvement through regular retrospectives. During these sessions, teams reflect on their processes, identify areas for enhancement, and implement changes to improve efficiency and quality.

5. Flexibility and Adaptability to Change: Agile is inherently flexible and able to adapt to new requirements and changes in the project environment. This flexibility is crucial for projects with evolving needs and helps ensure that the final product remains relevant and useful.

In the context of the Airport Customer Relations Management System project, these Agile features would facilitate close collaboration with airport management and stakeholders, ensuring their evolving needs and requirements are met. Regular meetings and feedback sessions would gather input and make necessary adjustments, while iterative development would allow for continuous testing and

integration of new features. Overall, Agile's emphasis on flexibility, customer collaboration, and continuous improvement would ensure the delivery of a high-quality, customer-focused system that enhances the airport's ability to provide a positive experience for its visitors.

How an agile development approach will impact your project management approach:

Adopting an Agile development approach significantly impacts project management in various ways. The following key changes illustrate this shift:

1. Breaking Down Development into Sprints: Agile divides the project into smaller, manageable chunks called sprints. Each sprint typically lasts a few weeks and focuses on completing specific tasks, allowing the team to deliver functional parts of the system incrementally. This approach ensures that progress is continuously made and that each segment of the project can be reviewed and improved upon regularly.

2. Regular Meetings and Feedback Sessions (Scrum): Agile employs regular meetings, including daily stand-ups, sprint planning, and sprint reviews, to maintain continuous communication and feedback. These sessions help keep the team aligned, address issues promptly, and ensure that stakeholder feedback is consistently integrated into the project.

3. Embracing Change and Adapting to New Requirements: Agile’s flexibility allows the project team to adapt to new requirements as they emerge. This is particularly beneficial in dynamic environments where customer needs and market conditions can change rapidly. The team can adjust the project scope and priorities by being open to change to better meet the evolving demands.

Additionally, the Agile approach offers several benefits that enhance project management:

- Enhanced Communication and Collaboration: Frequent communication between the development team and stakeholders through regular meetings fosters transparency and alignment, ensuring that everyone is informed and on the same page.
- Flexibility in Scope Management: Agile's iterative process allows for regular reassessment and adjustment of the project scope based on the latest requirements and feedback, ensuring that the project remains relevant and valuable.
- Risk Mitigation: Continuous delivery of small increments helps in the early detection of issues and risks, allowing for timely resolution and reducing the chances of project failure.
- Focus on Customer Satisfaction: By involving customers and stakeholders throughout the development process, Agile ensures that the end product meets their needs and expectations, leading to higher satisfaction.
- Time Management and Productivity: Time-boxed iterations and sprints create a disciplined approach to time management, promoting productivity and ensuring steady progress towards project milestones.

The Agile approach involves working closely with airport management and stakeholders to meet their evolving needs. It breaks the project into smaller parts for continuous testing and integration of new features. This allows for regular adjustments and ensures a customer-focused final product. Agile development shifts the focus to a flexible and adaptive methodology, prioritising customer requirements and continuous adaptation to change, fostering regular communication and collaboration with stakeholders.

Motivation of Agile Approach:

The Agile approach is ideal for developing the Airport Customer Relationship Management System due to its flexibility, adaptability, and customer-centric focus. Agile's iterative cycles and incremental delivery align with the project's goals, enabling the team to deploy functional parts of the system early and provide immediate benefits to the airport and its users. This approach improves project efficiency and increases the chances of meeting the airport's target for early completion, potentially earning a bonus for the project team.

Agile's emphasis on customer involvement and satisfaction ensures the system is developed in close alignment with the needs and preferences of both airport management and passengers. Regular stakeholder engagement and continuous feedback loops maintain high levels of visitor satisfaction, a key airport objective.

Agile's iterative nature accommodates the executive's changing preferences without disrupting the project timeline. Clear priorities and open communication manage expectations and deliver a system meeting evolving requirements. Agile's commitment to continuous improvement and quality assurance ensures the system performs flawlessly and meets critical operational needs, making it a highly suitable approach for this project.

Examples:

- Agile's iterative approach allows for incremental delivery of functional parts of the system, providing immediate benefits to airport management and passengers. For instance, the team can deliver a functional passenger information module in the first sprint, followed by additional modules in subsequent sprints.
- Regular feedback sessions and Scrum meetings ensure stakeholders are involved and informed throughout development. For example, airport management can provide feedback on the system's user interface during a sprint review, allowing the team to adjust before the next sprint.
- Agile's flexibility enables the team to adapt to changing requirements and priorities, such as the sudden need for additional features or changes in airport operations. For instance, if airport management requests a new feature to track passenger flow, the team can adjust the project scope and prioritise the feature in the next sprint.

