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Management Information System Implementation Proposal

CLIENT: SUSHIGO
AAPRT

GROUP 1 | Information Systems course

Document and information reviews

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1. Introduction

After the previous contacts between **SushiGo** and **AAPRT**, we hereby respond to the request we received. We'll present a proposal for the provision of professional services aimed at designing and implementing a Management Information System that properly supports **SushiGo's** chain stores.

We appreciate the opportunity given to us and submit this proposal for which we guarantee our best attention during all the project for all the services we offer.

Background and objectives

After carefully analysing the minutes and the background documents, we understood that the solution for the main problems of the company are described in the following table:

Necessities to improve	Objectives
Cook's efficiency	- Make costumers' orders a mostly automated process - Do the same for inventory control
Reliability	- Change the way information is saved from manually to automatic
Costumer service	- Improve the relationship with costumers - Make marketing a more efficient and less tiresome process
Business process's efficiency	- Erase time-consuming phone errors - Develop the e-commerce and digital component of the firm - Allow for a more efficient and effective Management Personal's activity
Marketing capabilities	- Allow for intelligent targeting of current costumers - Create the ability to target new costumers

2. Proposal scope

The present agreement becomes effective after the last signature date and represents the mutual agreement between **SushiGo** and **AAPRT**. The final goal is to consolidate the proposal for the design and development of a Management Information System whose purpose is to support the client's chain stores.

Therefore, the following services are included in the proposal:

- **Requirement's analysis**, as a result of the several meetings held to identify in detail which information and respective structure have to be available.
- **Logical information architecture definition and design**, necessary for the new platform, identifying solution specific technical features.
- **Platform look & feel development**, images, colors, and fonts definition and design, to be used for development purposes, as well as schematic templates to be defined together with **SushiGo**. The proposed look & feel should allow access to the platform from different platforms (PC, laptop, mobile, tablets).
- **Installation and configuration** of the platform supporting technology.
- **Platform implementation** supported by the requirements which were agreed in the schematic templates which were defined and validated with **SushiGo**.
- **Support and coordination in testing** the new platform.
- **Support and coordination in the provision of the solution.**

Outside the scope of services to be provided are:

- Preparation of content, whether text, images or videos to be made available.
- Development and implementation of communication strategies for the solution dissemination.
- Data Migration and currently existing content on internal platforms or external systems of any kind to the new solution.
- Additional costs of licensing or infrastructure required to support the solution presented.
- Integration with external systems except those indicated in the proposed solution.

3. Proposed solution

In this chapter we present the description of the to be implemented solution, based on the identified high-level requirements for **SushiGo**.

According to the identified needs, we consider that the solution can be divided into the following modules:

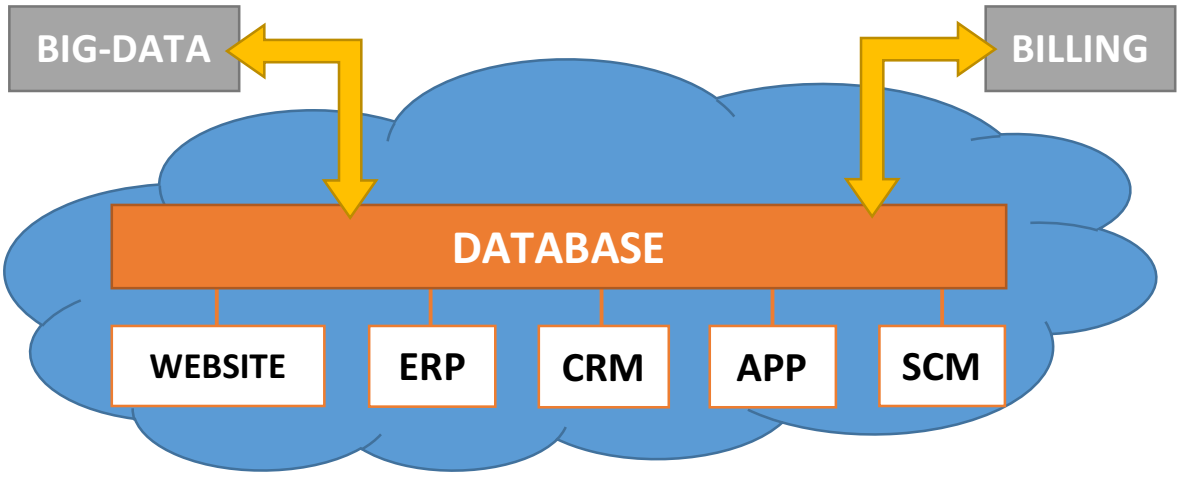

Figure 1 — Diagram with the different modules of our proposal

Our solution is mostly cloud based and the way modules communicate with each other is through a common database.

