

Predictive decisioning

300-level live demo script for
Cloud Pak for Business Automation V21.0.3

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Introduction

Thank you for attending this predictive decisioning demonstration.

Today I'll show how IBM Cloud Pak for Business Automation uses machine learning to enhance customer retention offers. You will learn how to integrate Watson Studio Machine Learning with the Cloud Pak to predict business outcomes. These predictions are used by automated decision services to customize retention offers, lower customer retention costs, and eliminate many paper-based processes.

Business users can quickly start creating and using predictions to improve their everyday processes.

Let's get started!

1 - Reviewing the manual call center process

1.1 - Show SkyTalk current manual process

Narration

SkyTalk, a telecommunications provider, is losing many of its best customers to competitors. SkyTalk needs to reduce customer churn. Let's review the written customer retention policies that call center management implemented.

Action 1.1.1

- Show SkyTalk's Retention Policy document, which was opened during the demo preparation.

The screenshot shows a PDF document titled "Retention Policy.pdf" with two pages visible. The first page is a cover sheet with the title "SkyTalk Marketing Division 2019 Customer retention offers". The second page contains a table with two columns: "Eligibility" and "Next Steps". The "Eligibility" column lists requirements such as being eligible for a retention offer, calling for service or operations problems, and no specific contract condition. The "Next Steps" column outlines a four-step process: confirming the customer's email address, getting the latest survey version from the intranet, entering the email in the "submit survey" field, and clicking send. Below this table is a section titled "Customer upgrade" with a note about upgrading customers to higher rate plans. A separate table for "Customer upgrade" is also shown, with "Eligibility" listed as "See table bellow" and "Next steps" including offering the upgrade, upgrading the rate plan in the ERP, and notifying the customer.

Eligibility	Next Steps
<ul style="list-style-type: none">When eligible retention offerCustomer calling for service or operations problemsNo specific contract conditionNo customer condition	<ol style="list-style-type: none">Confirm the customer's email addressGet the latest survey versionon intranet.skynet.com/customerRetentionSurvey/Enter the customer email in the "submit survey" recipient fieldClick send
Cost: <ul style="list-style-type: none">US\$ 0	Exceptions <ul style="list-style-type: none">Customer has been surveyed in the last 12 months(Refer to customer history)

Customer upgrade
Rate plan upgrade - Upgrade the customer from their actual plan to the upper one to provide them with more services and customer advantages

Eligibility	Next steps
<ul style="list-style-type: none">See table bellow	<ul style="list-style-type: none">Offer the upgrade offer to the customerUpgrade the customer rate plan in the ERP (Customer-profile-Management)Notify customer

Narration

Call center agents were asked to understand various retention offers and manually pick the 'best' option to retain the client.

Agents could not make insightful real-time decisions based on SkyTalk's existing customer information. The guidelines were also implemented inconsistently.

SkyTalk's customer retention costs skyrocketed, while attrition remained steady. Management decided to create a new call center application leveraging decision automation and machine learning to provide customer retention offers.

2 - Modeling the business rules

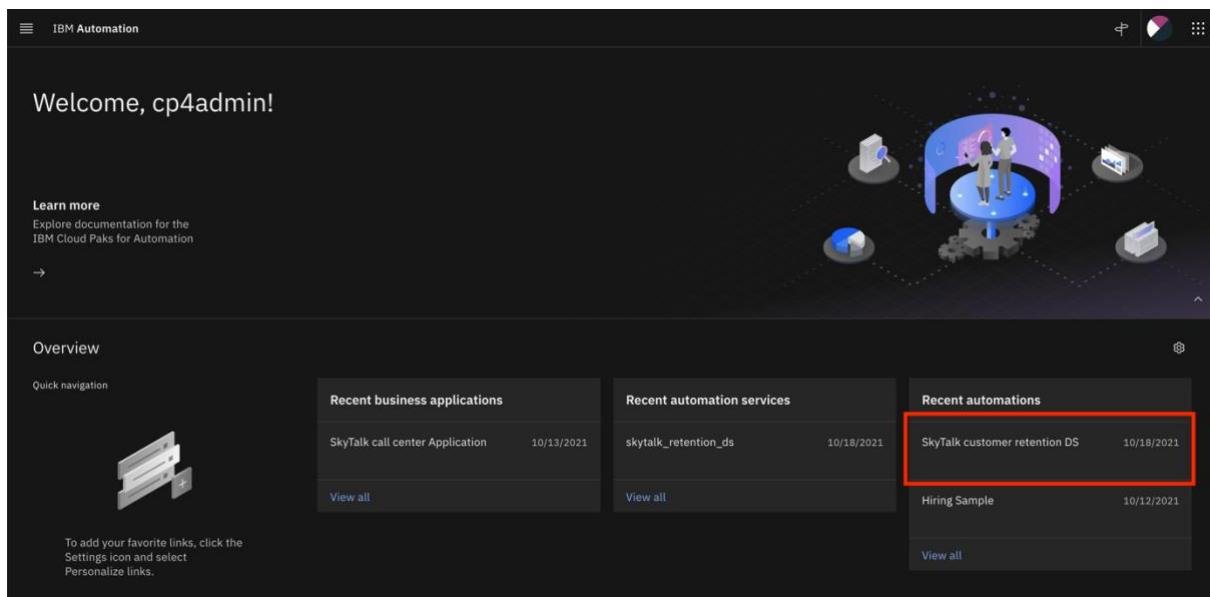
2.1 - Review the components of SkyTalk's retention decisions

Narration

A business analyst in the customer care division uses machine learning and decision automation technologies to configure the call center's new retention offer application. The business analyst writes the business rules to generate retention offer recommendations.

Action 2.1.1

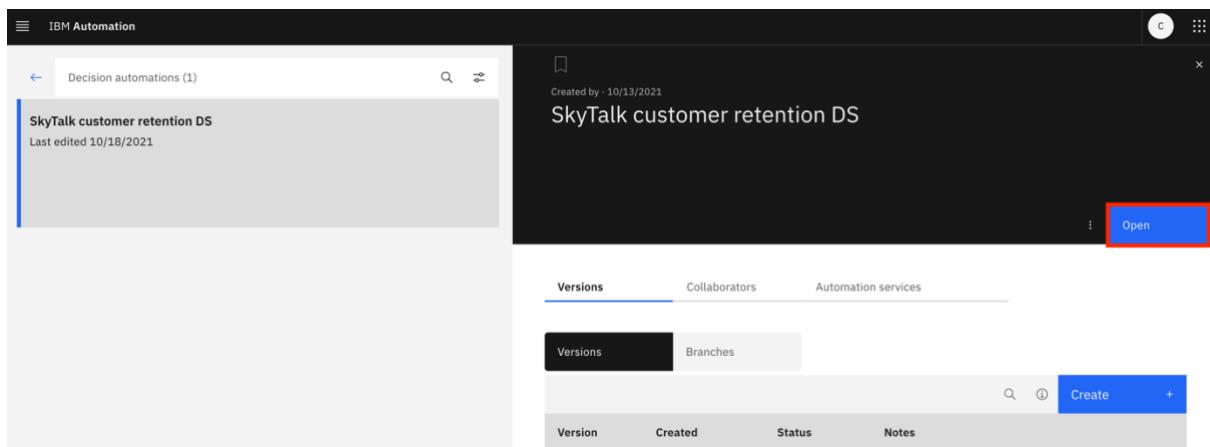
- Access the Business Automation Studio on the IBM Automation home page window, opened during demo preparation. Then, click **SkyTalk customer retention DS** (DS stands for Decision Service).