1.2.

System Vision Document: Airport Customer Relationship Management System

Problem Description:

The local airport's upgrade to accommodate international flights has created a pressing need for effective customer relationship management. With an influx of tourists expected, maintaining high levels of visitor satisfaction is crucial. However, the current lack of a comprehensive system for providing timely information, seamless navigation, and emergency assistance poses a significant challenge. Furthermore, accommodating potential changes from an indecisive executive adds complexity to the project.

System Capabilities:

The following capabilities are required:

- Provide airport information and services directory
- Offer GPS navigation to various amenities and boarding gates
- Enable instant connection to medical and ambulatory services
- Provide personalized services and offers based on passenger preferences and behaviour
- Integrate with existing airport systems and stakeholders
- Support mobile devices for easy access
- Allow passenger ratings and feedback
- Include comprehensive airport operations management

Business Benefits:

The primary business benefit of these capabilities will be to enhance the overall passenger experience, leading to:

- Increased passenger satisfaction and loyalty
- Improved airport operations and efficiency
- Increased revenue through personalized services and offers
- Competitive advantage and market leadership
- Increased passenger retention and repeat business
- Enhanced airport reputation and brand
- Improved passenger safety and security
- Increased airport staff productivity and efficiency

QUESTION 2

2.1.

Functional Requirements:

1. Information Updates: The system must provide real-time updates on flight schedules, airport amenities, and services available at the airport.
2. Navigation Capability: The system must offer GPS navigation to various amenities and boarding gates within the airport, ensuring easy accessibility for visitors.
3. Medical Emergency Services: The system must enable instant connection to medical and ambulatory services in case of any medical emergency, ensuring prompt assistance to visitors.

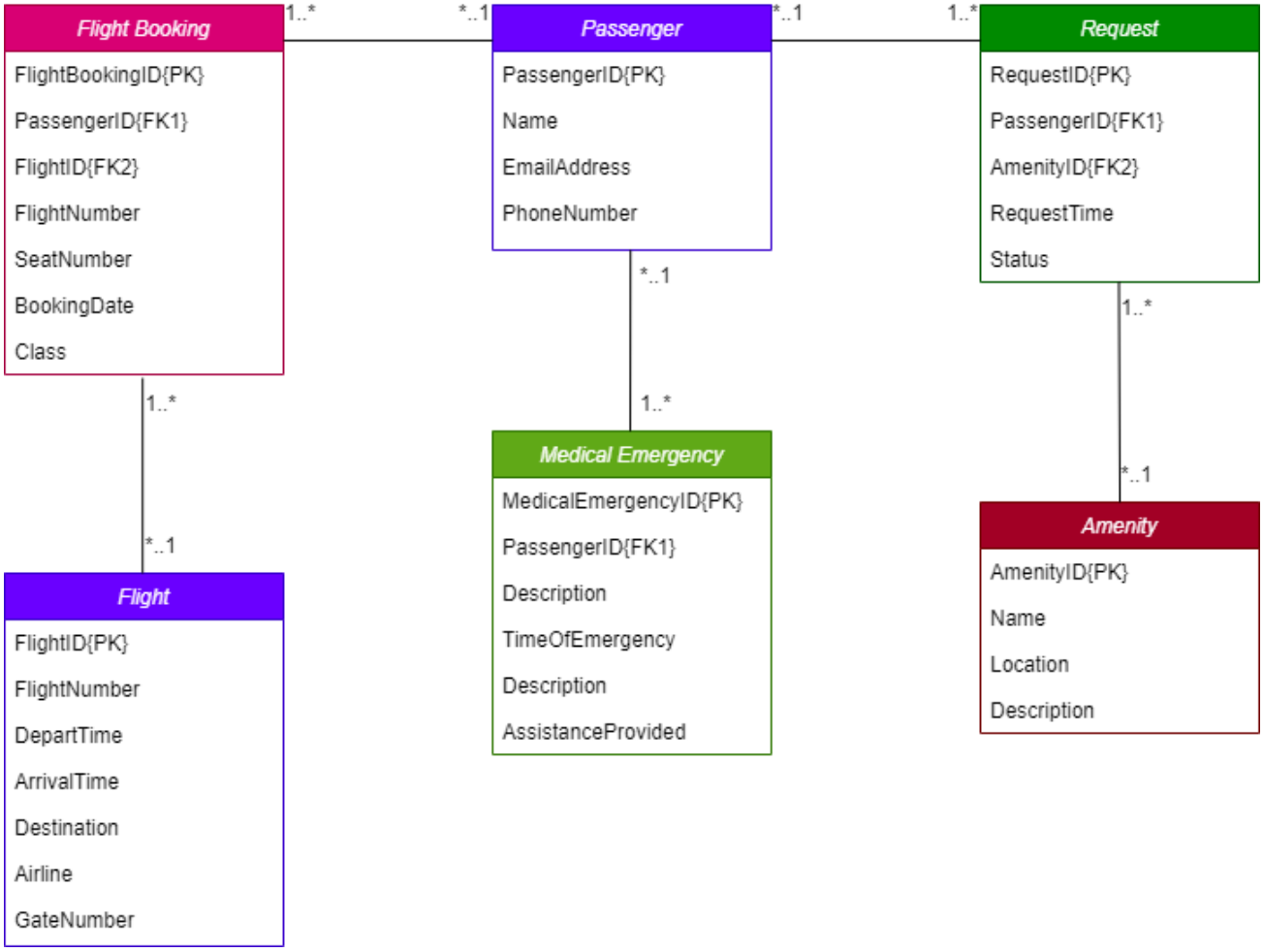
2.2.

