iVending – Business Requirements

Project 01

Business Requirements

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| --- | --- |
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| 0.1 | 08/30/2024 | Initial business requirements document | Shawn Richard |
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Related Documents

|  |  |
| --- | --- |
| Document Title | Where Available |
|  |  |
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Document Purpose

The objective of the Business Requirements document is to define the high-level business requirements for the scope of the project.

If a separate Business Case document has not been previously prepared, an additional objective of the Business Requirements document is to document the Business Case.

# Business Case

<If Business Case has already been documented, Enter reference to Business Case document.

If Business Case has not already been documented complete all of Section 1.>

## Overview

<Enter High-level summary of the project>

NOTES

CUSTOMER FACING:

* Take advantage of trend towards self-servicing and autonomous customers (i.e., customers that already KNOW what they want and expected level of ‘customer service.”
* Combine with high-density / high-traffic, time-constrained consumers (with lower expectations on customer service), for example:
  + Students (student housing; students moving between classes / obligations
* Offer unique services via vending platform:
  + Dynamic menu
  + Quality menu
  + Loyal customer program
  + High-availability
* Cashless
* Focus on food, drinks and snacks (chilled and warm products)

COMPANY FACING

* Automate support options
  + Inventory & delivery
  + High-availability via redundant iVending systems (cooling and heating)
  + Reporting (errors, availability, trends, etc.)
* Customer interface:
  + iVending machine
  + iVending app
* Inventory
  + Targeted item availability based on reporting
  + Dynamic type of inventory (drinks versus solid food)
* Geographically agnostic:
  + Power supply
  + Interface: Language
* Real-time learning: iVending machine utilizes machine learning to monitor machine operations

## Business Justification

<Enter a description of the problem to be solved or opportunity to be gained by doing the project>

## Benefits

<Enter Benefits of the project that directly address the problem statement identified in Section 1.2 – Business Justification>

## Strategic Overview

<Enter Strategic Objectives supported by the project>

## Risks to Business

Risks generally fall within 3 classifications:

Business Risk - identifies the risk to the business of doing or not doing the project. For example; loss of market opportunity or threat of competition.

Project Risk – this is a risk to the successful completion of the project. For example; lack of funding, resources or implementation problems.

Product Risk – these are the risks associated with the product or service itself. For example; brand image, security, and other product or service specific items.

The following matrix identifies key risks of this project, degree of impact and probability (H=High, M=Medium, L=Low) and the next steps to address or mitigate the risks.

|  |
| --- |
| Using the risk types in Appendix A, please complete the following matrix. Please refer to the Glossary to ensure all risks are addressed. |

### Risk associated to the project

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Risk Type** | **Description** | **Probability** | | | **Impact** | | | **Strategy for mitigating the risk** |
| **H** | **M** | **L** | **H** | **M** | **L** |
| **Project** |  |  |  |  |  |  |  |  |
| **<other>** |  |  |  |  |  |  |  |  |
| **<other>** |  |  |  |  |  |  |  |  |
| **<other>** |  |  |  |  |  |  |  |  |
| **<other>** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

### Risk of not doing the project

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Risk Type** | **Description** | **Probability** | | | **Impact** | | | **Strategy for mitigating the risk** |
| **H** | **M** | **L** | **H** | **M** | **L** |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

# Scope

## In Scope Functionality and Components

The following information is the high level functionality and components that are in the scope of this project.

A diagram of a diagram of a diagram

Description automatically generated

Figure 1: Overall Use Case Diagram

* <Enter use case diagram(s) or context diagram(s) specifying project scope>
* <Enter functionality and components included in the project scope>
* <Enter event list>

## Out of Scope Functionality and Components

The following information is the high level functionality and components that are specifically excluded from the scope of this project.

* <Enter functionality and components excluded from the project scope>

# Process Flow

|  |
| --- |
| Include a diagram(s) such as business process models (BPM) showing how the product or service of the project will operate when completed. Include existing processes as well as new processes that will be created as part of the project  **INPUT**——→**PROCESSING**——→**OUTPUT** |

<The following diagram(s) represents the business process flow related to the scope of this project.>  
  
Insert Business Process Model

<As-Is to define opportunities and issues>

<To-Be to define solutions>

# Business Requirements

The following are high-level business requirements. The business requirements are divided into two types.

* Functional requirements directly support the functions of the product of the project.
* Non-functional requirements are those that do not directly support the functions of the product of the project, but are needed for the success of the project.

## Functional Requirements

The following functional requirements are grouped in categories specifically identified for this project or in models such as use cases specifically identified for this project

### <Functional Requirement Category 1>

<The following Use Case model documents what requirements the solution will be offered the user stakeholders.  
  
Insert Use Case Diagram

<The following use case descriptions documents what requirements the solution will be offered the user stakeholders.  
  
<Insert Use Case Descriptions>

<Insert State Machine Diagrams>

### <Functional Requirement Category 2>

### <Functional Requirement Category 3>

## Non-Functional Requirements

The following non-functional requirements are organized in standard categories identified in the business requirements document template. If there are no requirements of this project for a category, it is noted that are none.

### Reporting Requirements

* Machine: item inventory
* Vendor:
  + Vendor in business still?
  + Vendor-item availability
* Machine Status
  + Error codes
  + Failure codes
* Data Trends:
  + Increase / decrease in loyal customers vs. non-loyal customers
  + Inventory-over-time
  + Account Status: Loyal customers
    - Avg-per-month dollar amount in account
    - Loyal customers accounts with issues (i.e., bank transaction issues) vs. accounts w/o issues.

