

Project - Professional Shop Outlet (PRO)

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Group 2 - Business Case

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# Version

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# Team Name

PluggedIn

# Team Members

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# Case Area

Pro Shop

# Project Name

Professional Shop Outlet (PRO)

# Introduction

**Cypress Garden Golf Academy** is the world's premier golf school. At the academy, Students receive extensive in person training from some of the sports' best professional golfers. This as well as first class facilities, and greens allow students immerse themselves in the dear sport they love. Many of the alumni cherish their time at the academy, and the lessons learned here can make a great beginning into the world of golf as a professional player. Some of sports greatest players come from this academy, and continue to play the sport at the highest level.

# Executive Summary

**Cypress Garden Golf Academy** is looking to expand its offerings to students by building pro shop at the academy. Building the pro shop on campus will allow students to buy, and rent the equipment they need at the campus itself, instead of off campus, which will greatly improve the appeal of the academy. The shop, like the rest of the campus, will use some of the most modern technologies available. In order to properly run the shop, the shop will need an inventory management system, a point of sale, as well as an online web presence. This will allow the academy to increase efficiency, automate administration of equipment and inventory, and improve the quality of service they can offer their students.

# Project Impact

The Professional Shop Outlet will have a huge impact at the academy. It is expected that the project will affect CGGA in the following ways:

* **Strategic-** Access equipment on campus and online this will increase the time students will be able to spend on campus, and reduce the need to buy and rent elsewhere.
* **Operational-** Sales tracking, and inventory management will reduce the need for operational over head, and improve the efficiency of running the shop.
* **Customer Impact-** The latest golf equipment, and student discounts at PRO. Staff will be able to give knowledgeable information, and the shop will include helpful tips and information about the equipment that is right for them.
* **Financial-** PRO will also provide a new source of income for the academy for the online portion of the project, and improve efficiency of operating the shop, reducing the need for human hours.

# Value of the Project

PRO is an overall growth to the CGGA community. It represents an improved strategic value of providing students access to equipment faster, cheaply, and in a better fashion. The main improvement however will be the efficiency of the pro shop. Check out will be faster as every item will be itemized, and stored in a database. This will allow a cooperation between the in house system, and the website.

* 100% Accuracy of prices.
* Automatic tracking for rented equipment, with end of day receipts.
* 50% estimate reduced in time to check sales, and restock.
* 25% check out speed
* 24 hour online web presence

# Project Time Scale

Since the project is split into two systems, the in house, and the online presence. The initial in house system will only take an estimated month to setup for integration with the inventory management system. The online presence PRO will use will take an estimated development of six months until production, and an additional six for customer feedback, and operational improvements for a total of a yearlong development cycle. This will allow students to benefit from the project as soon as possible, and give input to the final website.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1st Month | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| POS setup  Infrastructure  Inventory Setup | Website Development | | | | **Website deployed** | Website Development  & Improvement | | | | | **Project**  **Completion** |

# Summary of Project

the **professional retail outlet** (**PRO**) is an automated inventory management system, and web store for CGGA, its goal is to

# Option Analysis

Here we will look at the estimated cost of running different solutions to the problem of infrastructure for our web based inventory, and web store systems.

## Implementation Options

1. On campus server & database
2. Cloud database

## Option One - On campus server

|  |  |  |
| --- | --- | --- |
|  | Estimated Initial Cost | Estimated Yearly Cost\* |
| Server (Small Business) | $ 800 | $ 1,000 |
| Software (OS, misc tools) | $400 | $ 0 |
| Point of Sale x2 | $ 800 | $ 300 |
| Backup Drive x2 | $ 300 | $ 0 |
| Workstation | $ 500 | $ 100 |
| Printer copier & Supplies | $ 100 | $ 100 |
| Misc | $ 1,000 | $ 500 |
| **Total Cost of Ownship** | **$ 3,900** | **$ 2,000** |

\*includes electricity, maintenance, and replacements

### Evaluation

Keeping the server close to the outlet means faster access times and less 3rd party dependency for the store. However it means increased electric and maintenance costs. The server a small business server will host both the website, and the database. Access times will be fast, as the server load is expected to be low compared to high end web enterprises.