The screenshot shows the IBM Automation home page. At the top, it says "Welcome, cp4admin!". Below that is a "Learn more" section about the IBM Cloud Paks for Automation. The main area features a 3D illustration of two people standing in a circular interface with gears and data points. On the left, there's an "Overview" section with a "Quick navigation" icon. The right side has three sections: "Recent business applications", "Recent automation services", and "Recent automations". The "Recent automations" section contains a list with one item highlighted: "SkyTalk customer retention DS" (10/18/2021). A red box highlights this item.

Action 2.1.2

- Click **Open**.



The screenshot shows the "Decision automations (1)" page. It displays a single entry: "SkyTalk customer retention DS" (Last edited 10/18/2021). To the right, a detailed view of the "SkyTalk customer retention DS" automation is shown. The title bar says "SkyTalk customer retention DS" and "Created by · 10/13/2021". Below the title, there are tabs for "Versions", "Collaborators", and "Automation services". Under "Versions", there are buttons for "Versions" and "Branches". At the bottom, there are search, create, and add buttons. A red box highlights the "Open" button in the bottom right corner of the detail view.

Action 2.1.3

- Click **SkyTalk Initial retention DS.**

The screenshot shows the IBM Cloud Pak | Automation interface. The top navigation bar includes 'IBM Cloud Pak | Automation', a search bar, and various icons. Below the header, the page title is 'SkyTalk customer retention DS'. A sub-header 'Decision services (2)' is visible. Two decision services are listed: 'SkyTalk initial retention ...' and 'SkyTalk retention DS'. The 'SkyTalk initial retention ...' service is highlighted with a red box around its name. It has a detailed description: 'This decision service has to be connected to two ML models. Define them using an AutoAI experiment on the datasets "customer churn data.csv" and "customer LTV data.csv" in <https://github.com/codaa/automation-decisions...>'. Below the description are two green rounded boxes labeled 'Sample' and 'Machine learning customer loyalty'. The 'SkyTalk retention DS' service also has a similar structure with its own description and sample data.

Action 2.1.4

- Click **Retention offer.**

The screenshot shows the 'Models' tab in the IBM Cloud Pak | Automation interface. The page title is 'Business Automations / SkyTalk customer retention DS / SkyTalk initial retention DS'. The 'Models' tab is active, and the sub-tab 'Data and libraries' is selected. A search bar and filter options ('All models', 'Sort by name') are at the top. A table lists decision services. One row, 'Retention offer', is highlighted with a red box. The table columns are 'Name', 'Last updated by', and 'Last updated at'. The 'Retention offer' row contains the text: 'Recommend the best offer to make to a customer in order to prevent churn.' At the bottom of the table, there are pagination controls: 'Items per page: 100' and '1–1 of 1 items'.

Narration

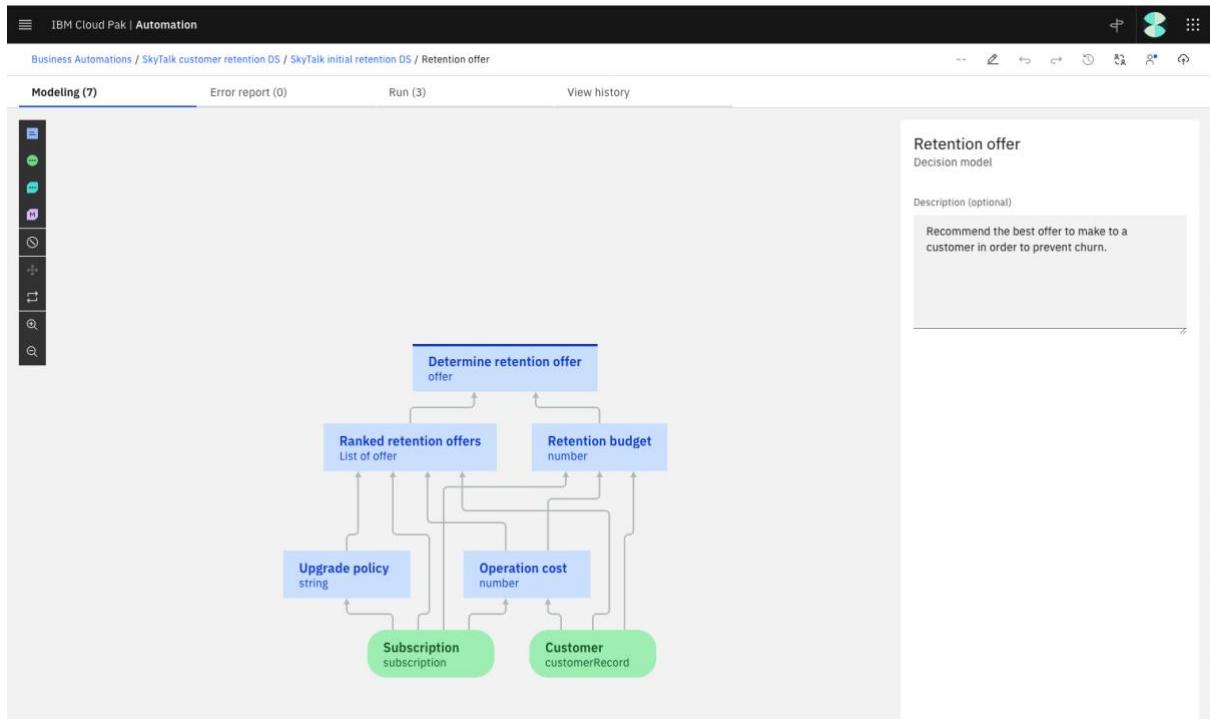
The business analyst creates an automated decision, called a decision service, using a hierarchical model of business rules. Each blue box represents a sub-decision. The green rounded boxes represent the input data.

