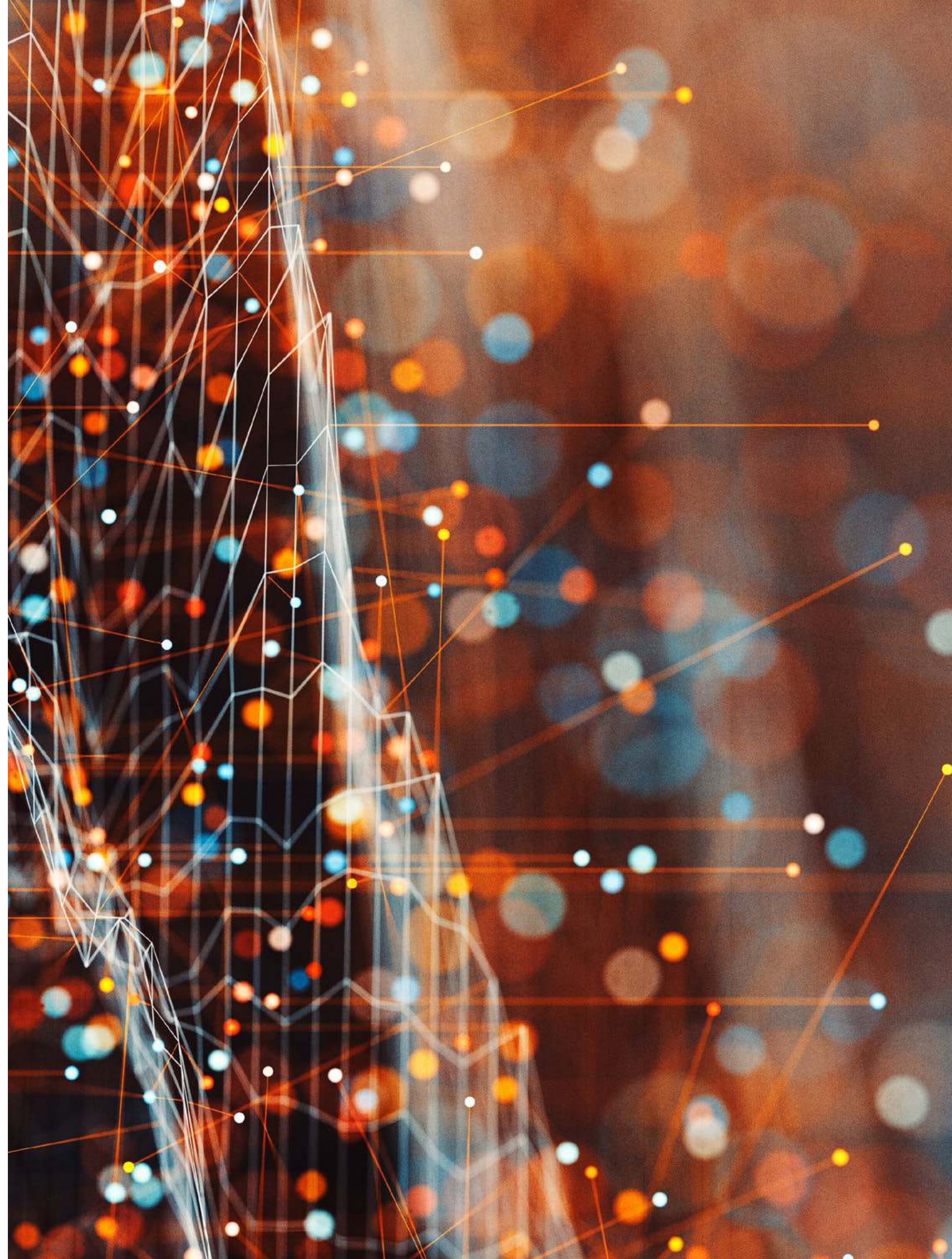


From Insight to Action

Create Smart Apps with Data Science





Advanced analytics is a team sport. Data scientists, citizen data scientists, business users, and developers need flexible and extensible tools that promote collaboration, automation, and reuse of analytic workflows. Algorithms are only one piece of the advanced analytic puzzle. Companies need to infuse predictive analytics into their critical business processes.