Since big data analytics are highly complex and expensive, we suggest that **SushiGo** establishes a contract with an external service provider.

Almost all other components of the system are mostly constant and don't require major changes, however, due to National Laws, the billing system must always be up to date with Portuguese requirements. To avoid the need of hiring specialized workers to keep this last system according to legal requirements, we suggest that it is supplied by an external provider as well.

Features

To know more about each of the modules, please pay attention to the following table which describes the main features of each of the modules.

Module	Features
Cloud	- Hosts every other module - Provides constant saves plus backups

	- Has different levels of access according to hierarchy (Operators VS Managers) *Our proposed Cloud provider is Microsoft Azure.*
Database	- Centralizes information - Gives a channel to access information - Is the bridge among every module and program *The Cloud provider includes a MySQL database.*
ERP	- Resource allocation according to forecasts - Control production and delivery - Generate reports for management control - Inform provisioning about inventory usage - Receive order's information from order entry/order management - Exchange billing information with provisioning - Forwards invoice process to Billing Module *Our proposed ERP provider is Odoo.*
CRM	- Keep track of the status of orders - Process the costumer's reviews - Receive input from manager's decision due to Big Data analytics - Target clients according to manager's input (Marketing) - Provide costumer analytics to Big Data provider - Process client's orders and forward this to production - Charge the costumer - Generate reports for management control *The ERP provider includes a CRM.*

SCM	- Keep track of inventories (ins and outs)
	- Detect inventory anomalies through random inspections of the cooks
	- Order supplies from supplier's
	  ○ By demand
	  ○ Automatically
	- Generate reports for management control
	- Take care of the billing process with suppliers
	
	The ERP provider includes a SCM.

App	- Has three different sections
	  ○ Costumer
	  ○ Delivery
	  ○ Provisioning
	- Each section allows for all interactions described for the other modules
	
	The App must be completely designed and does not have a specific provider.

Billing	- Keep updating according to Portuguese Law

	- Handle the whole invoice process *Our proposed Billing provider is Moloni.*

Big-data	- Let management find relations in previously unrelated topics
	  ○ Example 1: do sales increase on the 2nd week of the month
	  ○ Example 2: do people with dogs like sushi more?
	- Provides managers with information to make forecasts about future sales
	
	Our Big-data analytics provider is DataSonar.

Website	- Is a mirror of the costumer section of the App *The Website is included in the package supplied by Odoo.*
Note: for detailed specifications about more technical aspects of each one of the modules, please see in the Functional Requirements document	

Support technology

Since the whole solution we're proposing is cloud based, there is no need for physical servers and all other necessary hardware won't have high requirements and mainstream equipment should suffice.

The only special thing required is fiber optic internet connect for a quick access to each of the modules and one smartphone per kitchen and per courier for provisioning and delivery.

Open-source solution VS Licensed solution

AAPRT has a history of working with both Open-source and Licensed solutions. While the first comes at reduced costs, the second is less fragile to bugs and errors.

For more details on each solution's costs please refer to chapter 7. Costs and billing and for more details on each solution's risks please refer to chapter 8. Risk evaluation.

There is major difference in the details of the implementation of each of the solutions. There is a direct change between modules done with Odoo and the licensed solution, whereas in the latter the website must be developed from scratch, incrementing the final implementation cost.

The licensed solution we suggest is Primavera with the possibility of one of the modules being from another provider[1] (to be decided according to implementation during analysis and design of the implementation).

[1] If this is the case, additional costs may apply due to an increase in licenses but not to an increase in AAPRT's fees which aren't affected by this

4. Project approach

This chapter describes the approach and the planning proposed by **AAPRT** for this project, detailing the main phases and activities to be done.

We reinforce that the project's realization does not solely depend on **AAPRT**. It is fundamental that **SushiGo** complies with its responsibilities and carries out a set of activities that is absolutely necessary and critical for the overall project's success.