The ‘Determine retention offer’ decision service requires two sub-decisions: ‘Ranked retention offers’ and ‘Retention budget.’ The retention budget decision will be enhanced with predictions to customize retention offers.

Let’s take a closer look at one sub-decision to see how the decision logic defines how decisions are made.

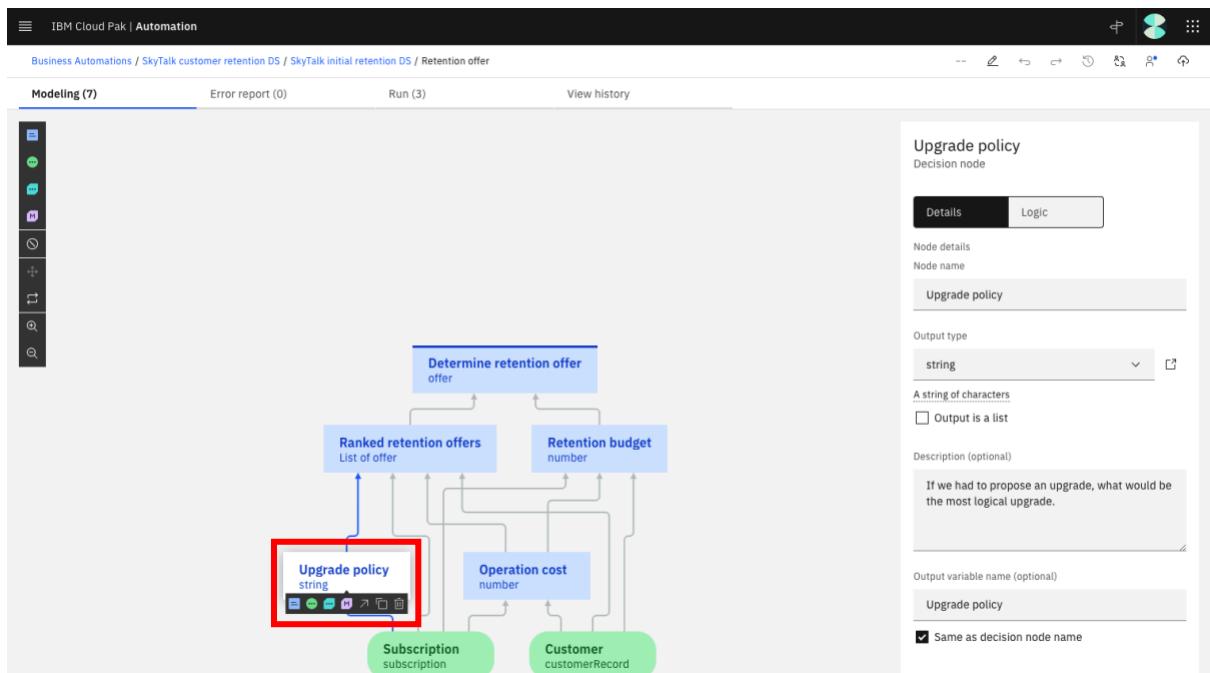
Action 2.1.5

- Review the **Decision model** of the **Retention offer**.



Action 2.1.6

- Click the **Upgrade policy** box.



Action 2.1.7

- Click the **Logic** tab.

The screenshot shows the IBM Cloud Pak | Automation interface. The top navigation bar includes 'IBM Cloud Pak | Automation', 'Business Automations / SkyTalk customer retention DS / SkyTalk initial retention DS / Retention offer', and various icons for navigation and search. Below the navigation is a toolbar with tabs: 'Modeling (7)', 'Error report (0)', 'Run (3)', and 'View history'. On the left, there's a sidebar with icons for different node types. The main area displays a 'Upgrade policy' decision node. A red box highlights the 'Logic' tab in the node's header. The node details show 'Node name' and 'Upgrade policy'.

Action 2.1.8

- Click **Upgrade eligibility table**.

This screenshot continues from the previous one, showing the 'Logic' tab selected for the 'Upgrade policy' node. The 'Logic' tab is highlighted with a blue border. Below it, the 'Upgrade eligibility table' section is also highlighted with a red box. The table is titled 'Determine retention offer offer' and contains a single row with columns for 'Rate plan', 'Usage', and 'Eligible to grade to'. The 'Usage' column has a value of '≥ 25' and the 'Eligible to grade to' column has a value of 'ESSENTIALS'. A red arrow points from the text 'Move the cursor over row 3 to show the equivalent rule in natural language.' to the 'Eligible to grade to' cell of the second row.

Narration

The upgrade eligibility criteria are expressed in a decision table. Each row corresponds to a specific eligibility business rule.

By hovering the cursor on a row, the analyst can review the business rule in natural language. In this example, a SkyTalk Gold customer must have a subscription usage of at least \$160 USD to be eligible for a Premium upgrade.

Action 2.1.9

- Show the **Upgrade eligibility table**. Move the cursor over **row 3** to show the equivalent rule in natural language.

This screenshot shows the 'Upgrade eligibility table' expanded. Row 3 is highlighted with a red box and a red arrow points to its natural language rule. The rule is as follows:

```
if
  all of the following conditions are true :
    - ( the rate plan of 'Subscription' is Gold )
    - ( the usage of 'Subscription' is at least 160 ) ,
then
  set 'decision' to "PREMIUM" ;
```

Action 2.1.10

- Click **Back to the diagram**.

The screenshot shows the IBM Cloud Pak | Automation interface. At the top, there's a navigation bar with 'IBM Cloud Pak | Automation', 'Business Automations / SkyTalk customer retention DS / SkyTalk initial retention DS / Retention offer', and various icons. Below the navigation is a header with tabs: 'Modeling (7)', 'Error report (0)', 'Run (3)', and 'View history'. The main content area has two main sections. On the left is a table titled 'Upgrade eligibility table' with the following data:

	Rate plan	Usage	Eligible upgrade to:
1	Basic	≥ 25	ESSENTIALS
2	Essentials	≥ 120	GOLD
3	Gold	≥ 160	PREMIUM
4	Premium	≥ 600	AMBASSADOR

On the right is a 'Upgrade policy' section under 'Decision node'. It includes a 'Details' tab (which is selected), a 'Logic' tab, and a search bar. The logic section shows 'Rules are applied in sequence' and lists an 'Upgrade eligibility table' rule.

Narration

The ‘Ranked retention offers’ top-level decision cycles through the list of eligible offers and selects the least expensive one that does not exceed the calculated retention budget for the given customer.

The ‘Retention budget’ sub-decision estimates the maximum amount SkyTalk should spend to keep the customer. The retention budget is calculated using two predictions: (1) the customer’s lifetime value, (2) and the customer’s propensity to churn.