To illustrate this, let's consider the case of Telco X and see advanced analytics & data science in action.



It takes a village to create and deploy smart apps with data science. It's not just data scientists, but IT and others working together to achieve a common goal. In this case, the goal is extending relevant offers to customers of Telco X.

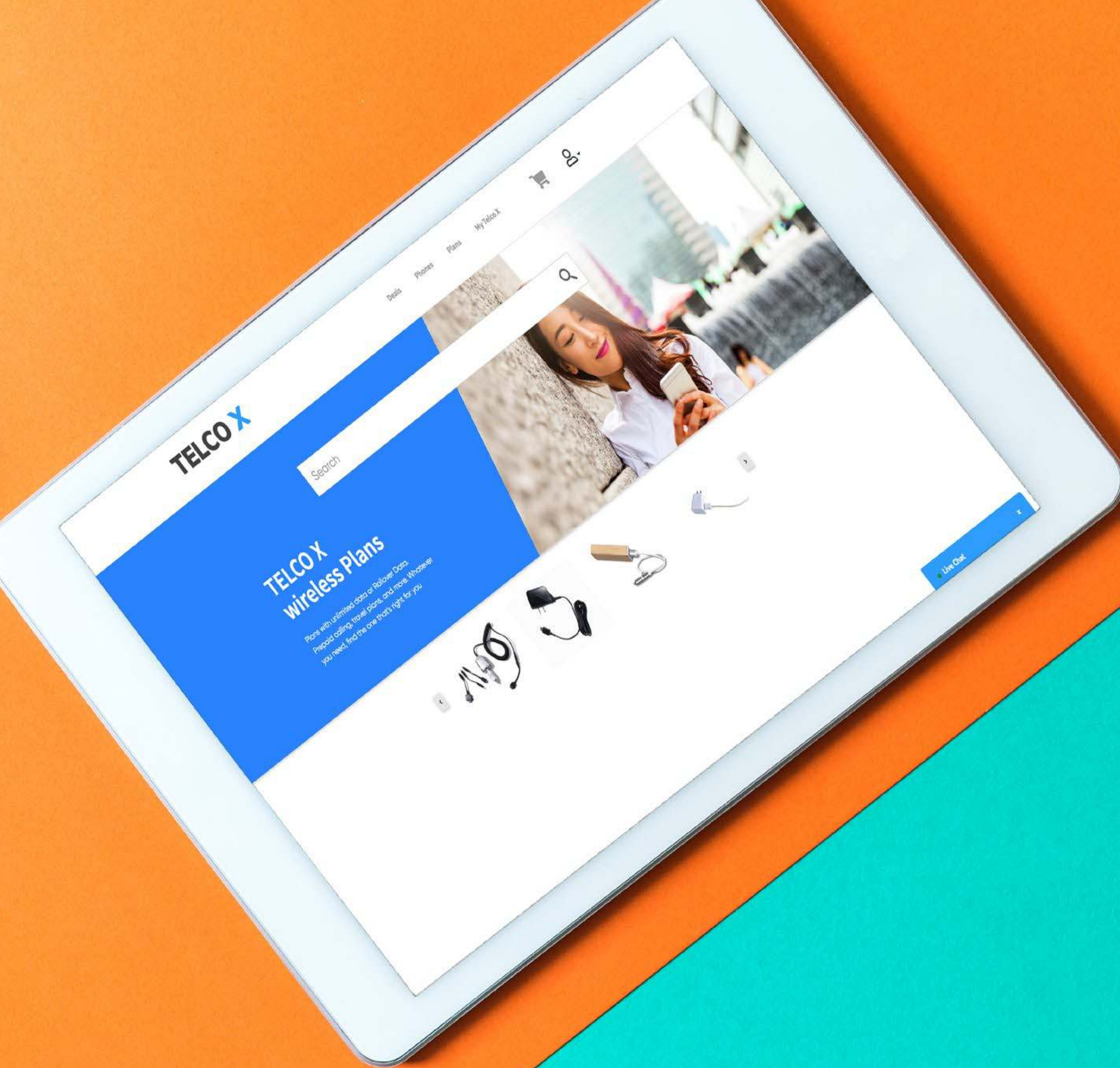
Anthony is a Telco X customer in need of a new smartphone and charger.