### Operating Regulations Requirements

* OSHA compliance for consumable items

### Documentation Requirements

* Customer Interface: iVending Machine
* Customer Interface: iVending App (mobile phones; OS agnostic)

### Training Requirements

* None required at this phase of the project.

### Support Requirements

* Operational Support: Responding to error codes and failure codes
* Inventory Delivery Support

### Marketing Requirements

* Targeted advertisement to specific local demographics, focusing on ‘smart vending’ benefits and how this will transform the customer experience.
* “Rewards Program” for “loyal” customers

### Legal, Regulatory and Patent Requirements

* None required at this phase of the project.

### Security Requirements

* Security of iVending Machine
  + Lockdown Physical Access
  + Physical Access for Support Operations
  + Secure Point of Sale (“POS”)
* Security of iVending App

### Performance Requirements

* Items:
  + Inventory
    - Dynamic Menu (based on both customer choices and manufacturer availability)
    - Availability of Items
  + Delivery
  + Error State Behavior
* Currency and Transactions:
  + Secure
  + Cashless

## Information Requirements

The following are high-level information requirements. The information requirements are divided into two types.

* Internal information requirements are directly generated by the functions of the product or services of the project.
  + Base data
  + Summary data
* External information requirements are those that are not directly generated the functions of the product or services of the project, are needed for the success of the project, and must be secured from an external source.

<Insert Conceptual or Logical Data Model and, as needed, Data Dictionary>

# Assumptions

The following assumptions are considered accurate for planning and business requirements purpose.

* <Enter key assumptions>

# Constraints

The following are known constraints that may limit the business requirements of the project:

* <Enter key restrictions that limit the performance of the project>

# Funding

<Enter status and source of Funding for the Project>

# Known Impacts

The following groups will be impacted as a result of this project:

|  |  |
| --- | --- |
| **Who** | **How** |
| **<Business Partners>**  Menu-Item Vendors  iVending Machine Parts |  |
| **<Business Units>**  Operations |  |
| **<Customers>**  University Customers  Airport Customers  Loyal / Non-Loyal Customers |  |
| <Third-parties>  Local Police  Local Security | If a device is illegally interacted with, what is the expected behavior? |
| <Processors> |  |
| <Other> |  |

Appendix A – Risk Types

| **Risk Type** | **Definition** |
| --- | --- |
| Association Risk | Organizational forces that could either significantly change the fundamental structures that drive overall objectives and strategies or impair its business viability.  Significantly impacts the ability to deliver fundamental service offerings or impair its business viability.  Same as Enterprise Risk |
| Availability Risk | Interruption of access to important information, software, services or resources |
| Business Operations Risk | Business processes do not achieve the objectives they were designed to achieve in supporting business model. |
| Business Risk | Identifies the risk to the business of doing a project or not doing a project. |
| Confidentiality Risk | Unauthorized disclosure or viewing of data/information |
| Enterprise Risk | Organizational forces that could either significantly change the fundamental structures that drive overall objectives and strategies or impair its business viability.  Significantly impacts the ability to deliver fundamental service offerings or impair its business viability.  Same as Association Risk |
| Environment Risk | External forces that could either significantly change the fundamental assumptions that drive overall objectives and strategies or threaten its business model. |
| Financial Risk | The risk of business model, or a particular business function not resulting in profitability or financial viability for or its business partners, given the current business environment. (Same as Business Risk) |
| Fraud Risk | The specific risk that a product or service could provide a potential increase in fraudulent transactions. |
| Identification Risk | Communicating parties that are not sufficiently authenticated to ensure that their identity is correct. This may lead to unauthorized parties having access to systems, applications or data/information. |
| Information Risk | Any risk of unauthorized access, viewing, modification or rendering inaccessible information assets of the Enterprise. |
| Integrity Risk | Undetected modification of data/information either malicious or accidental. |
| Legal Risk | The risk that business practices might contribute to increased exposure of lawsuits or legal liability. |
| Market Risk | The risk of being slow or unable to adapt to economic or industry changes, or competitive forces. |
| Non-Compliance Risk | Stems from violations of, or nonconformance with internal policies & procedures and external laws, rules, regulations, industry practices, or ethical standards. |
| Operational Risk | Stems from operational inadequacies with affect to product or service delivery, aka, Business Operations Risk |
| Organizational Risk | Organizational dependencies that could either significantly impact the ability to deliver fundamental service offerings or impair its business viability. |
| Project Risk | A risk to the successful completion of the project. |
| Regulatory Risk | The risk that business practices might contribute to increased regulatory non-compliance or non-compliance with applicable laws and legislation. |
| Residual Risk | The amount of risk that remains after all mitigation is performed. Residual Risk tends to grow over time. |
| Settlement Risk | Stems from the inability of parties to meet their legitimate financial and settlement obligations in a timely manner. Settlement risks include both short-term liquidity problems and possible long-term loss of capital. |
| Strategic Risk | Stems from poor business decisions, or improper implementations of those decisions. |
| Technology Risk | Arises when information technologies do not operate as intended or compromise the integrity and reliability of transaction processing services or when system development activities do not sustain the evolution of service offerings. |
| Third-Party Risk | The financial, brand or compliance exposure that exists when a third-party lacks sufficient controls to protect data, systems, products or services. Includes risk of vendor financial insolvency or risk of a vendor not adhering to specific security or business commitments in their contract. |