4.1. Phases and activities

<table>
<tr><th>Planning</th><th>Implementation</th><th>Operation</th></tr>
<tr><td>Analyse the company;</td><td>Maintenance of the legacy systems until the full migration to the new system is successfully complete;</td><td>If necessary/desirable provide training in the usage of the new IS to the company´s staff;</td></tr>
<tr><td>Learn how their business work and also their culture;</td><td>Ensure an Information Technologies (IT) infrastructure to support the new IS;</td><td rowspan="5">Assuring maintenance and improvement (updating) of the new IS.</td></tr>
<tr><td>Learn what are their objectives;</td><td>In phases, replace the obsolete applications, methods and systems, by the new one´s;</td></tr>
<tr><td>Know what is essential for them to reach their objectives;</td><td rowspan="3">Testing the new IS and resolving any possible bug that might appear.</td></tr>
<tr><td>Evaluate their needs;</td></tr>
<tr><td>Provide a solution that meets their needs, culture and budget.</td></tr>
</table>

4.2. Planning

For the full implementation of the services described under this proposal, we foresee a period of 9 weeks.

The next page contains a diagram with the planning and the timeline we expect for the project's implementation.

Please note that every module's implementation process is divided in 4 different phases: Analysis and design (1), development (2), testing (3) and go live (4). Also, since the forecast for the length of the project is an estimation, we believe it's more appropriate to split the timeline into periods instead of concrete time windows.

1st period

- Cloud (1) (2) (3) (4)
- *Since every module is hosted by the cloud, it must already be set up before any other module is implemented.*

2nd period

- Database (1) (2) (3) (4)
- *Since the database centralizes all of the data and information for other modules' utilization, it must be implemented before them, excluding the Cloud.*

3rd period

- ERP (1) + CRM (1) + SCM (1)
- *These modules are the core of the information system and need to be connected to each other, so they should be analysed and designed before the other modules, except for the previous modules.*

4th period

- App (1) + Website (1)
- *These modules should be analysed and designed before the development of the core of the information system because we must ensure that the App and the Website are compatible with the ERP, CRM and SCM.*

5th period

- ERP (2) + CRM (2) + SCM (2)
- *After the connection between the core and the other modules is analysed and designed, we must develop the core and, just as before, we must do if before we develop the other modules.*

6th period

- App (2) + Website (2)
- *With the core in place, we can now properly develop the App and the Website without risking them not being able to connect to the core.*

7th period

- ERP (3) (4) + CRM (3) (4) + SCM (3) (4) + App (3) (4) + Website (3) (4)
- *With all of the modules, except the Billing and Big-data ones, properly developed, it's time to test them and make any necessary adjustments.*

8th period

- Billing (1) (2) (3) (4)
- *This module will be a software provided as a service so all that is required now is to ensure the connection between the supplier of the service and the core of the system, everything else is taken care of by the supplier.*

9th period

- Big-data (1) (2) (3) (4)
- *Just as with the Billing module, this one will be supplied as a service and only requires a connection to the system itself. For this case the most important is the access to all of the companies data, thus the connection to the Database.*

5. Project organization

5. 1. Team

Understanding that this is a project that requires decision making and a strong commitment by each of the parties involved, **AAPRT** proposes the following organization for the project:

- **Monitoring Committee**
  The committee will monitor all the steps of the project, ensuring that all phases are correctly performed, with maximum efficiency. Its goal is to assure that all of **SushiGo's** previous problems are properly assessed and approached.
  - **AAPRT's** General Manager – responsible for ensuring **AAPRT's** interests
  - **SushiGo's** Executive Director – responsible for ensuring **SushiGo's** interests
  - Future major investors — responsible for ensuring their own interests
- **Project management**
  Should act towards the coordination of all the project team members, take decisions as needed to the progress of work, and promote the existence of the necessary conditions for the success of the project should meet frequently in order to:
  - Obtain higher efficiency while in increasing profits.
  - Create competitive advantage by presenting lower costs in production and higher revenues from an increase in clients with increased consumption
  - Improve decision making by utilizing more accurate forecasts and present information
  - Enhance costumer relationship by decreasing the firm/client distance with more advanced technologies
  - Optimize supplier relationship by using accurate sales forecasts to create long term contracts flexible to sales forecasts with lower costs
- **Project Team**
  Will have elements with different responsibilities, carrying out the the activities identified under the proposal scope. Should ensure the needed reporting to monitor the project, perform diagnostic meetings and decide on operational matters.