Maggie is a marketing professional who monitors smartphone marketing campaign performance through a KPI dashboard.

Alexa is a citizen data scientist who assists Maggie in optimizing the current campaign.

Danielle is a data scientist who creates a new propensity model that provides better predictions on likely buyers.

Kelsey is a developer who puts the new propensity model into production.



Step 1: The Customer Need

Telco X already has a campaign running for the newest model smartphone, but it's not targeting the right customers, resulting in a low conversion rate.

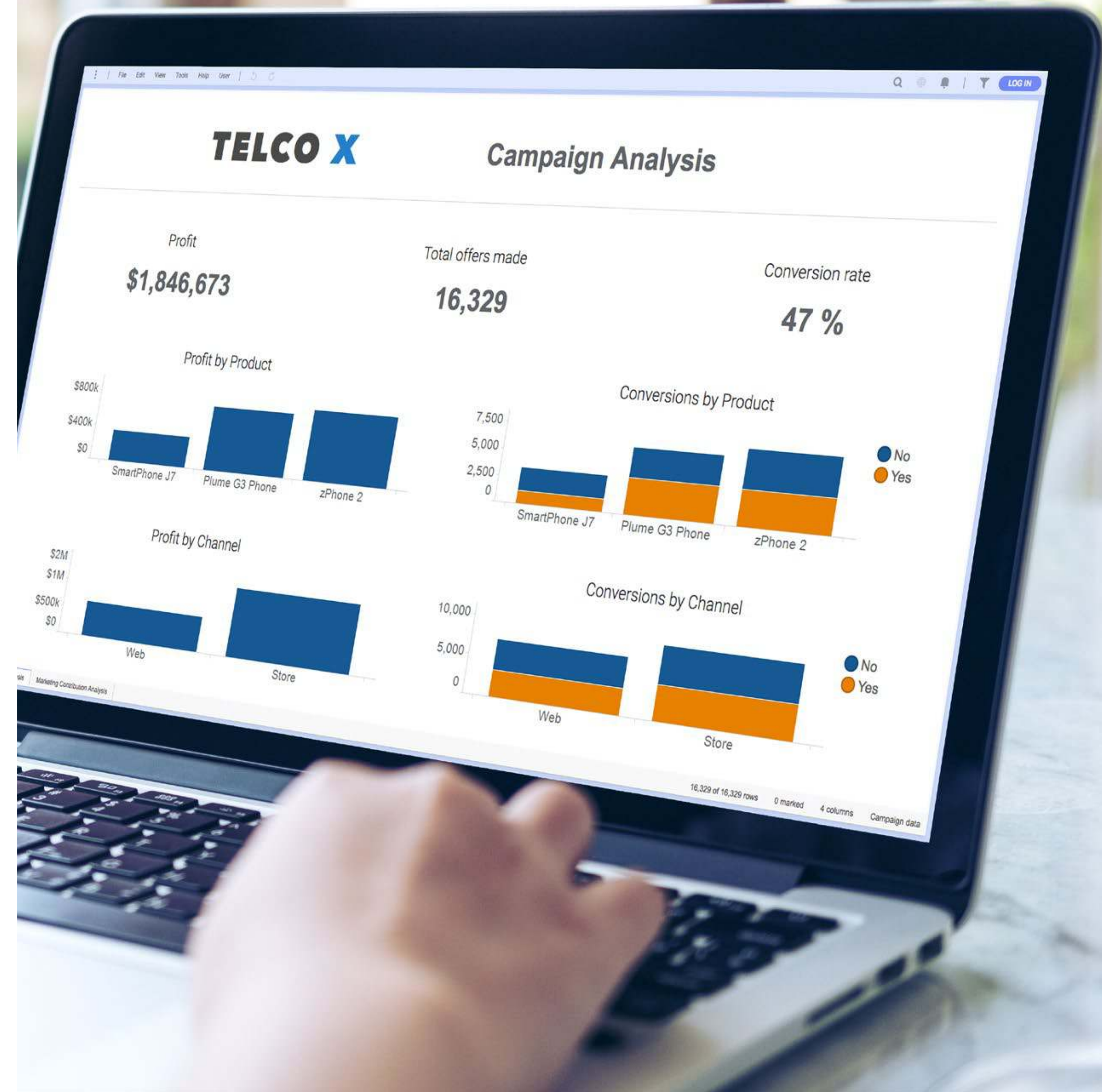
This is confirmed when the customer, Anthony, wants to purchase a new phone. He searches for his dream phone on Telco X's website but finds that it is too expensive. He was not offered a discount through the campaign's model.