In the next section, the business analyst uses IBM Watson Studio to create these two predictions.

3 - Creating the predictive models

3.1 - Show the data sources used for prediction

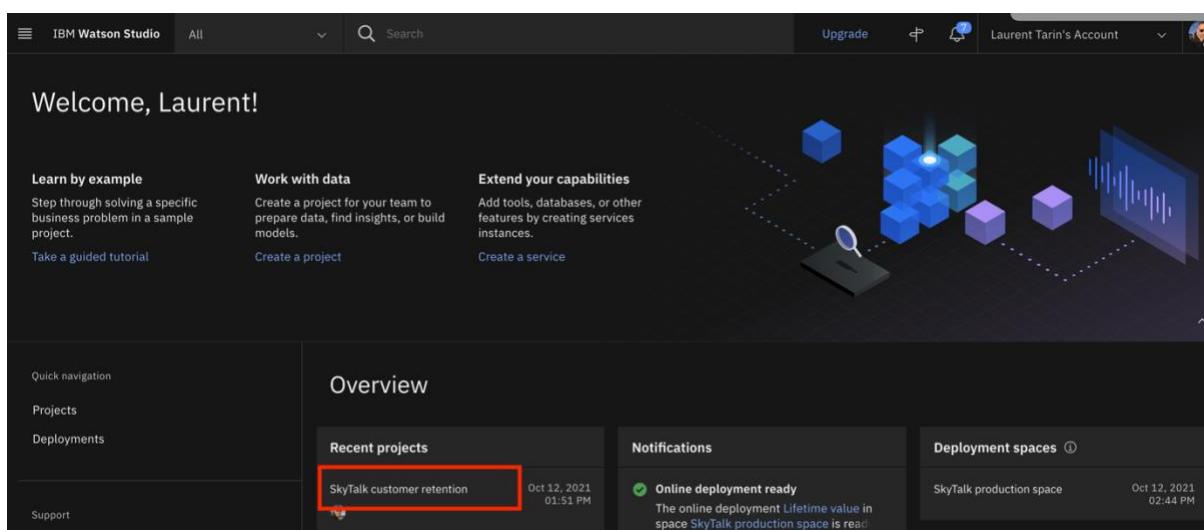
Narration

The business analyst creates and deploys the machine learning models used for the predictions.

Five years of data from SkyTalk's customer database has been loaded into IBM Watson Studio. The analyst will use this data to develop predictions for customer lifetime value and churn.

Action 3.1.1

- Click the **SkyTalk customer retention** project, which was opened during the demo preparation.



Welcome, Laurent!

Learn by example
Step through solving a specific business problem in a sample project.
Take a guided tutorial

Work with data
Create a project for your team to prepare data, find insights, or build models.
Create a service

Extend your capabilities
Add tools, databases, or other features by creating services instances.
Create a service

Quick navigation
Projects
Deployments
Support

Overview

Recent projects

SkyTalk customer retention Oct 12, 2021 01:51 PM

Notifications

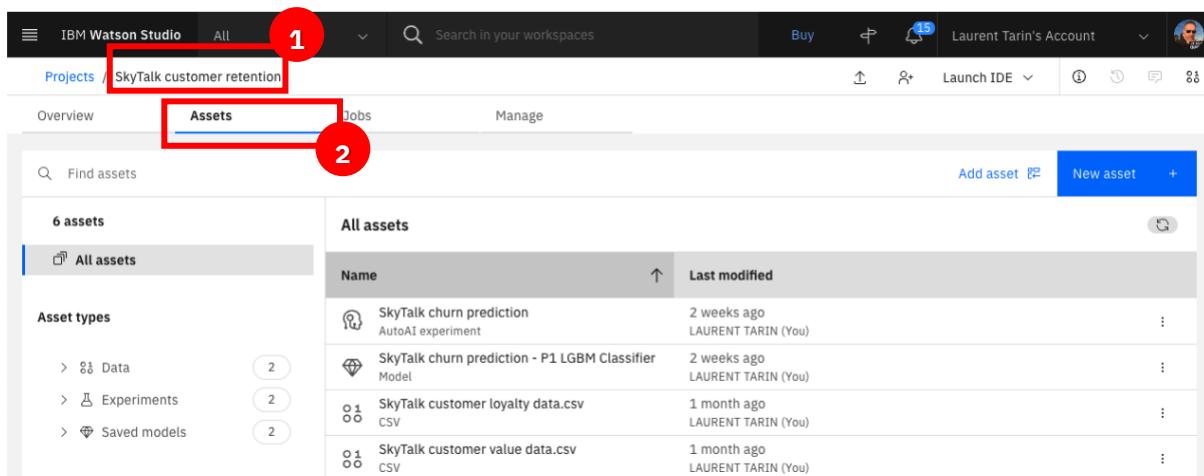
Online deployment ready The online deployment Lifetime value in space SkyTalk production space is ready

Deployment spaces

SkyTalk production space Oct 12, 2021 02:44 PM

Action 3.1.2

- Click **Skywalk customer retention** (1).
- Then, click the **Assets** tab (2).



IBM Watson Studio All Laurent Tarin's Account

Projects / SkyTalk customer retention

Buy Launch IDE

Overview Assets Jobs Manage

Find assets Add asset New asset

6 assets All assets

All assets

Name	Last modified
SkyTalk churn prediction AutoAI experiment	2 weeks ago LAURENT TARIN (You)
SkyTalk churn prediction - P1 LGBM Classifier Model	2 weeks ago LAURENT TARIN (You)
SkyTalk customer loyalty data.csv	1 month ago LAURENT TARIN (You)
SkyTalk customer value data.csv	1 month ago LAURENT TARIN (You)

Asset types

- > Data 2
- > Experiments 2
- > Saved models 2

Action 3.1.3

- Open the **SkyTalk customer loyalty data.csv** file.

The screenshot shows the IBM Watson Studio interface. The top navigation bar includes 'IBM Watson Studio', 'All', a search bar ('Search in your workspaces'), 'Buy', a user icon ('Laurent Tarin's Account'), and 'Launch IDE'. Below the navigation is a toolbar with icons for upload, download, and other functions. The main area is titled 'Projects / SkyTalk customer retention'. Under 'Assets', there are tabs for 'Overview', 'Assets' (which is selected), 'Jobs', and 'Manage'. A search bar at the top of the assets section says 'Find assets'. Below it, a sidebar shows '6 assets' and 'Asset types': Data (2), Experiments (2), and Saved models (2). The main list is titled 'All assets' and shows the following files:

Name	Last modified
SkyTalk churn prediction AutoAI experiment	2 weeks ago LAURENT TARIN (You)
SkyTalk churn prediction - P1 LGBM Classifier Model	2 weeks ago LAURENT TARIN (You)
SkyTalk customer loyalty data.csv	1 month ago LAURENT TARIN (You)
SkyTalk customer value data.csv CSV	1 month ago LAURENT TARIN (You)
SkyTalk lifetime value prediction AutoAI experiment	2 weeks ago LAURENT TARIN (You)
SkyTalk lifetime value prediction - P4 XGB Regre Model	2 weeks ago LAURENT TARIN (You)

Narration

Watson Studio generates models that predict customer churn. Model generation is referred to as an ‘AutoAI experiment.’

