Reducing Health Care Costs with Predictive Analytics

How Harris Logic harnesses SAP HANA to improve Behavioral Health Care

Harris Logic selected EV Technologies to assist in modernization and advanced analytics for their proprietary technology, Stella. Stella is already an amazing platform. It allows disparate entities to overcome the hurdles of data sharing of criminal justice data and protected health information in a full OCR-compliant way.

This case study outlines how we partnered with Harris Logic to implement SAP HANA, SAP BusinessObjects, and SAP Predictive Analytics to improve behavioral health outcomes for the criminal justice system.

Predictive Analytics

The premise of our partnership was simple: given the many years of history and client detail, could we accurately make predictions on which clients would be high utilizers of resources or would run the risk of recidiviziing. These two classifications of clients often comprise the highest cost for insurers, state, and local governments.

We embarked upon a pilot project to determine the feasibility of the solution. With 30 months of history, we leveraged SAP Predictive Analytics to use 29 months of history to determine if we could predict what actually took place in month 30. The results were fantastic and the success criteria were all met within 8 weeks.

The process to effectively identify high utilizers and those that would recidivize consisted of only 55 variables in the data set of de-identified clients. Using SAP Predictive Analytics Automated Analytics mode initially, we were able to quickly identify the relevant variables in our models (one per each type of client), a contrast of the predicted vs. actual scores, and the confidence interval for our models.

At the end, we demonstrated with high confidence health outcomes that would allow a caregiver to give more effective and targeted care to their clients. These two new models are the first in a set within Stella that will revolutionize how they deliver care.

8 Weeks for Pilot   **99%** Prediction Accuracy

"This tool will allow me to completely redesign the clinical process and provide the right amount of care at the right time." — Executive Director of Mental Health Provider

From Zero to SAP in 60 Seconds

Really fast data is obviously a huge perk in the investment in SAP HANA, but SAP HANA's capabilities as an application platform made our solution complete. Two key architectural components of SAP HANA helped make Stella 3.0 a success: its predictive engine and OData support. With the generated source code from SAP Predictive Analytics and extending
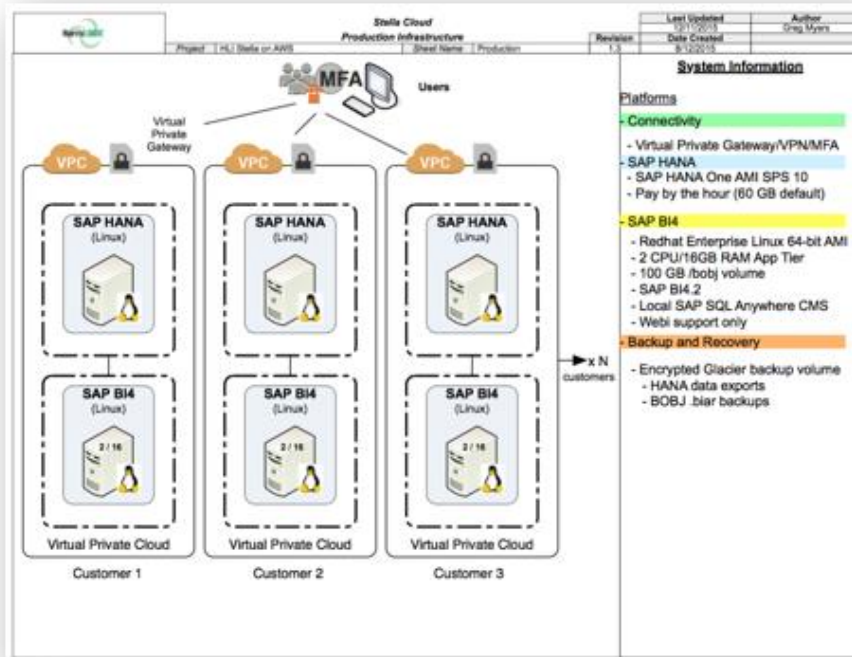
that through the embedded PAL libraries in SAP HANA, we are able to simply integrate real-time predictions into the Stella application itself. We can score and store data as it streams in, or, based on other variables, we can produce the prediction on demand as client data is accessed. That's pretty powerful stuff. Second, we take advantage in this release of the ability to easily generate OData services on this platform to expose our data.

Tightly Integrated Business Intelligence

Harris Logic was already ahead of the game in delivering advanced BI on SAP BusinessObjects as a part of their existing solution. The SAP BusinessObjects BI platform gives us the ability to create tightly integrated BI inside of Stella. Stella 3.0 augments exisiting BI created with Web Intelligence with SAP Lumira and SAP Design Studio. Through SAP Lumira, the platform also allows advanced users to go deeper with their data analysis providing limited and importantly, achievable, self-service BI.