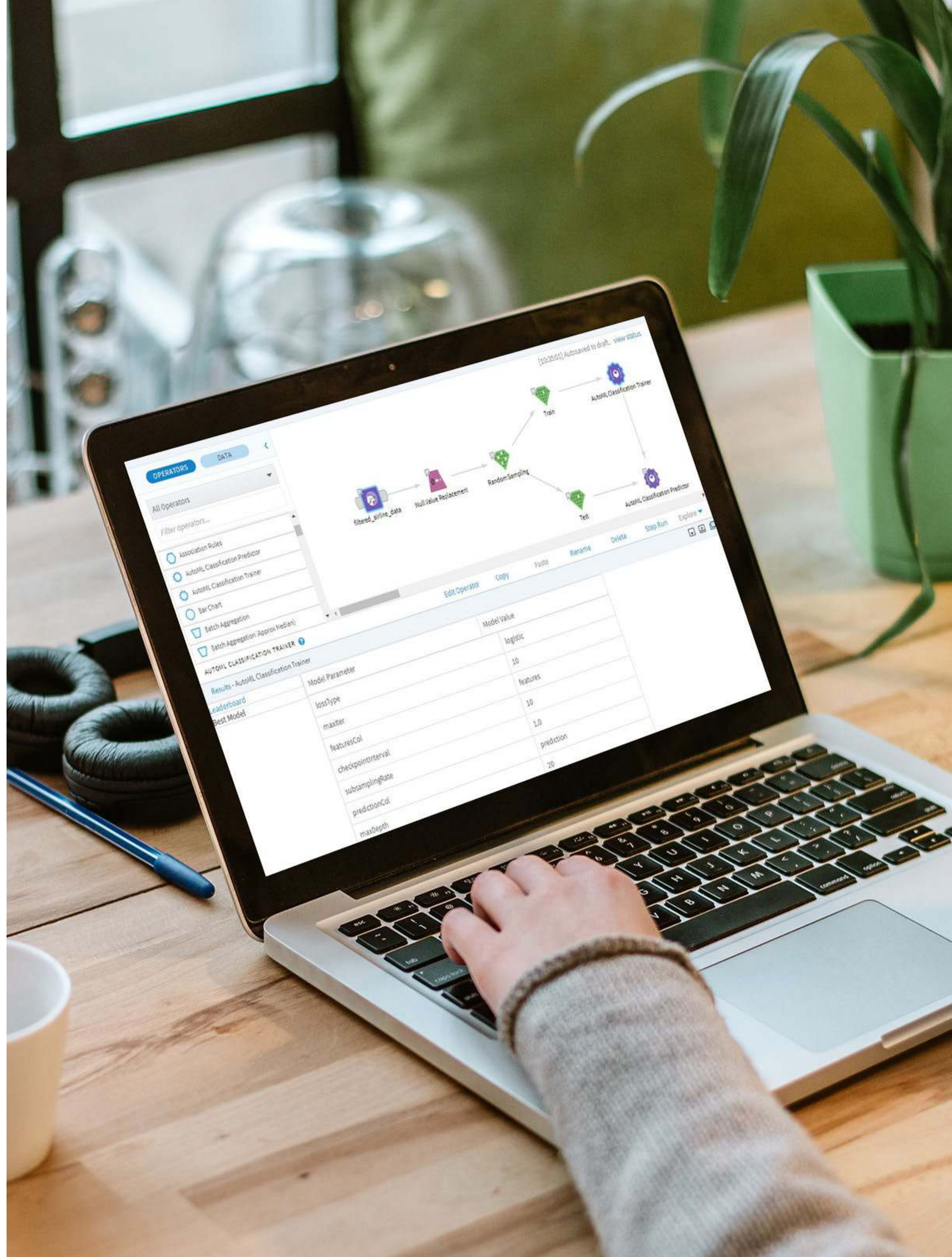
As a result, Anthony decides not to purchase the phone now and instead will wait for a sale.