The business analyst reviews the uploaded historical data file to make sure it contains the data required to predict customer churn.

T (true) in the Churn column indicates the customer closed their SkyTalk account. F (false) indicates the customer remained with SkyTalk.

Action 3.1.4

- Review the displayed **SkyTalk customer loyalty data.csv** file.

The screenshot shows the 'Preview' tab for the 'SkyTalk customer loyalty data.csv' file. The top navigation bar and sidebar are identical to the previous screenshot. The main area shows the schema and a preview of the data.

Schema: 10 Columns
Preview: First 1000 rows

CHURN String	Gender String	Status String	Household String	Est Income String	Car Owner String	Age String	Paymethod String	Usage String	Rate String
T	F	S	1	38000	N	24.393333	CC	229.64	3
F	M	M	2	29616	N	49.426667	CH	75.29	2
F	M	M	0	19732.8	N	50.673333	CC	47.25	3
F	M	S	2	96.33	N	56.473333	CC	59.01	1
F	F	M	2	52004.8	N	25.14	CH	28.14	1
F	M	M	2	53010.8	N	18.84	CC	58.87	1
F	M	M	1	75004.5	N	64.8	CC	58.72	1
F	M	M	0	19749.3	N	60.366667	CC	34.17	3
F	M	S	1	57626.9	Y	43.906667	CC	48.35	2
F	M	M	2	20078	N	32.846667	CC	15.98	4
F	F	M	2	47902	N	26.033333	Auto	72.31	2
T	M	M	1	7545.96	Y	16.753333	CC	200.75	3
T	F	S	0	78851.3	N	48.373333	CC	29.04	4

Information

Data Asset
SkyTalk customer loyalty data.csv
Description: No description is available for this asset.
Tags: No description is available for this asset.
Added: Oct 12, 2021, 02:02 PM
Size: 67.923 KB

Action 3.1.5

- Click **SkyTalk customer retention** in the breadcrumb navigation bar.

Schema: 10 Columns
Preview: First 1000 rows

Last refresh: 18 hours ago

Refine

Information

Data Asset

SkyTalk customer loyalty data.csv

Description

No description is available for this asset.

Tags

No description is available for this asset.
Added: Sep 21, 2021, 11:40 AM
Size: 67.923 KB

Narration

The business analyst starts an AutoAI experiment to create models that predict customer churn. Models are referred to as ‘pipelines.’

The AutoAI tool analyzes historical data to generate multiple pipelines.

Action 3.1.6

- Click **New asset**.

Find assets

Add asset

New asset

Action 3.1.7

- Click **AutoAI**.

Select the tool to create an operational or configuration asset.

Tool type

All types

Automatic builders

Graphical canvas

Code editors

Other

Find tools by name or purpose

AutoAI

Automatically analyze your tabular data and generate candidate model pipelines customized for your predictive modeling problem.

Federated Learning

Create a federated learning experiment to train a common model on a set of remote data sources. Share training results without sharing data.

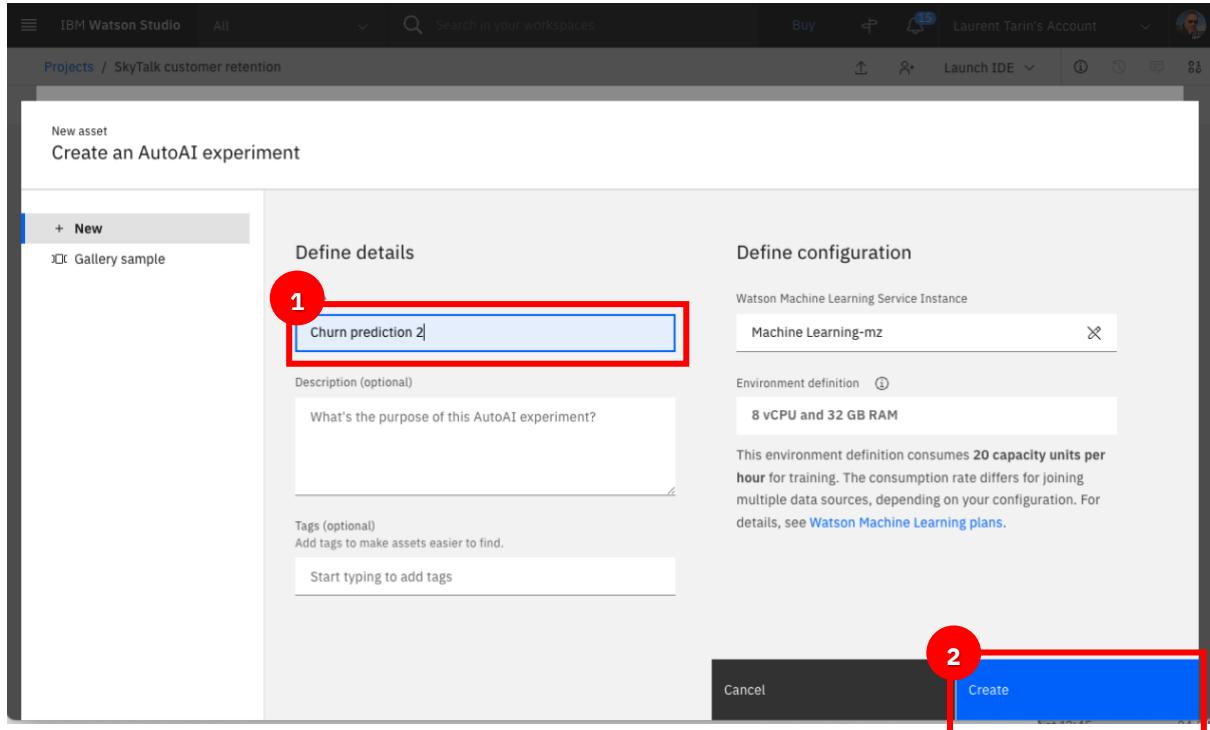
Metadata enrichment

Enrich imported asset metadata with business context, data profiling, and quality assessment.

