Project – Predic(t)ament

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# Executive Summary

This business case outlines how the machine learning project will address current business concerns, the benefits of the project and recommendations of the project. The business case also discusses detailed project goals, performance measures, assumptions, constraints, and alternative options.

## Issue

Because of an expanding client base, IowaMove has increasing requests for real estate agents to provide a comparative market analysis, which has put a strain on the workforce. Until now, there have been many reports of estimates which have been too broad and inaccurate. In order to provide more effective estimates to clients, IowaMove must move to an automated predictive solution.

## Anticipated Outcomes

Moving to a machine learning predictive solution will enable IowaMove to reach a larger client base, it will free time up from real estate agents and clients will receive a more accurate and precise predictions on the house price. This will lead to an overall higher quality customer experience.

## Recommendation

Various options and alternatives were analysed to determine the best way to leverage technology to improve the business processes and reduce the overhead costs within IowaMove. The recommended machine learning project will methodically compare similar accommodations and their prices of previous sales in the Iowa area and infer the listed price for a new accommodation. The inferred price should grow in accuracy over time as more houses are sold and the built product has more data to work with.

# Business Case Analysis Team

The following individuals comprise the business case analysis team. They are responsible for the analysis and creation of the Predic(t)ament Project business case.

|  |  |  |
| --- | --- | --- |
| Role | Description | Name/Title |
| Project Manager and Software Improvement | Manages the business case and project team. Advises team on software improvement. | Trainer |

# Project Overview

The Predic(t)ament Project overview provides detail for how this project will address IowaHome’s business problem. The overview consists of a goals and objectives for the Predic(t)ament Project, project performance criteria, project assumptions, constraints, and major milestones.

## Goals and Objectives

The Predic(t)ament Project directly supports several of the corporate goals and objectives. The following table lists the business goals and objectives that the Predic(t)ament Project supports and how it supports them:

|  |  |
| --- | --- |
| **Business Goal/Objective** | **Description** |
| Timely and accurate reporting | Machine Learning tool will allow real-time and accurate reporting of new listing prices. |
| Improve staff efficiency | Less time needed to search for relevant information in the stack of records. Automatically processed freeing up time of agents |
| Reduce overhead costs | Fewer staff required will reduce the company’s overhead |

## Project Performance

The following table lists the key resources, processes, or services and their anticipated business outcomes in measuring the performance of the project.

|  |  |
| --- | --- |
| **Key Resource/Process/Service** | **Performance Measure** |
| Reporting | The Predic(t)ament project should correctively report the price of an accommodation within a ±10% tolerance from tested data. |
| Data entry | Eliminate agent’s data entry work by allowing clients to enter their data directly via a web application given an IP address of the hosted application. |
| Staff Resources | Elimination of 3 agents which are no longer required as several functions will now be automated. |

## Project Assumptions

The following assumptions apply to the Predic(t)ament Project.

* All staff will be trained accordingly
* Funding is available for training
* Funding is available for purchasing hardware/software for web-based system
* All department heads will provide necessary support for successful project completion

## Project Constraints

The following constraints apply to the Predic(t)ament Project.

* The project needs to be completed by 11/08/19 23:59:59

## Major Project Milestones

The following are the major project milestones identified at this time.

|  |  |
| --- | --- |
| **Milestones/Deliverables** | **Target Date** |
| Project Kickoff | 24/07/19 |
| Phase I complete –  Create an application which will predict an accommodation’s price based on inputted values | 31/08/19 |
| Phase II complete –  Create an interactive front end for your application which allows users to input data, and have predicted data returned to the screen | 02/08/19 |
| Phase III completed –  Host the application on the cloud which can then be accessed online. | 09/08/19 |
| Closeout/Project Completion | 11/08/19 |

# Cost Benefit Analysis

The following table captures the cost and savings actions associated with the Predic(t)ament Project, descriptions of these actions, and the costs or savings associated with them through the first year. At the bottom of the chart is the net savings for the first year of the project.

|  |  |  |  |
| --- | --- | --- | --- |
| **Action** | **Action Type** | **Description** | **First year costs (- indicates anticipated savings)** |
| Host application on the cloud | Cost | Cost to rent space on the cloud to host the application. | £400.00 |
| Software Creation | Cost | Cost to employ QA Consulting to produce working software | £20000.00 |
| Software Training | Cost | Cost to train employees as well as documentation. | £3600.00 |
| Reduce agent staff by 3 employees | Savings | An immediate reduction in overhead equal to the annual salary of 3 estate agents. | -£64,500.00 |
| Net first year savings |  |  | £40,500.00 |

Based on the cost benefit analysis above we see that by authorizing the Predic(t)ament Project, IowaHomes will save £40,500.00 in the first year alone.

# Alternatives Analysis

The following alternative options have been considered to address the business problem. These alternatives were not selected for several reasons which are also explained below.

|  |  |
| --- | --- |
| **No Project (Status Quo)** | **Reasons For Not Selecting Alternative** |
| Keep the current system in place | * Unnecessary expenditure of funds for increased staffing levels * Continued occurrence of a high number of data errors * Poor and untimely reporting * Lack of automation |
| **Alternative Option** |  |
| Implement a software already built for estate agents | * Vendor’s lack of familiarity with our internal requirements |

# Approvals

|  |  |  |  |
| --- | --- | --- | --- |
| Approver Name | Title | Signature | Date |
| Jane Doe | President and COO of IowaHomes | C:\Users\Chris\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\EB667B4D.tmp | 22/07/19 |