Step 2: Monitoring Promotional Activities

Maggie, a Telco X marketing professional, analyzes the most recent promotional activities across the country. She looks at the drivers for purchases made on the website, finding that most people who buy are driven to the product page through search results.

Maggie notices that the campaign for the new smartphone is not performing as expected. She decides to see if the data science team can help. She calls Alexa, her go-to citizen data scientist.





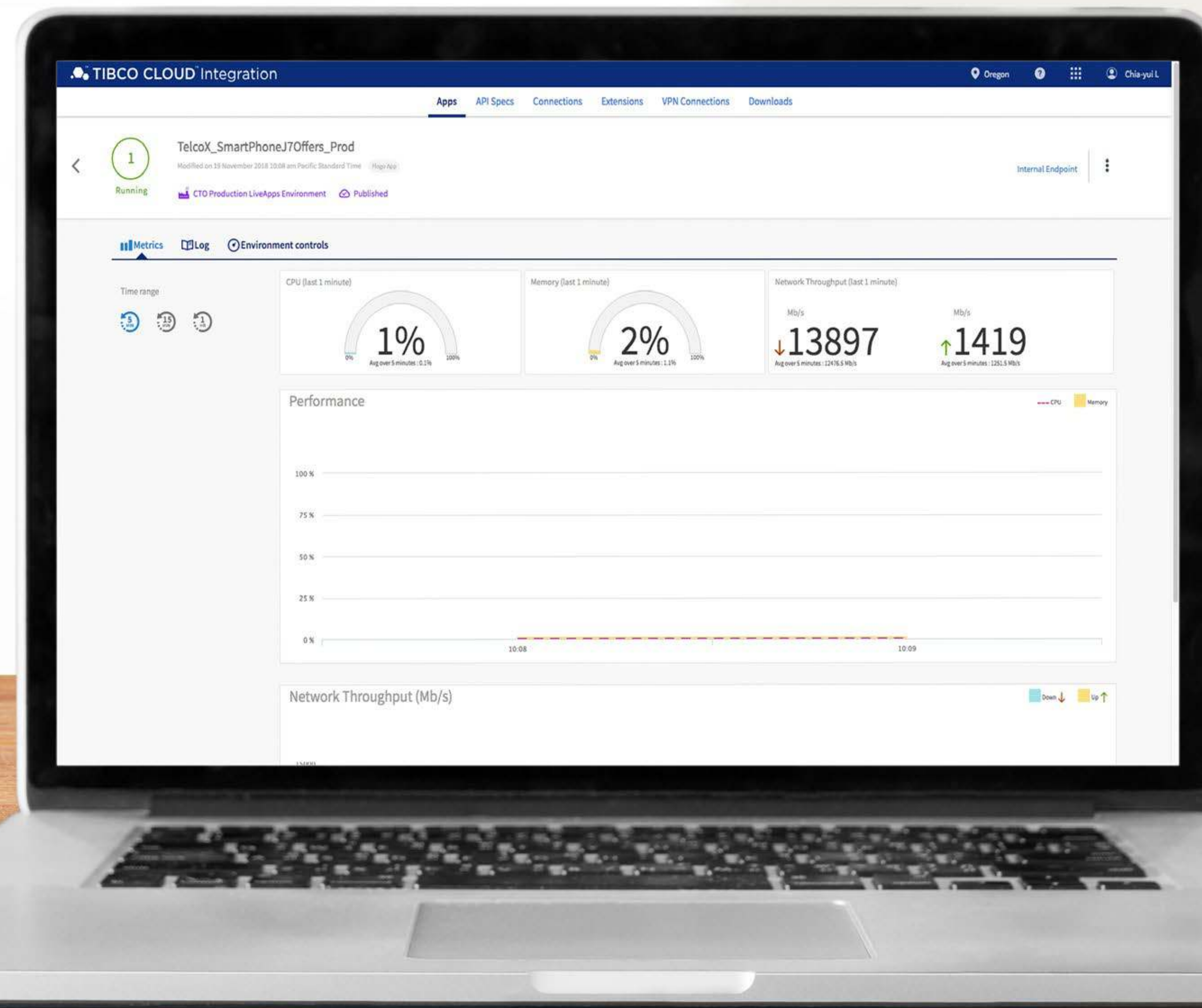
Step 4: Reusable Data Science

Danielle, a data scientist quickly hops into action. Using a reusable template she has created, she pulls together a new propensity model that provides a better prediction on likely buyers.

Machine learning is used by the data scientist to create the model using a point-and-click visual workflow that runs an AutoML routine to produce a list of models that may work. The models calculate a predicted probability using algorithms such as recursive partitioning (C&RT, CHAID), random forests, boosted trees, neural nets, and more. With a TIBCO Data Science workspace, Danielle is able to use a Python script to repetitively run a workflow node to find optimal parameters.

Since this model will be used by Telco X's website that receives a high volume of traffic, the runtime scoring environment has to support concurrent users and have a low response time. Telco X's IT team has implemented the scoring environment in Java. Danielle simply creates Java score code from the model and registers the model with the model management system for the necessary approvals. The model governance team approves the model and the Java score code can now be handed over to the IT team.

Elsewhere, there are applications that may also use the service. One such example is a process-based application at a customer service contact center. Danielle easily deploys the model with a few clicks to make it callable by other applications via an API.