5.2 Requirements to begin project

In order to begin the project, there is a set of requirements that have to be met. These are:

- **SushiGo** should identify a single point of contact who will be responsible for coordinating the execution of the project in conjunction with **AAPRT**'s project manager.
- **SushiGo** should identify the interlocutors that will facilitate the phases (Analysis and design, development, testing and launching). Preferably, there is one representative for every group of tasks the information system will affect (couriers, cooks, accounting and finance, sales management, etc.)
- The project's starting date should be identified as soon as possible (one month in advance), in order to allow **AAPRT** to do the necessary planning and resources' allocation to the presented project.

6. Responsibilities and assumptions

6.1. Responsibilities

AAPRT's project execution has in consideration the timely and effective execution of the herein described **SushiGo**'s responsibilities, as well as the timely decision making and required approvals during the project execution.

Because of the temporal limitation of the project, **SushiGo** undertakes to comply with each of its responsibilities in a timely and expeditious manner.

SushiGo's responsibilities are described below.

General responsibilities:

- **Time and availability** – devote a minimum of 10 hours per week to interact with the consultants regarding any topic related with the project.
- **Confidentiality** – in order for **AAPRT** to perform the consulting services, it will be necessary for the client to provide the consultants with confidential information regarding the company's business and products. **AAPRT** will not use the gathered information for any other purpose than the project itself or for any future actions that have the client's best interest.
- **Accuracy of information** – the client will make sure that all information provided to the consultants is truthful and accurate.
- **Non-exclusivity** – **AAPRT** is allowed to provide similar services as those provided to **SushiGo**, even if these other clients are direct competitors of **SushiGo**.
- **Intellectual property** – **SushiGo** will never sell or provide any of the software or information or services received from **AAPRT** to other entities.
- **Licenses' fees** – **SushiGo** will obtain any authorization, license or consent **AAPRT** thinks is necessary for it to provide the service described in this document.
- **Access to equipment** – **SushiGo** will give access to any necessary equipment it has to **AAPRT** and allow the later to test them.
- **One-way access** – **SushiGo** will never use **AAPRT's** services, or any other assets, without the consultant's permission.
- **Breach of contract** – if, in any circumstance, **SushiGo** fails to comply with its responsibilities, **AAPRT** has the right to immediately stop providing any service it sees fit, including but not limited to: failure in paying fees on time.
- **Protection of intellectual property** – **SushiGo** is responsible for protecting the intellectual property provided by **AAPRT**, any misuse by third parties due to **SushiGo's** failure in protecting it is a direct breach of contract due to negligence.

Software responsibilities:

Whenever **AAPRT** provides **SushiGo** with any software:

- **AAPRT** remains the owner or licensee of the software.
- **SushiGo** must only use the software for its intended purpose.

- **SushiGo** must not change or interfere with the software in any way.
- **SushiGo** must not copy any part of the software without **AAPRT's** permission.

Right to give up on any service:

- **SushiGo** may decide to give up on any service. This is done through a written statement; no other methods will be legally binding. If the service is subject to a minimum term, then termination fees may apply if the written statement is not in accordance with the minimum term.
- Subject to any minimum term or notice period, charges will stop 30 days after the written statement is provided. This period might decrease, subject to **AAPRT's** decision. **SushiGo** has the right to receive the service during the days it is charged, even if the written statement is provided.

6.2. Assumptions

The estimated duration of the project presented in this document and corresponding fees take into account the following additional assumptions:

