Software development doesn’t have to be **Hard**:

One District’s path to a new data collection and management system for mosquito and vector control and surveillance

Peter Bonkrude, MS
Shasta Mosquito and Vector Control District
“I have always wished for my computer to be as easy to use as my telephone; my wish has come true because I can no longer figure out how to use my telephone.”
-Bjarne Stroustrup

- Data Collection
- Technology continues to progress, making data acquisition easier and more cost-effective
- New operational needs require new technologies and solutions
- Data collection options can seem expensive and time consuming to implement
  - With such a large investment, deciding which option to choose can seem daunting
“Those who cannot remember the past are condemned to repeat it.”
-George Santayana

- In 2009, we embarked on a custom software solution
  - Drafted a white paper/project scope
  - Solicited project bids
  - Custom built software solution
  - This product, we call MOS (Mosquito Operations System) collected and processed all data for the District including, inspections, treatments, inventory, service requests, time accounting and adult mosquito route tracking
As our MOS software rounded it’s 9th season, the program was showing its age.

In order to transition smoothly to a new system, we knew we needed to start looking for a replacement at least 3-4 years before a replacement became mandatory.

So in 2016 we began demoing existing software platforms to research how the marketplace had evolved.

“The best way to get a project done faster is to start sooner.”
-Jim Highsmith
“Those who plan do better than those who do not plan, even though they rarely stick to their plan.”
-Winston Churchill

- During this research time a group of programmers that had worked on the original MOS project had struck out on their own and had begun development on a product that would eventually be named VeeMac.

- The platform they were presenting was a departure from products we had experienced.
  - Highly configurable—Virtually any data you want to collect you can, with little involvement with the developers.
  - Small “footprint”
    - Small software size, small DB size—can be hosted or stored locally.
    - Works on a most Windows PCs.
    - Simple install.
    - Automatic syncing to ensure data is shared by all users in real-time.

- Look and feel
  - A simplified UI that can be customized to a user’s needs.
“Walking on water and developing software from a specification are easy if both are frozen.”

- Edward V Beard

◊ In late 2018, we put together a contract and scope and began collaborating in earnest with a goal of a 2020 cutover to the new VeeMac system

◊ With the groundwork VeeMac had already laid, and the District’s involvement, providing additional mosquito control knowledge and the ability to test the software in real life situations the project began
“Measuring programming progress by line of code is like measuring aircraft building progress by weight”
-Bill Gates

- As the development progressed, we established several communication and progress assessment tools to ensure we were moving in the right direction regarding design while being realistic with our timeline
- The first thing we implemented was a Trello Board. Trello allows us to project manage and discuss development issues in real-time, without the need for a meeting
- Created a development “sprint schedule” that highlighted milestones, ongoing tasks, and allotted time for each element
- Created a District shared Excel Spreadsheet using Office 365, that was organized by program section so testers could log issues identified
- Scheduled regular Zoom meetings to update progress and work through design elements
“Most of the world will make decisions by either guessing or using their gut. They will be either lucky or wrong.”

-Suhail Doshi
The New VeeMac System

- Inspection Records
- Treatment Records
- Inventory Management
- Time Accounting
- Import/Export of .kml/.shp files
- Threshold visual configuration
- Vector Surveillance (mosquitoes, ticks, etc.)
- Service Requests
- CalSurv connectivity
“Wisdom comes from experience. Experience is often a result of lack of wisdom.”

-Terry Pratchett

- Lessons Learned:
  - You can always use more time
  - Finding communication tools is essential when working remotely
  - Clearly defining and maintaining project scope will aid in keeping deadlines and reducing “project creep”
  - Collaboration often leads to compromise, so early on decide what items are required versus optional
  - Involve staff early and often
  - Client referrals and lists are important, but customer service is more important
Special Thanks to the SMVCD Staff and Board of Trustees

Peter Bonkrude, MS
District Manager
Shasta Mosquito and Vector Control District

www.shastamosquito.org
pbonkrude@shastamosquito.org

Gregg Lanzing
Steve Fry
info@veemac.com
www.veemac.com