Non-functional Requirements:

1. Security: The system must adhere to the highest security standards, encrypting sensitive user data and ensuring protection against potential cyber threats, to maintain the trust and confidence of airport visitors.
2. Usability: The system should be user-friendly and intuitive, catering to a diverse range of users, including international travellers who may not be familiar with the airport layout or the local language. It should also accommodate users with varying levels of technological proficiency.

QUESTION 3

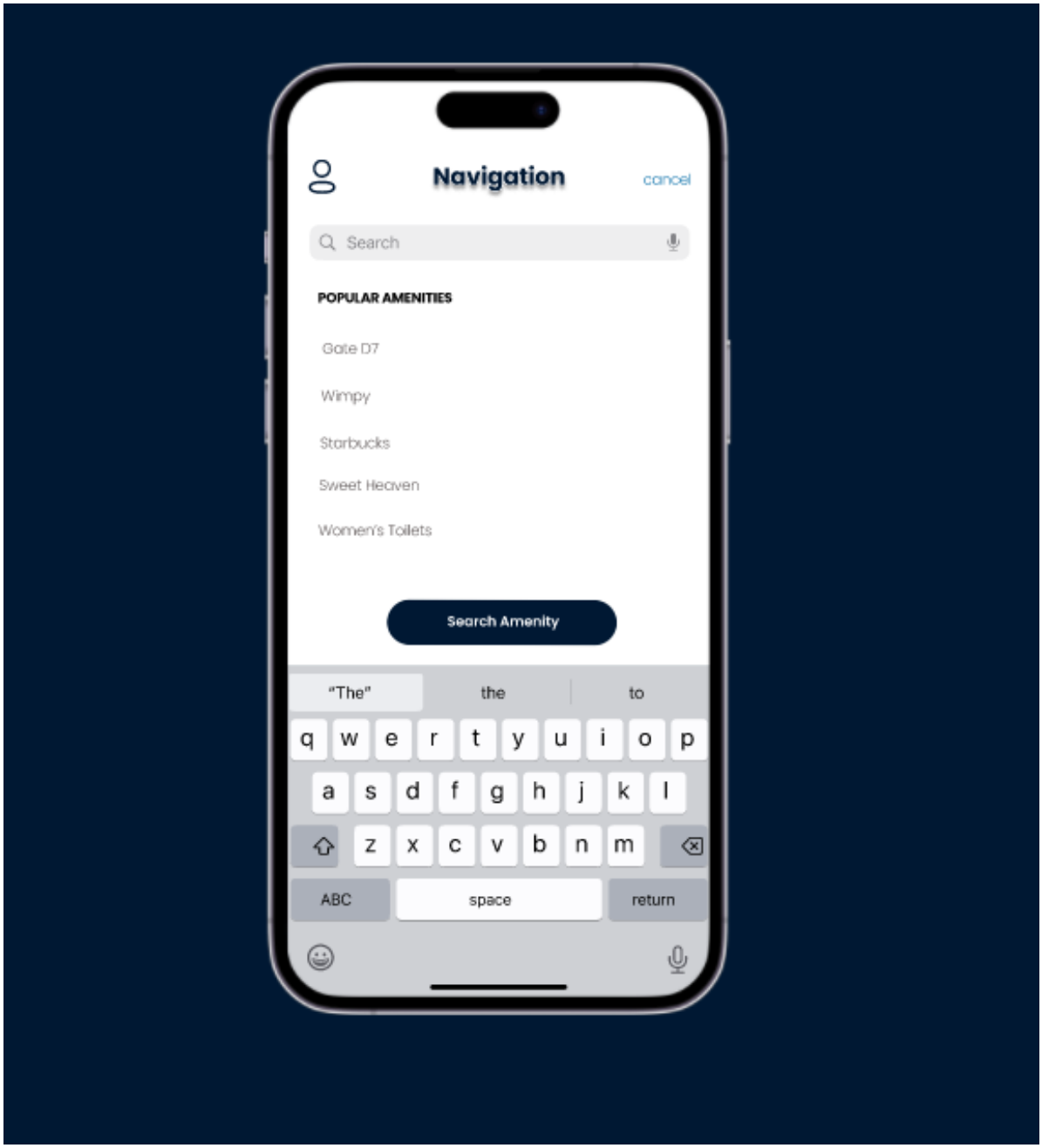
3.1.