- The project plan will be reviewed and detailed during the first days of the project, which must be approved by **SushiGo**. This plan should be mutually agreed and not be exclusive to **AAPRT**'s initial plan.
- In order to ensure proper execution of the project, the remaining decision-making should be timely taken by the **SushiGo** team.
- Any modifications requested by **SushiGo**'s team with impact on the scope of services and results, the project team and/or calendar, should be subject to a formal addendum to this Agreement.
- The costs inherent to any licensing software and hardware acquisition other than those listed in this proposal are **SushiGo**'s responsibility and are not herein specified.
- The formal acceptance of the work should take place within 10 working days after the completion of the work. Any reasons for non-acceptance must be reported during this period, considering the services tacitly accepted after the ending of the period.
- In case of interruption, the project restart will occur after reaching agreement between both parties, and only after the causes that constituted grounds for interruption are remedied.
- There may be reasons for the interruption and suspension of the project by **AAPRT**, if one or more of the following facts occur:
    - The non-payment of the invoices within the due dates;
    - The lack of compliance with deadlines for decision making by **SushiGo**
    - The discontinuity in the leadership of the project or in the **SushiGo** management board, which would jeopardize the ability to decide and to ensure the successful continuation of the work.
- **SushiGo's** data shared with the big-data analytics supplier can only be used in the best interest of the company, and this can and will be stated in the contract with the analytics supplier.

7. Costs and billing

7.1. Costs

The fees estimated for this project were based on our resources' time involvement shown previously.

The fees and payment terms are detailed in accordance with the implementation scenario.

Since **SushiGo** has the option of choosing between licensed or open-source software, this will represent a major variation in the final cost of the project. This difference is described below as two scenarios, Open-source and Licensed.

The full implementation of this project, including all phases proposed and described herein, can be consulted on the next two pages, one per scenario.

OPEN-SOURCE SCENARIO

Value of annuities after implementation (excl. VAT)	**Monthly total** **Annual total**	**€1.086,76** **€13.041,12**
Cloud Service – Microsoft Azure[2]		
DocumentDB		€94,37
Storage		€12,63
RemoteApp		€50,60
IP Addresses		€7,53
Azure DNS		€2,45
Backup		€26,99
Key Vault		€7,84
Support		€24,46
	Monthly total	€226,86
	Annual total	€2.722,29
ERP, CRM, SCM — Odoo		
Project Management		€20,00
Invoicing		€10,00
Sales		€10,00
Website		€20,00
e-commerce		€10,00
Point of Sale		€20,00
Accounting		€20,00
Project		€20,00
Inventory		€30,00
Manufacturing		€35,00
Purchase		€10,00
Equipment		€10,00
Expenses		€10,00
Quality Control		€20,00
Helpdesk		€20,00
Maintenance (Manufacturing)		€20,00
PLM (Manufacturing)		€20,00
User costs (27 estimated users)		€540,00
	Monthly total	€845,00
	Annual total	€10.140,00
Billing — Moloni	Monthly total	14,90€
	Annual total	178,80€

Implementation cost (excl. VAT)	**Total cost**	**€71.450,00**
1 Project Manager for 9 weeks, 5 days a week, 8 hours a day		€21.600,00,
1 Analyst Consultant for 9 weeks, 5 days a week, 8 hours a day		€10.800,00
2 Developers for 9 weeks, 5 days a week, 8 hours a day		€7.200,00
1 Technical Analyst for 9 weeks, 5 days a week, 8 hours a day		€9.000,00
Development of the App		€22.850,00

[2] The price of the Cloud service is highly susceptible to the implementation process and prices may variate

LICENSED SCENARIO

Value of annuities after implementation (excl. VAT)	**Annual total**	**€19.940,00**
Cloud Service – Microsoft Azure[3]		
DocumentDB		€94,37
Storage		€12,63
RemoteApp		€50,60
IP Addresses		€7,53
Azure DNS		€2,45
Backup		€26,99
Key Vault		€7,84
Support		€24,46
	Monthly total	€226,86
	Annual total	€2.722,29
ERP, CRM, SCM — Primavera		
Primavera P6 Enterprise Project Portfolio Management Cloud Service		€2.855,40
Oracle Primavera Prime Capital Plan Management		€2.855,40
Primavera Unifier Project Controls		€3.281,10
Primavera P6 Reporting Database		€5.191,61
Primavera Facility Management		€2.855,40
	Annual total	€17.038,91
Billing — Moloni	Monthly total	14,90€
	Annual total	178,80€

Implementation cost (excl. VAT)	**Total cost**	**€150.349,45**
1 Project Manager for 9 weeks, 5 days a week, 8 hours a day		€21.600,00,
1 Analyst Consultant for 9 weeks, 5 days a week, 8 hours a day		€10.800,00
2 Developers for 9 weeks, 5 days a week, 8 hours a day		€7.200,00
1 Technical Analyst for 9 weeks, 5 days a week, 8 hours a day		€9.000,00
1st year licensing of Primavera's products		€77.449,45
Development of the App		€22.850,00
Development of the Website		€1.450,00

These values will be increased by VAT (value added tax), according to the legal value in place at the invoice issuing date.