New asset

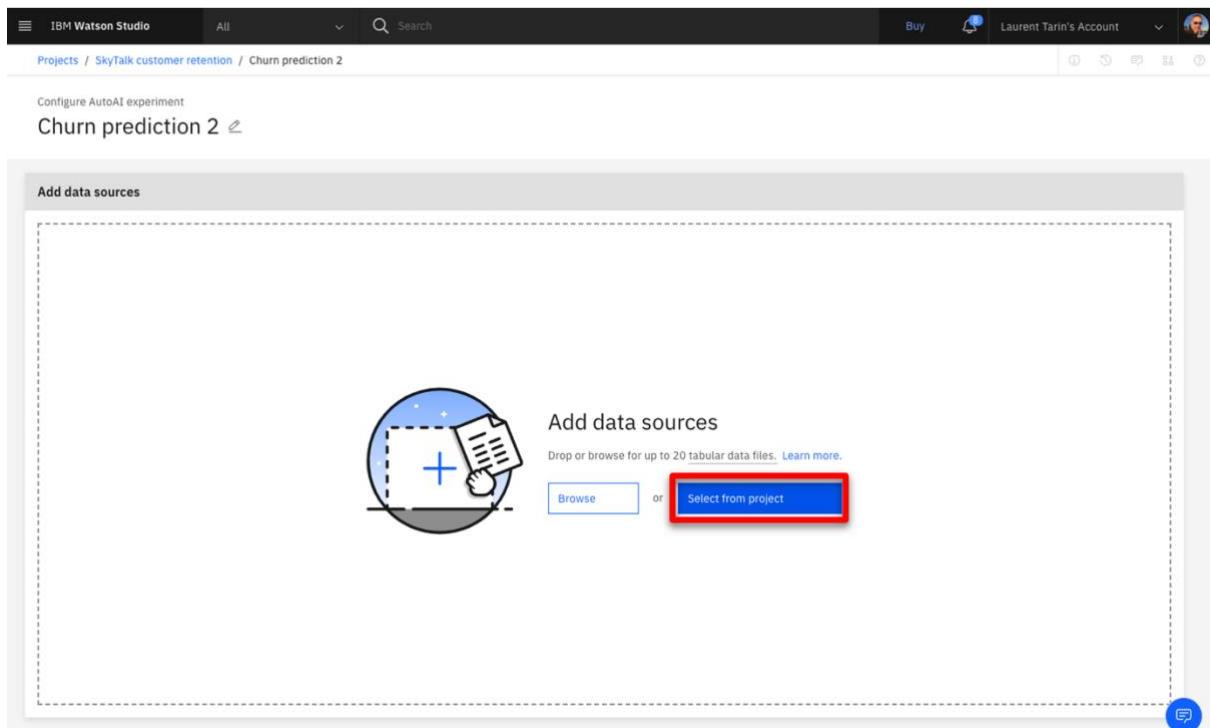
Action 3.1.8

- Name the experiment '**Churn prediction 2**' (1) and click **Create** (2).



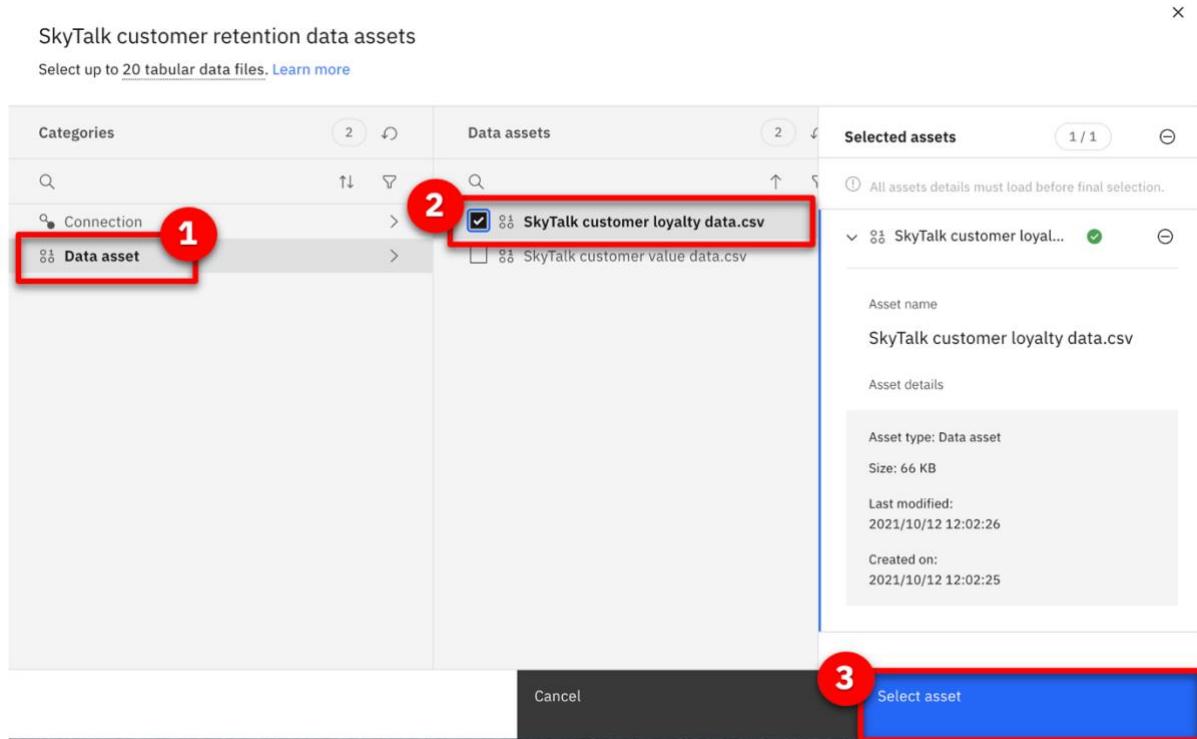
Action 3.1.9

- Click **Select from project**.



