2020_21 Hatfield Apple Tree Supplier System - HATS

Integrative Assignment Case Study

From: **Mr Bill Payer, CEO DoITSystems**
Date: **10-Oct-2020**
To: **your Team**
Subject: **Major Opportunity for DoIT: HATS - System**

I am pleased to inform you that DoITSystems has won a contract to support Hatfield Apple Tree suppliers to market and plan planting and deliveries.

Ms Penny Pincher, our Business Development Director and I visited the customer CEO, last week and she wrote the following "Interview Notes", which is your starting point. Ms Pincher believes she has captured all the essential requirements and is very busy at the moment but is prepared to accept questions you might have to clarify the customer's exact needs.

Part 2: Interview Notes

2020 HATS Feasibility Study

Notes on Meetings with the HATS Chief Executive Officer (CEO)

written by: **Ms P.Pincher, Business Development Director, DoIT Systems**

NOTE: the text in blue is relevant to the first stage of the project *[implemented for the DB module]*

1. Background

The HATS management require an additional system to support their marketing and planning for different varieties of apple trees and those grown from rootstock grafting. This is with the aim to enable the planting and marketing of HATS to be scheduled in the best way to meet the needs of the customers and the staff growing the apple trees to optimise the business marketing strategy.

The system is envisaged as a repository-style system to support a range of stakeholders with strategic decision-making about supplying apple trees. It is not a real-time, transactional system.

Remove Wedge from Rootstock — Fit Scion into Place — Wrap Union and Seal with Wax
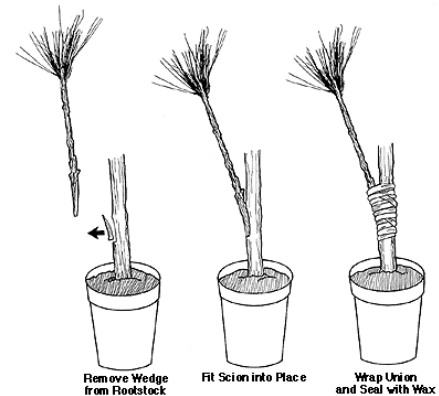
HATS wish to make use of internet and mobile technology to provide better facilities for potential customers. Initial prototype designs for their new sales system must be completed by the early Jan 2021, with working prototypes completed by April 2021. The best prototype will be awarded the contract to implement the HATS system, which must be in place by May 2021 so that implementation can be completed well before the main ordering period in April. The "best" prototype will be the one which, in the view of the client, has best captured the system requirements and provides the best implementation.

2. HATS - general details

Hatfield Apple Tree Suppliers (HATS) sell a wide variety of apple trees of differing varieties. The plants are of different ages and grown on different rootstock types, which determine the size of the tree when mature. Varieties have different attributes such as colour and size of fruit, when they need to be pollinated, when they fruit and whether they are a cooking variety, an eating variety or both. All new apple trees are grown by grafting part of an existing tree to a rootstock. This is the only way to maintain the variety. Growing from seed both takes longer and cannot guarantee the variety is maintained. A tree may also be unready to dispatch until a particular date and this needs to be recorded.

Customers select individual trees from the HATS stock, listed on the database, these are delivered at a particular time of year, but can be ordered at any time. The date and time each order was made should also be recorded, so that they can be serviced in ordered sequence. A customer can select any number of trees on one order, up to a maximum of 5. A customer can place a number of orders. Customer registration details are held on the database for ease if they re-order in the future. The customer is asked to supply their delivery address, including postcode, phone number and the system records the date they register.

Fruit trees are produced on an annual cycle (take a year to grow) and need to be ordered in advance. Whilst apple trees are best planted in autumn and early spring, they are not the best times to order given the time the trees take to grow. For example, a customer could place an order (in Summer 2020) for a tree grafted in Autumn 2019 and could not take delivery of the tree until Autumn 2020 the earliest for customers to plant at home. Or they could wait to plant in Spring 2021 (given trees are dormant in winter).