The website itself will have almost complete control of the machine. Allowing the website to throttle up for work load as needed. Should the machine become overloaded with requests, additional servers can be bought and brought online alongside the original, but these are most likely growing pains, as the site is unlikely to grow beyond its intended user base.

The server will need to be backed up to two external drives in case of system fault. This will happen automatically and sometime in the night around two in the morning, as this is most likely to be the time will the least requests, and lowest workloads.

The drawbacks of this option are that any maintenance will have to be done on site, and crashes to the server will cause full system downtime, meaning both the site and inventory management system will both be down. This can only be fixed by installing additional servers to share work load. The shop will have to have a paper purchases contingency, if there are no additional servers, and the site will remain offline, or redirected to a soft host telling the user the server is down. All this said, the cost of an additional server is not prohibitive, nor the site down time, and required restoration like to last longer than a day. The server machine is likely to last a good 5-7 years before needing a replaced, or upgraded.

### Benefits of Ownership

* Reduced requirement of 3rd parties to host your services, servers are on campus and at arm's length
* Billed the at cost of running an inventory management system, and matching website, instead of the above cost of a 3rd party
* Increased control of how you want your systems to run, if you have a problem you can fix it.
* Reduced time for database requests, the server is in the back room, and has a fast response rate because its closer

## Option Two - Cloud storage

|  |  |  |
| --- | --- | --- |
|  | Estimated Initial Cost | Estimated Yearly Cost\* |
| Could Server | $ 0 | $ 2500 |
| Software (OS, misc tools) | $400 | $ 0 |
| Point of Sale x2 | $ 800 | $ 300 |
| Backup Drive x2 | $ 300 | $ 0 |
| Workstation | $ 500 | $ 100 |
| Printer copier & Supplies | $ 100 | $ 100 |
| Misc | $ 1,000 | $ 500 |
| **Total Cost of Ownship** | **$ 3,100** | **$ 3,500** |

\*includes electricity, maintenance, and replacements

### Evaluation

This option uses one of the cloud services, Microsoft azure, or Amazon cloud, to run both the website and inventory management systems. Cloud services are both reliable, and efficient in their use of data, and have automatic redundancy, and backup services. This means that the site will have close to a 100% up time, and will never lose data or go corrupt.

Cloud services bill their customers based on a scaling service, the more bandwidth, and memory you use, the more you have to pay, so calculating the server costs for a website and database can be extremely difficult. For this example it was chosen to try and match the server with on par ownership of a campus server.

The drawbacks of these types of services are that the cloud servers are not close to you facilities, and will have lower response times. The cloud also may be (and most likely will be) hosting other websites along side your website meaning that the site will most likely have to wait to be served before it can process a request, additionally slowing the request of the costumer by a little bit more.

The connection to the inventory management system is now also the mercy of the ISP, meaning that should the local shop lose connection to the internet, via supposedly some fault of the ISP, the shop will have to revert to a paper and pencil contingency until internet service can be reestablished.

### Benefits of Ownership

* Maintenance of servers is handled by the 3rd party, and is no longer a concern.
* Estimated 100% up time, of both website, and inventory management system.
* Scaling of service to the needs of CGGA, should the site become more popular than the intended user base, the cloud can expand the site's potential as needed.
* Reduced electric and cooling costs.
* Data is offsite, and secured in a server farm, and protected by the best industry security standards.

# Recommendation

|  |  |  |  |
| --- | --- | --- | --- |
| Cost at year: | 1 | 3 | 5 |
| **Campus Server** | **$ 5,900** | **$ 9,900** | **$ 13,900** |
| Cloud Server | $ 6,600 | $ 13,600 | $ 20,600 |

The cost of the campus server is greatly cheaper than that of the cloud based solution. It is also the most self reliant service, allowing expansion at a rate that CGGA requires, while remaining the most affordable. While the Cloud Server may be the most reliable, and scalable, is doesn't match the price of a campus server, even with the addition of a second campus server, which would increase reliability, and the price to $ 19,700 at five years, it is still more affordable.

* The speed for the campus server is much faster than for that of the cloud base solution.
* The campus server is much more affordable than the cloud based solution.
* A centralized server means the campus store is never without service, even if the internet should be down.
* Greater customization, and cost cutting for on campus, servers.

For these reasons PluggedIn recommends pursuing the **campus server solution** for the PRO project.