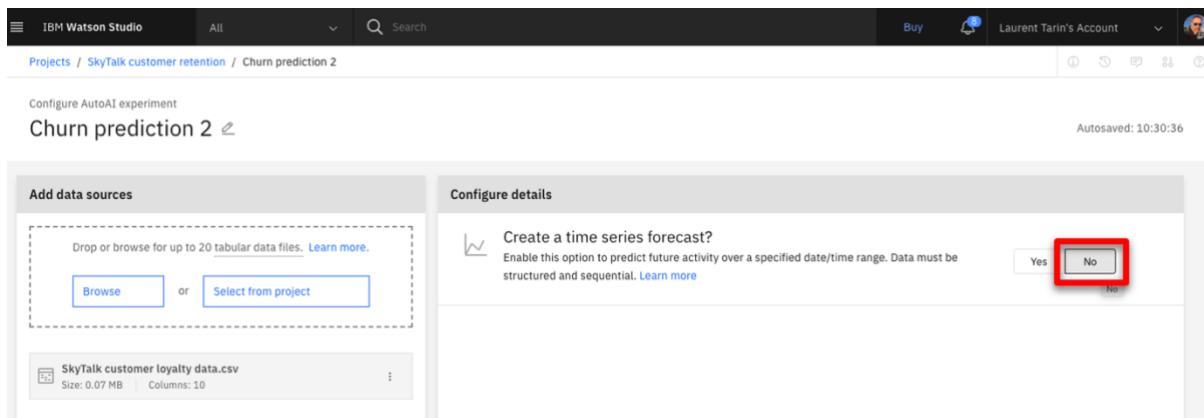
Action 3.1.10

- Click **Data asset** (1), and select the **SkyTalk customer loyalty data.csv** file (2).
- Click **Select asset** (3).



Action 3.1.11

- Select **No** for the **Create a time series forecast?** question.



Narration

The analyst chooses the customer loyalty data file and selects Churn in the 'What do you want to predict' dropdown menu.

The AutoAI tool analyzes historical data and automatically generates various pipeline choices. It also tests the pipelines' predictions so the business analyst can easily compare them across several accuracy measures.

Action 3.1.12

- Click **Select prediction columns** (1), and select **CHURN** (2) as the measure to predict.

The screenshot shows the 'Configure details' section of the AutoAI experiment configuration. On the left, there's an 'Add data sources' panel with a 'Browse' button and a 'Select from project' button. Below that is a list of files, with 'SkyTalk customer loyalty data.csv' selected. On the right, under 'Configure details', there's a 'Create a time series forecast?' section with 'Yes' and 'No' buttons. Below it is a 'What do you want to predict?' section with a 'Prediction columns' dropdown. The 'CHURN' option is highlighted with a red box and a red circle labeled '2'. Other options listed include 'Gender', 'Status', 'Household', 'Est Income', and 'Churn Churner'.

Action 3.1.13

- Click **Run experiment**.

The screenshot shows the 'Configure details' section of the AutoAI experiment configuration. The 'Prediction column' is set to 'CHURN'. In the 'Experiment settings' section at the bottom, the 'Run experiment' button is highlighted with a red box. Other settings shown include 'PREDICTION TYPE: Binary Classification', 'POSITIVE CLASS: T', and 'OPTIMIZED FOR: Accuracy & run time'. There is also a note about CUH remaining: 15.89 CUH.

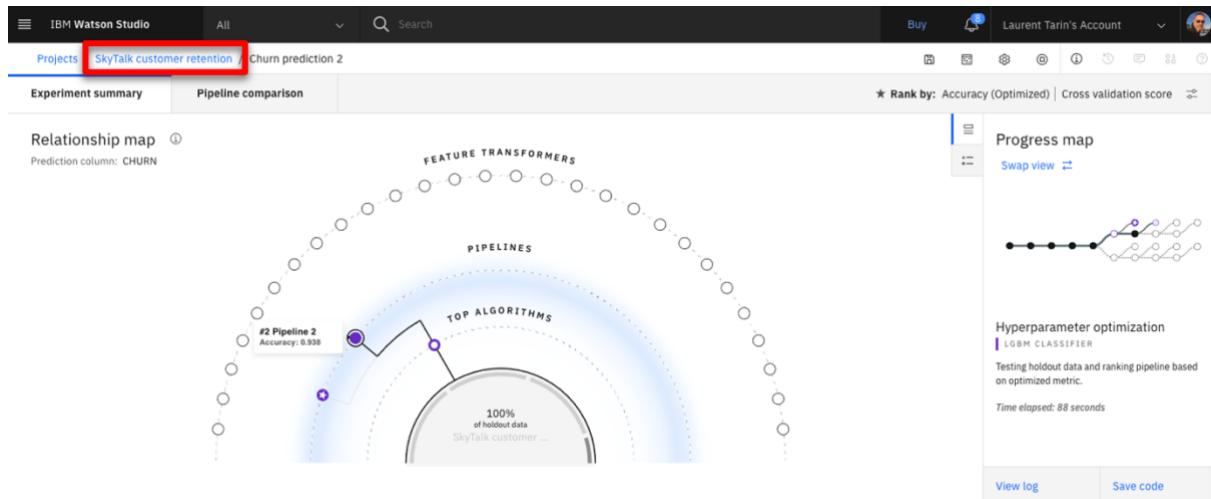
Narration

The results automatically suggest eight different pipelines. The pipelines use different ML optimization approaches to make predictions.

The business analyst evaluates the pipelines' various prediction accuracy measures.

Action 3.1.14

- Click **SkyTalk customer retention** in the breadcrumb menu.



Narration

Let's jump to a finalized experiment corresponding to the exact same data set.

Action 3.1.15

- Click the **SkyTalk churn prediction** AutoAI experiment.

The screenshot shows the 'Assets' tab in the IBM Watson Studio interface. The left sidebar lists 'Asset types': Data (2), Experiments (3), and Saved models (2). The main area shows a table of 'All assets' with columns for 'Name' and 'Last modified'. An asset named 'SkyTalk churn prediction' is highlighted with a red box. Other assets listed include 'Churn prediction 2', 'SkyTalk churn prediction - P1 LGBM Classifier Model', 'SkyTalk customer loyalty data.csv', 'SkyTalk customer value data.csv', 'SkyTalk lifetime value prediction', and 'SkyTalk lifetime value prediction - P4 XGB Regre Model'. The 'SkyTalk churn prediction' asset was last modified 2 weeks ago by LAURENT TARIN (You).

Name	Last modified
Churn prediction 2 AutoAI experiment	NOW LAURENT TARIN (You)
SkyTalk churn prediction AutoAI experiment	2 weeks ago LAURENT TARIN (You)
SkyTalk churn prediction - P1 LGBM Classifier Model	2 weeks ago LAURENT TARIN (You)
SkyTalk customer loyalty data.csv CSV	1 month ago LAURENT TARIN (You)
SkyTalk customer value data.csv CSV	1 month ago LAURENT TARIN (You)
SkyTalk lifetime value prediction AutoAI experiment	2 weeks ago LAURENT TARIN (You)
SkyTalk lifetime value prediction - P4 XGB Regre Model	2 weeks ago LAURENT TARIN (You)

