Capstone Synthesis Paper

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Purpose

The purpose of the paper is to elaborate on why the idea(s) driving the purpose and premise of the synthesis prototype project demo constitutes a feasible synthetic understanding of the foundational topics covered in the MS-CISBA program.

The Prototype Project

The Problem

The problem I would like to solve is having a system to track assessments that are performed for customers at Managed Service Provider (MSPs). It is specifically targeting MSPs that follow the TruMethods model.

Professional Interest

I currently work for an MSP (Managed Service Provider) called Runbiz, and I am a Technical Alignment Engineer. A part of my job involves performing alignments. These alignments usually require me to meet with one of our business contacts at a customer's. location and walk through the building to see all the technology. I also ask a lot of questions, basically trying to understand the business and how they leverage their technology. This involves pre-assessment work, going through all the systems and networks we have access to, and reviewing their configurations to our standards. After an assessment, I must process my notes (in OneNote) and pictures. I then update our documentation in ITGlue for that customer and make recommendations to vCIOs at Runbiz so they can build budgets and plan projects for the customers.

To assist me with this process, we utilize software called LCI or Lifecycle Insights. Specifically, it has an assessment function. It does significantly more, but the feature I use the most is the assessment

function. LCI does a lot of great things, but the assessments seem to be an afterthought. Not to mention there is no app, and the web app does not adapt well to a phone or tablet.

System To Prototype

The ideal prototype would be a system where we can build out custom questions and answers that help us see if the customer is in alignment. It would need to be mobile friendly. If we could take site photos through it so they automatically uploaded to OneDrive or our computers or (dreaming big) auto-upload to ITGlue. It needs to be able to create tickets in our ticketing software. It needs to be able to take the questions that are answered negatively and create recommendations on how they need to solve them. An audio recording and potentially a dictation function would be very useful. It would also need an open notes section that allows writing with a stylus.

My prototype due to time limitations is much smaller in scope. My prototype amounts to a Python and Django based application. It is currently limited to three HMTL views essentially calling information from a database. These views are Customer Summary, Technology Inventory, and an Assessment view. Customer Summary includes the customer's name, information about them, recent assessments, current Recommendations, machine inventory, and two graphs. The Technology Inventory is just a raw list of all devices for all customers but it has filters set up so you can sort through the data more easily. It also can be sorted by the column you click on. The final view Assessment is currently limited to one customer. It shows their name and lists out all the assessments for that customer. It shows the date of the assessment, score, percent complete, status, site location, assessment template used, and shows the Alignment Engineer that performed it

Four Curriculum Areas

Cybersecurity and Networking (CN)

For the first of the Four Curriculum Area, Cybersecurity and Networking, is the simplest for this prototype to show. This is caused by the very nature of the assessments which include auditing customers

networks. These audits include looking through network device configurations and seeing if they align to the MSP standards.

The questions themselves are directly inspired by cybersecurity best practices such as the CIS Framework. Most questions are based on the MSP standards they are trying to align a customer to. These standards look to other standards such as NIST to base itself upon.

As I discussed in my first Evolution assignment my competencies, skills, and knowledge in terms of Networking and Cybersecurity are the highest of the four curriculum areas. This is primarily caused by work experience and has been enhanced by the classes I took during my graduate program. Of the two, Networking and Cybersecurity, I am more proficient in Networking but everything I seem to do I have cybersecurity on my mind.

During my first Evolution assignment I discussed my prototype with one of my previous professors, Dr. Jennex. I was unsure how it would show Cybersecurity and Networking. He gets the credit for giving me that the very purpose of the prototype is Cybersecurity and Networking based. He also provided me with practical assessment templates he has used.

Software Systems (SS)

For the second of the Four Curriculum Area, Software Systems, is the second simplest for this prototype to show. This is because of how the prototype is currently designed. It is directly based off assignment work in CIDM 6330 Software Engineering/Systems Development with Dr. Babb.

The prototype is coded in Python and utilizes Django and HTML. As I previously stated, it is currently limited to three HMTL views essentially calling information from a database. These views are Customer Summary, Technology Inventory, and an Assessment view.

As I discussed in my fourth Evolution assignment my competencies, skills, and knowledge in terms Systems Development would be the second best of the four. I had experience scripting in my career and coding during my undergraduate degree but none of that had touched Python. All my Python coding

experience has been given to me through this graduate program. My first-time coding in Python was CIDM 6303 Technical Foundations of CIS.

During my fourth Evolution assignment I discussed my prototype with Dr. Babb. We discussed how I could take what we worked on in his other course CIDM 6330. He also expressed a need to be realistic in scope. He didn't want me to shoot for the moon and then have nothing functional to turn in. We then worked together to negotiate the scope of the prototype.

Business Analytics (BA) and Data Management (DM)

For Business Analytics (BA) and Data Management (DM) I choose to combine them together here due to just how integrated the two of them are and during my Evolution assignments these were combined. The previous two curriculum areas stand out on their own while BA and DM stand on each other's shoulders (DM on bottom and BA on top).

This prototype can show these two-curriculum areas by the way it is and could manage its data and process it. The big idea was to have a big data set that was a consolidation of data from several sources automatically pulled in via API calls. There could then be automatic graphs created based on this data such as machines with and without active warranties or a bar graph showing the count of workstation operating systems and each column could have section for the major OS like windows 10 or 11. You could also apply some intelligence to the data by looking for EOL hardware or software and have it automatically generate a report and recommendations to resolve the problems.

This prototype only scrapes the surface of this "Big Idea". I've created a SQL database with several tables including a technology_inventory table housing fake and automatically generated data. I have then created two basic charts on the customer summary screen to show machines with warranties and without and I've made a bar graph showing the distribution of operating systems for a specific customer.

As I discussed in my second and third Evolution assignments of the four curriculum areas these two are my weakest in terms of my competencies, skills, and knowledge. During my career that has been no need for me to know about Business Analytics and Data Management. All my experience for these two has been in my undergraduate and graduate degrees.

During my work on these two Evolution assignments, I met with one of my previous professors Dr. Abraham Sen. He encouraged me to build out business rules and diagrams of how the application should operate. This could be used as a starting point and guide for the application. It could also be used to show the way things should work so if it ever operates against that it can be caught and resolved so it is within the application's design. He also pointed me the project I had worked on for 6350 Data & Information Management as I guide for these rules and diagrams.