As previously stated in this document, the value of the above mentioned fees may be subject to joint review in the event of any changes in the objectives, scope or assumptions, as needed.

[3] The price of the Cloud service is highly susceptible to the implementation process and prices may variate

7.2. Conditions and payment plan

Invoices must be settled within 15 days from the date of issuance.

The services will be billed based on the following payment schedule and in accordance with the project phases:

- The first 35% of the total implementation cost of the project is to be paid upfront, and covers the 1st and 2nd period of the project's planning;
- The second 40% of the total implementation cost of the project is to be paid after the completion of the previously mentioned periods, and covers the 3rd, 4th, 5th, 6th and 7th period of the project's planning;
- The last 25% of the total implementation cost of the project is to be paid after the completion of the previously mentioned periods, and covers the 8th and 9th period of the project's planning;
- At last, the adjustment from implementation cost to real cost is to be paid/returned upon the completion of the whole project.
- After the implementation of the project, **SushiGo** is responsible for keeping up with annual fees.

Any failure in complying with the payment plan described above represents a breach of contract and may imply a full stoppage of the whole project's implementation, at the discretion of **AAPRT**.

7.3 Copyright and proposal validity

The present document is owned by **AAPRT**, and cannot be transmitted to any other entity, individual or collective, external to **SushiGo**.

The proposal is valid until December, 2016.

8. Risk evaluation

In order to evaluate whether the risk of using an open-source information system is worth the reward or not, we'll evaluate this factor through a risk matrix and consider it against rewards.

		Impact				
		Negligible	**Minor**	**Moderate**	**Significant**	**Severe**
Likelihood	**Very Likely**	Medium (6)	Medium high (7)	High (8)	Very high (9)	Very high (10)
	Likely	Medium low (5)	Medium (6)	Medium high (7)	High (8)	Very High (9)
	Possible	Low (4)	Medium low (5)	Medium (6)	Medium high (7)	High (8)
	Unlikely	Very low (3)	Low (4)	Medium low (5)	Medium (6)	Medium high (7)
	Very unlikely	Very low (2)	Very low (3)	Low (4)	Medium low (5)	Medium (6)

We identify 4 main risks:

- The program stops being developed
- Company that supplies the information system shuts down
- Errors occur
- Bugs occur

These risks will be evaluated in the following sub-chapters and compared afterwards.

8.1. Risk evaluation for Open-source solution

We evaluate the risk of the program's development being interrupted with a risk factor of 5 out of 10, so **medium low**.

To evaluate the impact of this event, we took into account the following:

- large communities develop the open-source code so, for it to stop being developed, most of the large community would have to stop;
- since the community is composed by hundreds/thousands of people, if this risk does become reality, then we'll be able to see it coming and to prepare for it;
- however, our whole system is mostly based on open-source programs.

Thus, we give it a moderate impact.

To evaluate the likelihood of this event, we took into account the following:

- there has been a rise in open-source programming and in its popularity;
- due to the fact that there are many people working on it.
- Thus, we give it an unlikely likelihood.

We evaluate the risk of the company that supplies the information system shutting down with a risk factor of 4 out of 10, so **low**.

To evaluate the impact of this event, we took into account the following:

- we can create a contingency on the contract that states that if the company stops working, we're free to update the software with third parties without any additional costs;
- if the company stops working, it won't immediately affect Sushi Go since it's business model isn't in constant change, which reduces the need for constant updates of the information system, which means that the same version is enough to work with for a considerable amount of time

Thus, we give it a moderate impact.

To evaluate the likelihood of this event, we took into account the following:

- the reputation of the open-source program supplier is very big, it's worked with great organizations, such as WWF, Toyota and Danone;
- the provider with which we suggest Sushi Go works with has several years of experience.

Thus, we give it a very unlikely likelihood.

We evaluate the risk of bugs occurring with a risk factor of 4 out of 10, so **low**.