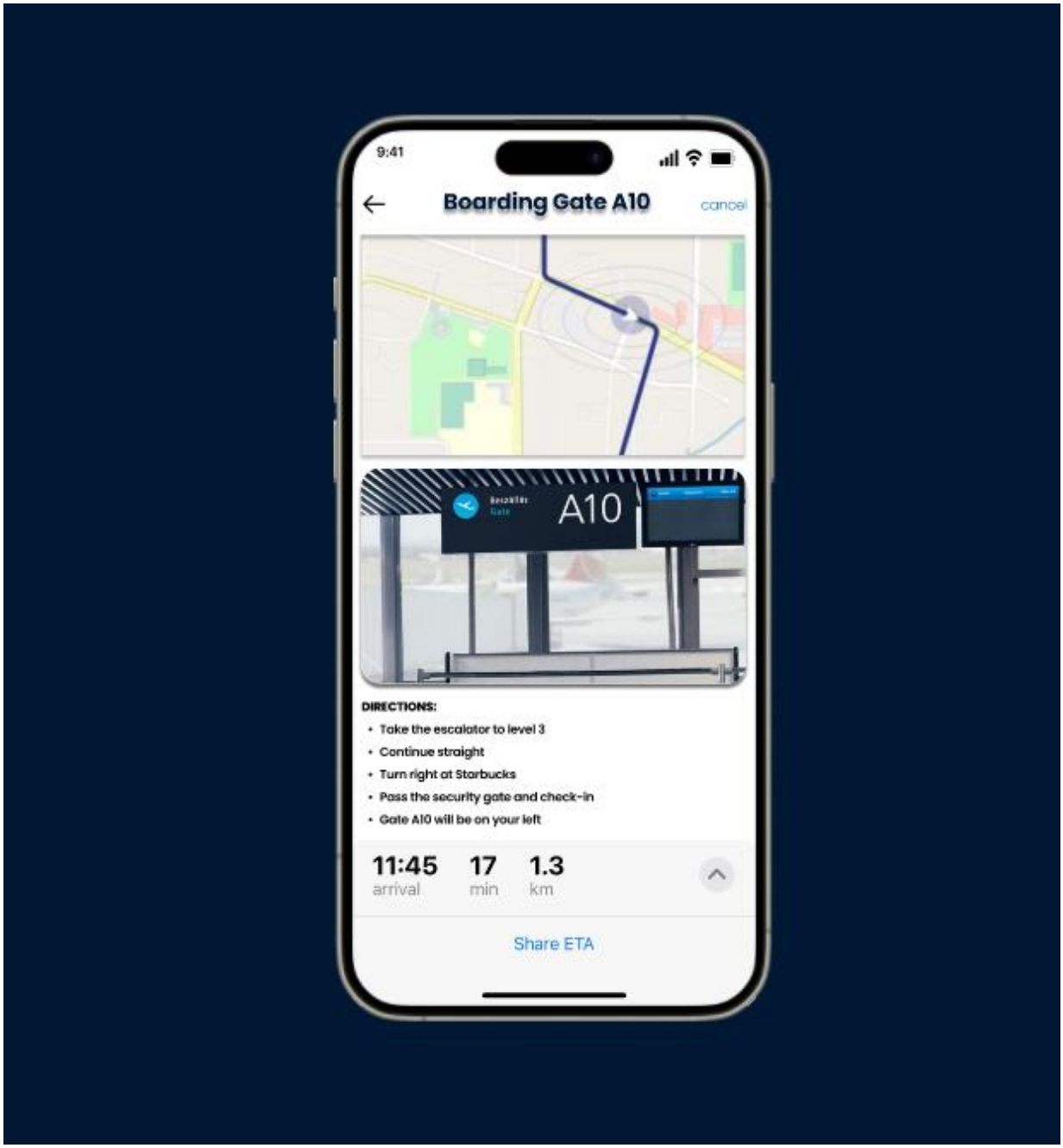
3.2.