Cloud Hosting for Simplified Deployment and Adoption

Amazon Web Serivces (AWS) was instrumental in allowing us to rapidly prototype and scale landscapes that accommodate Harris Logic's growth strategy. Using the AWS HIPAA Cloud Compliant environment, we have architected a secure solution to implement Stella for Harris Logic nationally. This includes single tenant environments, pilot light DR, and more, all easily deployed with AWS CloudFormation for rapid expansion needs. Embracing cloud architectures is especially relevant where Harris Logic engages state and local governments: where the task can be arduous at times to stand up new infrastructure and software in government environments.
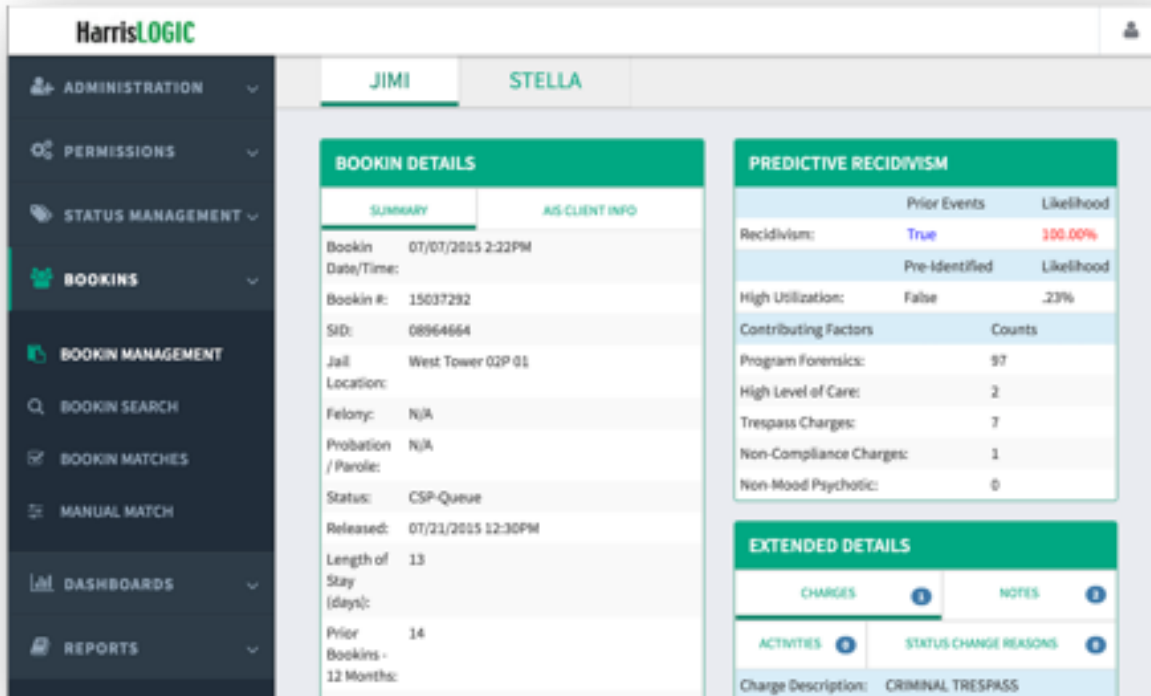

Modernization

A major theme with SAP to its customers is less disruption. But what about the customer that doesn't already own SAP in any investment? Stella 2.0 leveraged the Java stack and specifically, the Grails framework extensively to deliver content via a browser. While supported within Stella 2.x, there wasn't a significant focus to provide a responsive

experience to end users initially. In changing the architecture to SAP HANA fundamentally, we embarked on two main paths to be as efficient with costs and time as possible.

New User Experience

In partnership with our top notch User Experience partners at Integrity, we started with a facelift for Stella 3.0 in the existing framework that was lighter and more responsive, providing on-the-go access for Mobile Crisis Units. In addition, the revised workflows and integration of the Predictive Recidivism component gives clinicians the best possible information to give the best possible care.

Java Side Car

With extensive use of other frameworks and libraries and a strong desire to reduce disruption, the really sound choice was to retain the existing Java stack as a side car to the SAP HANA platform. That's not to say some day we'll redesign the UX to run natively on SAP HANA. Using the existing Grails framework and specifically, GORM for data connectivity, the exercise to transition the existing data and model was a simple exercise in generating new DDL that was SAP HANA compliant then exporting the data from Microsoft SQL Server into SAP HANA. No additional modeling outside of Calculation Views to power our UX changes were necessary in this initial release.

Final Word

In just eight weeks, a well-defined pilot with meaningful success criteria and an amazing partnership proved that the opportunity to do something really special in the field of behavioral health care. Harris Logic and EV Technologies partnered to bring altruistic goals into a modern and progressive technology stack to better help people in need of care. It also demonstrated that SAP HANA has benefits that reach well beyond SAP traditional Business Suite customers and into the world of application development.

ΞV technologies

info@evtechnologies.com
+1 314.227.0115

SAP Partner