HATS expect customers to start ordering using the new system from May 2021. This will enable Growers to plan future tree growing and grafting to meet the needs of the customers.

3. HATS – orders and deliveries

Initially, customers and growers should be able to browse the catalogue of available trees using a range of criteria such as size, variety, etc. They should also be able to order specific trees listed as available in the catalogue, so that they can plan their tree planting. Information about trees will include the date from which they will be available for delivery. Customers should be able to state when they would like to take delivery.

The Delivery department will want to produce delivery timetables based on customer orders and on their plans for growing trees, to enable the trees to be packed and despatched. Dispatchers need to be able to identify deliveries to be made, make delivery arrangements, and inform the customers about the expected date of their delivery. Growers department will also want to know which trees need to be prepared for delivery. They may also want to change the date from which specific varieties are available depending on the weather.

Customers should be able to view their order and change the delivery date. Since deliveries are scheduled according to geographic areas, a customer wanting to change a delivery date should be able to see alternative dates for their area.

4. HATS - stock

By May, HATS will have a number of trees available for sale listed in their catalogue. These will have been prepared by the Growers based on the previous year's sales. The Head Grower is responsible for maintaining information about trees. Trees ordered in the summer/autumn of 2020 will not appear in the 2021-22 catalogue and will be handled using the old system. Trees appearing in the catalogue will be for delivery in late 2021-22. If a customer finds that the type of tree which they want to order has sold out, they should be able to put their request on the "reserve" list.

The growing of tree varieties by "grafting" is best done in the late winter/early summer. However, if a type of tree has sold out early, there may still be time to produce more trees. The Head Grower is responsible for identifying trees on the reserve list which can still be produced for delivery in 2021/22. She will inform the customers about whether their requests are feasible using the planting and delivery dates from the previous years as a guide. For example, if a variety of tree grafted in September 2021 had sold out in advanced orders for September 2022, then grafting more of this variety in June 2022 would have made more trees available for advance orders in June 2023 (which would be in addition to grafting in September 2022). Customers can then decide whether they want to take delivery or are prepared to wait the following year.

5. High Level Objectives for HATS System

The HATS prototype should be able to:

1. maintain information about available trees (CRUD)
2. allow growers to search and find information about varities of trees to graft
3. allow growers to review tree availability and plan grafting against customer orders
4. maintain information about registered customers
5. maintain information about customer orders
6. provisional delivery timeslots to be produced against customer orders
7. maintain a reserve list of orders for sold out trees.

4. Other Considerations:

Catalogue of HATS trees should be accessible on a web site to customers, dispatchers, and growers. The use of graphics, where relevant and useful, is considered desirable. HATS explicitly mentioned, use of colour codes to distinguish different tree types and accessibility to visually impaired users. The web interface should have an easy-to-use layout and show the HATS logo. Changes to the tree information must only be made by the Growers.

4.2 Out of scope

The following aspect of the system will **NOT** be considered at this stage:

1. Handling payments for orders
2. Processing customer orders placed under the old system
3. Costs for the website on the Internet/mobile technology
4. Timetabling, and scheduling, of deliveries being dispatched

5. HATS data design

In discussions with CEO, it has been established that the first priority of HATS is to have a way of managing and displaying the catalogue and maintaining order information, as well as providing facilities which allow interrogation/query for the purpose of planning marketing of growing trees. This however is only part of the much larger system which you will be expected to develop.

Penny Pincher

Assignment considerations

The above description provided by Penny Pincher's notes is a much broader view of the HATS system than that required for the DB assignment, which is only concerned with the section given in blue. The CS/ITDE assignment may incorporate some but not necessarily all of aspects required for the DB assignment. In addition, the CS/ITDE assignment GP1-3 may consider aspects of the system not required for the DB assignment.

N.B. please note that the above requirements described in this case study are provisional, initial considerations for the system. They are likely to change over time as stakeholder needs, and therefore the scope for the system, evolves, which is good practice for a real-world development project. For this purpose, for each assessment that follows (GP2-GP3), refer to the case study/updates provided with each assessment which will take precedence over the previous case study.