Step 5: Deploying to Production

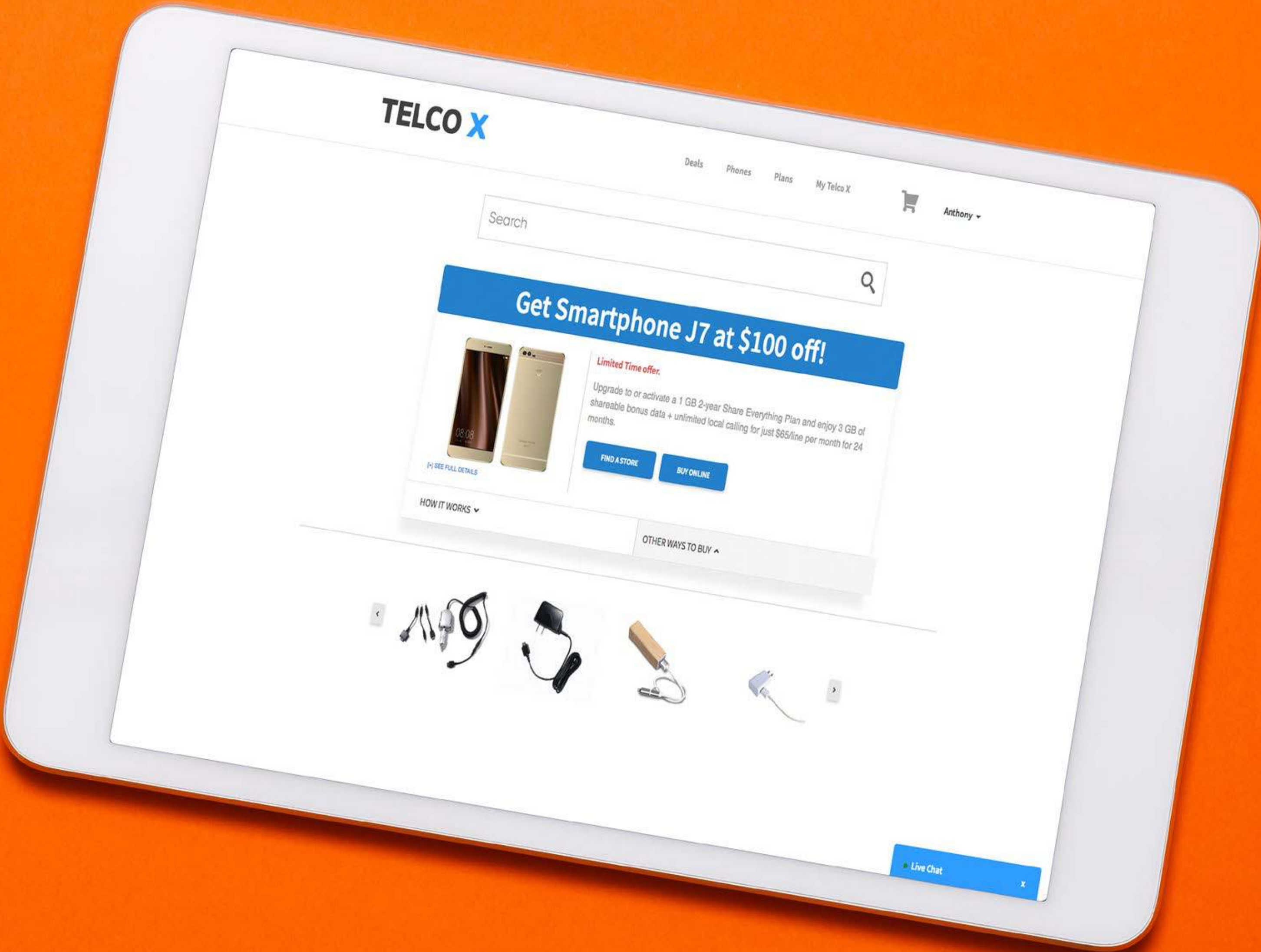
Kelsey, the developer, integrates the score code of the propensity model with the scoring server, which requires a bit of coding. This is the scoring server used by Telco X's website.

Additionally, the model is put into effect in the customer service contact center by IT. TIBCO® Connected Intelligence Cloud provides low-code environments for IT to construct applications such as this one.

Step 6: A New Offer Presented to a Customer

The model is deployed to the website. When Anthony returns to the website, he is shown an offer. The offer is the result of the new propensity model created to target and incentivize customers to purchase the phone. Offers can be made using any application in the cloud.