To evaluate the impact of this event, we took into account the following:

- usually, bugs are minor disturbances in a program and only affect specific processes
- bugs are fixable

Thus, we give it a negligible impact.

To evaluate the likelihood of this event, we took into account the following:

- one of the main problems of open-source programs
- the information system will be heavily tested during implementation, reducing the risk of bugs
- there is a vast amount of people using the same program as we suggest, increasing the probability of bugs having already been detected and solved by others

Thus, we give it a possible likelihood.

We evaluate the risk of errors occurring with a risk factor of 4 out of 10, so **low**.

To evaluate the impact of this event, we took into account the following

- errors, typically, aren't as easily solved as bugs

Thus, we give it a minor impact.

To evaluate the likelihood of this event, we took into account the following:

- as errors have bigger impacts than bugs, they're also easier to spot
- the vast community that uses the same program will probably already have detected and solved them
- together with bugs, errors are also one of the main problems of open-source

Thus, we give it an unlikely likelihood,

As we can see, the risks we've identified all rate between low and and medium low, and, indeed, if we calculate a weighted average for each risk, we get an average risk factor of 4.25, which would be classified as low risk.

8.2. Risk evaluation for Licensed solution

We evaluate the risk of the licensed program's development being interrupted with a risk factor of 5 out of 10, so **medium low**.

To evaluate the impact of this event, we took into account the following:

- unlike with an open-source program, there aren't large communities developing the program, thus there is no warning signs that give **SushiGo** some time to react and prepare
- as with the other solution, the whole information system heavily depends on the licensed program

Thus, we give it a significant impact.

To evaluate the likelihood of this event, we took into account the following:

- the product is one of the main streams of revenue for the firm

Thus, we give it a very unlikely likelihood.

We evaluate the risk of the company that supplies the information system shutting down with a risk factor of 4 out of 10, so **low**.

To evaluate the impact of this event, we took into account the following:

- we can create a contingency on the contract that states that if the company stops working, we're free to update the software with third parties without any additional costs;
- if the company stops working, it won't immediately affect Sushi Go since it's business model isn't in constant change, which reduces the need for constant updates of the information system, which means that the same version is enough to work with for a considerable amount of time.

Thus, we give it a moderate impact.

To evaluate the likelihood of this event, we took into account the following:

- the provider of the program has a vast experience in the market and is one of its leaders
- unlike an Open-source program, firms are susceptible to the market itself which creates variables the company can't control

Thus, we give it a very unlikely likelihood.

We evaluate the risk of bugs occurring with a risk factor of 3 out of 10, so **very low**.

To evaluate the impact of this event, we took into account the following:

- usually, bugs are minor disturbances in a program and only affect specific processes
- bugs are fixable

Thus, we give it a negligible impact.

To evaluate the likelihood of this event, we took into account the following:

- one of the main advantages of licensed programs is the lack of bugs
- the information system will be heavily tested during implementation, reducing the risk of bugs
- there is a vast amount of people using the same program as we suggest, increasing the probability of bugs having already been detected and solved by others

Thus, we give it an unlikely likelihood.

We evaluate the risk of errors occurring with a risk factor of 3 out of 10, so **very low**.

To evaluate the impact of this event, we took into account the following

- errors, typically, aren't as easily solved as bugs

Thus, we give it a minor impact.

To evaluate the likelihood of this event, we took into account the following:

- as errors have bigger impacts than bugs, they're also easier to spot
- the vast community that uses the same program will probably already have detected and solved them
- together with bugs, errors are rare in licensed programs (at least in comparison towards open-source)

Thus, we give it a very unlikely likelihood,

As we can see, the risks we've identified all rate between very low and and medium low, and, indeed, if we calculate a weighted average for each risk, we get an average risk factor of 3.75, which would also be classified as low risk.

8.3. Risk comparison between solutions

Taking into account the opportunity cost of not using open-source programs and choosing to go with licensed ones, we believe that the trade-off is for **SushiGO** is better if it adopts the solution vision we're presenting: open-source.

The money the licensing would require can be invested in new shops and put the company ahead on the learning curve, giving it competitive advantage.

9. Signatures

Accepted and agreed by:	Accepted and agreed by:
SushiGo Executive Director	AAPRT General Manager
Date and place:	Date and place:
(Authorized Signature)	(Authorized Signature)