Functionality: Navigation Capability

Interface 1: Navigation Request



Interface 2: Navigation Result



Usability:

<u>Navigation Request:</u>

- Clear and simple search bar with a prominent magnifying glass icon.
- Button text "Search Amenity" indicates the action.
- Optional popular amenities list provides quick access.

Navigation Results:

- Map view with a highlighted route provides a clear visual path.
- Navigation instructions are concise and easy to follow.
- Directions are provided
- Additional information (distance, time, nearby amenities) enhances understanding.

Visibility:

Navigation Request:

- Search bar and button are prominently displayed.
- Placeholder text in the search bar guides the user.
- Optional popular amenities list draws attention.

Navigation Results:

- Map view and highlighted route grab attention.
- Navigation instructions are clear and easy to read.
- Additional information is displayed below the instructions.

Affordance:

Navigation Request:

- The search bar and button have a clear call-to-action (CTA) design.
- Magnifying glass icon indicates search functionality.

Navigation Results:

- Map view has a subtle grid pattern, indicating interactivity.
- Arrows and icons in the navigation instructions indicate direction and action.

REFERENCES:

1. Agile Alliance (n.d.) What is Agile? [Online]. Available from: (link unavailable) [Accessed: 20 May 2024]
2. Project Management Institute (2017) Agile Practice Guide. Project Management Institute, Pennsylvania.
3. Sutherland, J. (2014) Scrum: The Art of Doing Twice the Work in Half the Time. Crown Business, New York.
4. Cohn, M. (2010) Succeeding with Agile: Software Development Using Scrum. Addison-Wesley Professional, Boston.
5. Schwaber, K. (2004) Agile Project Management with Scrum. Microsoft Press, Redmond.
6. Highsmith, J. (2009) Agile Project Management: Creating Innovative Products. Addison-Wesley Professional, Boston.
7. VersionOne (2020) 14th Annual State of Agile Report. [Online]. Available from: (link unavailable) [Accessed: 20 May 2024]
8. Agile Manifesto (2001) Manifesto for Agile Software Development. [Online]. Available from: (link unavailable) [Accessed: 20 May 2024]
9. Pillai, R.G., Devrakhyani, P. (2020). A Data Driven Approach for Customer Relationship Management for Airlines with Internet of Things & Artificial Intelligence. In: Sharma, S.K., Dwivedi, Y.K., Metri, B., Rana, N.P. (eds) Re-imagining Diffusion and Adoption of Information Technology and Systems: A Continuing Conversation. TDIT 2020. IFIP Advances in Information and Communication Technology, vol 617. Springer, Cham. (link unavailable)
10. Declan, B., Morrison, D., O'Neill, S.: The future of airline CRM. IBM Institute for Business Value (2002)
11. Ngai, E.W.T., et al.: Application of data mining techniques in customer relationship management: a literature review and classification (2008). (link unavailable)
12. Airport Council International (2020) Airport Customer Experience: A Guide to Improving Passenger Satisfaction, Airport Council International, Washington.

13. International Air Transport Association (2020) Passenger Experience: A Key to Airport Success, International Air Transport Association, Montreal.
14. Federal Aviation Administration (2020) Airport Operations and Management, Federal Aviation Administration, Washington.
15. Airports Council International - North America (2020) Airport Customer Relationship Management: A Best Practices Guide, Airports Council International - North America, Washington.
16. IBM (2020) Airport Customer Experience: Leveraging Technology to Enhance Passenger Satisfaction, IBM, Armonk.