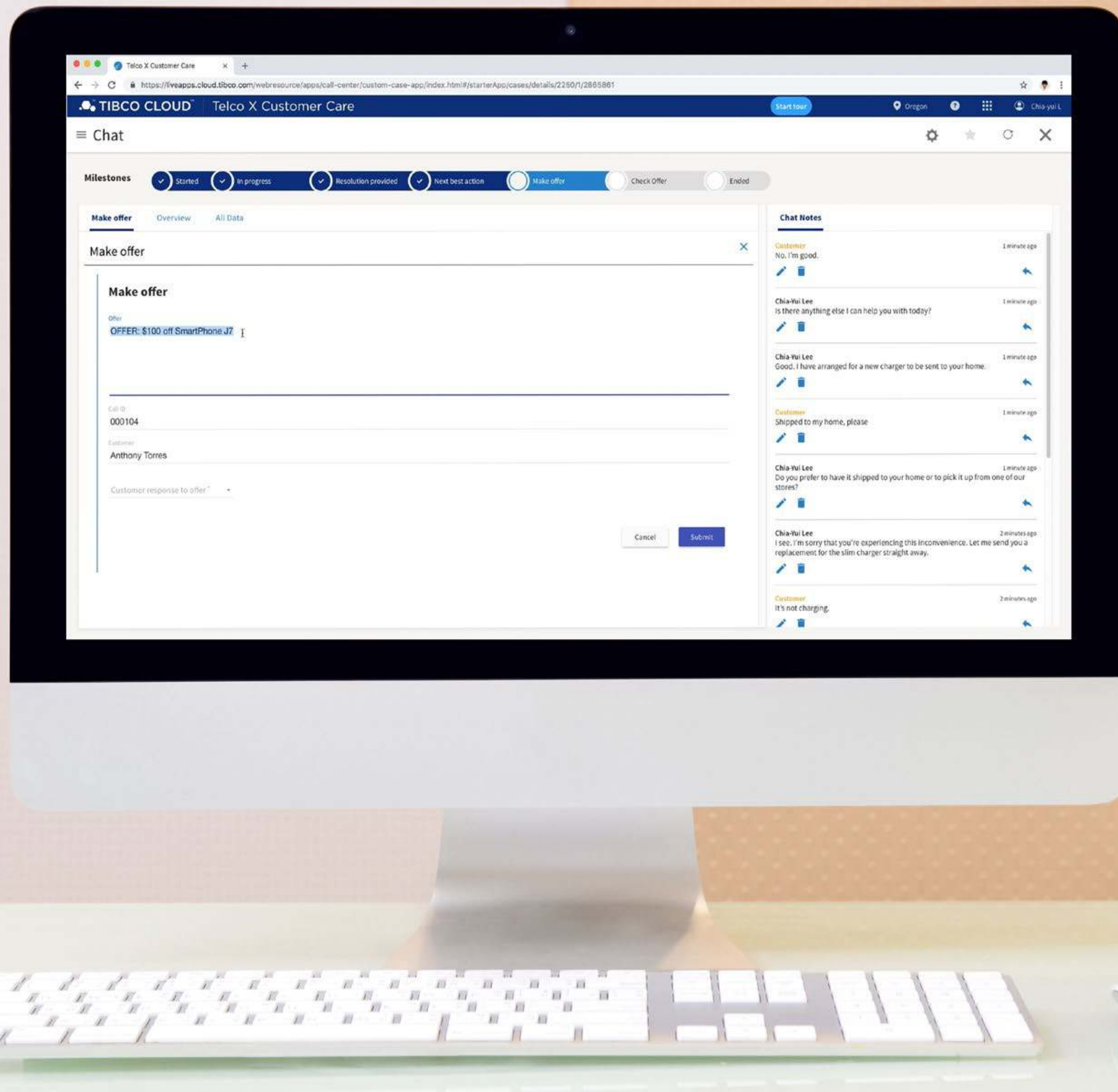
The offer gets to the right customer because of the improved targeting model. The right customer here is the one who is interested in the phone. Once the model is deemed successful, it is monitored and used on other channels.



Step 7: Model Operations and Monitoring

Analytic operations, otherwise known as IT, check to see if the model is running properly in production, with good performance and no data drift.





Step 8: The Customer Service Rep

Suppose Anthony gets the smartphone offer on the website and adds the phone to his cart. Instead of making the purchase immediately, he contacts Customer Service to replace the charger he bought earlier. To handle the request, the customer service representative uses a customer service contact center application, which, as we saw earlier, uses the service from the propensity model.

Since Anthony hasn't checked out the smartphone, the customer service application recommends it as an offer for the representative to propose after he replaces Anthony's charger. (Anthony was selected to receive the offer by the propensity model that was added to the call center.) The representative offers the discount to Anthony, who accepts it. The offer is made possible through the TIBCO® Data Science scoring service available on the TIBCO Connected Intelligence Cloud.

Do more with TIBCO Data Science

With TIBCO Data Science, you can create intelligent services and deploy them wherever they are needed to make informed decisions for predictive maintenance, customer service, risk, fraud, route optimization, and more.

For data scientists and analytics leaders who want to focus on innovation and on solving the organization's most complex problems, TIBCO Data Science offers a comprehensive and open analytics portfolio. These capabilities include the latest machine learning techniques that are accessible via a simple drag-and-drop user interface or via user coding. You can empower cross-functional teams to collaborate and automate routine tasks. You can scale data science across the business with reusable templates that are easily deployed into production—and you can use industry-leading model management, monitoring, and governance to deliver results the organization can understand, trust, and act on.