3.2 - Choose the best predictive model

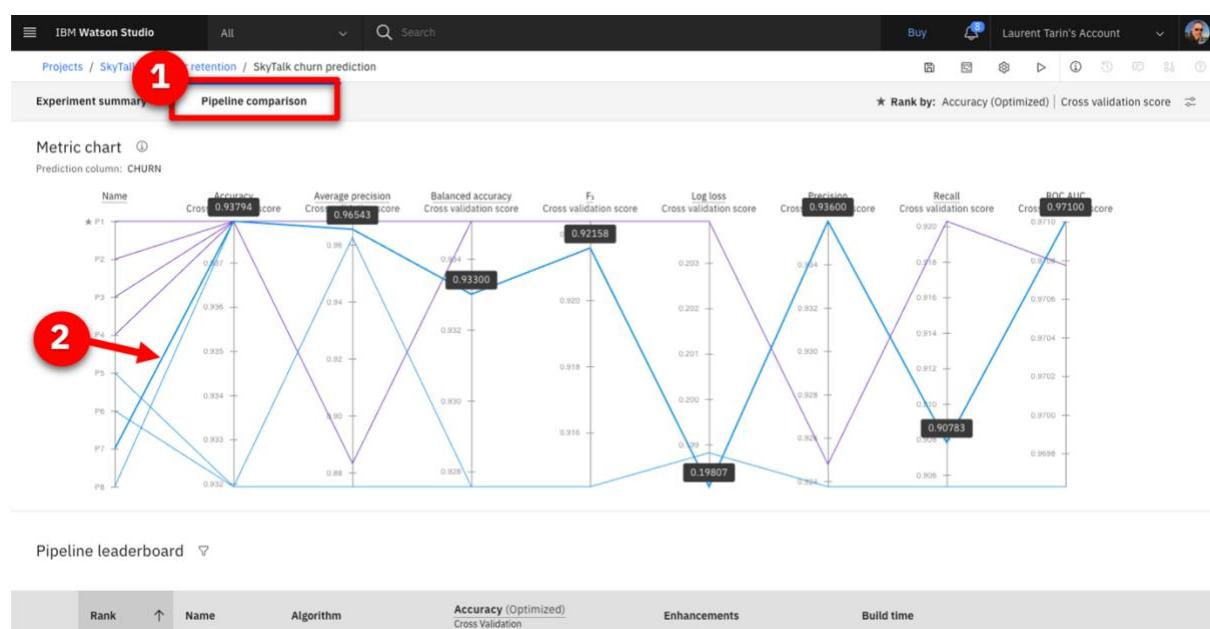
Narration

On the ‘Pipeline Comparison’ chart, the business analyst examines how each pipeline ranks by various measures of accuracy.

For example, Pipeline 7 has the highest accuracy in differentiating useful data from noise. This is determined by the area under the ROC (receiver operating characteristic) curve and displayed on this chart in the ROC AUC column.

Action 3.2.1

- Click **Pipeline comparison** (1) and move the cursor over the **P7** (pipeline 7) line (2) on the graph to highlight the different values for this pipeline.



Narration

Scrolling down and clicking on a Pipeline provides additional details.

Action 3.2.2

- Scroll down and click **Pipeline 7** in the **Pipeline leaderboard**.

The Pipeline leaderboard shows the following details for Pipeline 7:

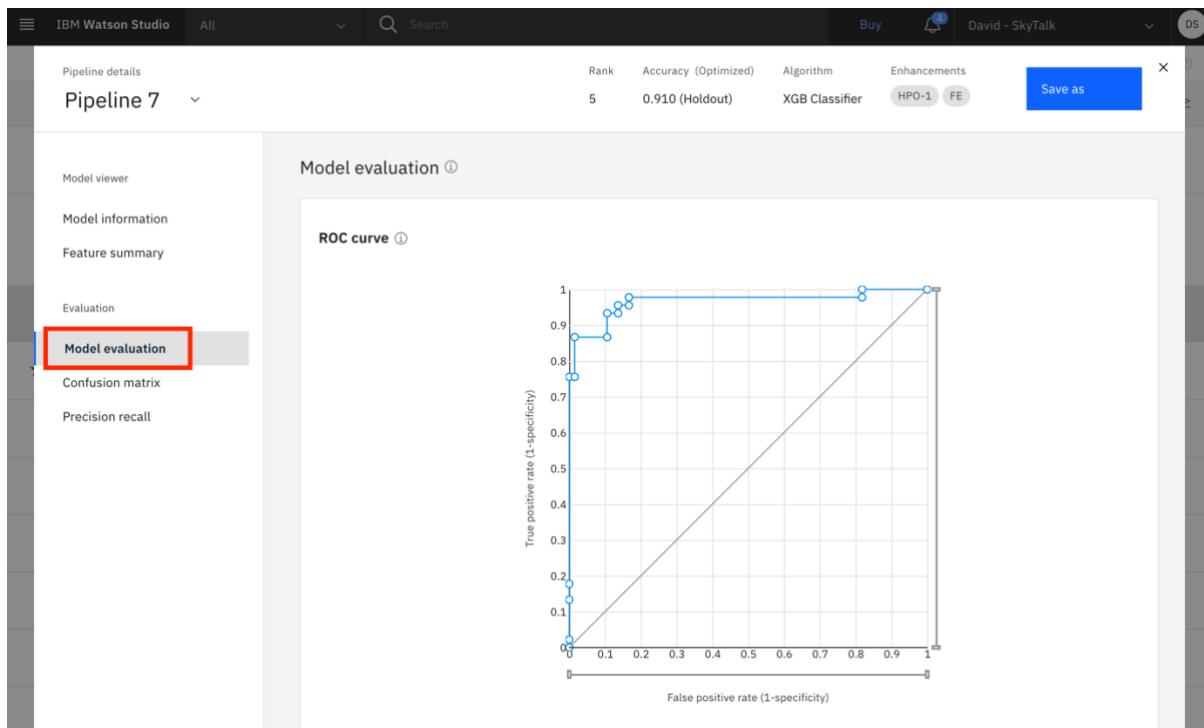
Rank	Name	Algorithm	Accuracy (Optimized)	Enhancements	Build time
1	Pipeline 1	LGBM Classifier	0.938	None	00:00:01
2	Pipeline 2	LGBM Classifier	0.938	HPO-1	00:00:16
3	Pipeline 3	LGBM Classifier	0.938	HPO-1 FE	00:00:27
4	Pipeline 4	LGBM Classifier	0.938	HPO-1 FE HPO-2	00:00:23
5	Pipeline 7	XGB Classifier	0.938	HPO-1 FE	00:00:24

Narration

The ‘Model evaluation’ view shows Pipeline 7’s actual ROC curve. Pipeline 7’s ROC curve arcs upward, indicating that as more predictions are made during the test, the model becomes increasingly accurate.

Action 3.2.3

- Click the **Model evaluation** tab.



Narration

The confusion matrix shows a different accuracy measure. It compares the actual attrition data with the pipelines’ predictions.

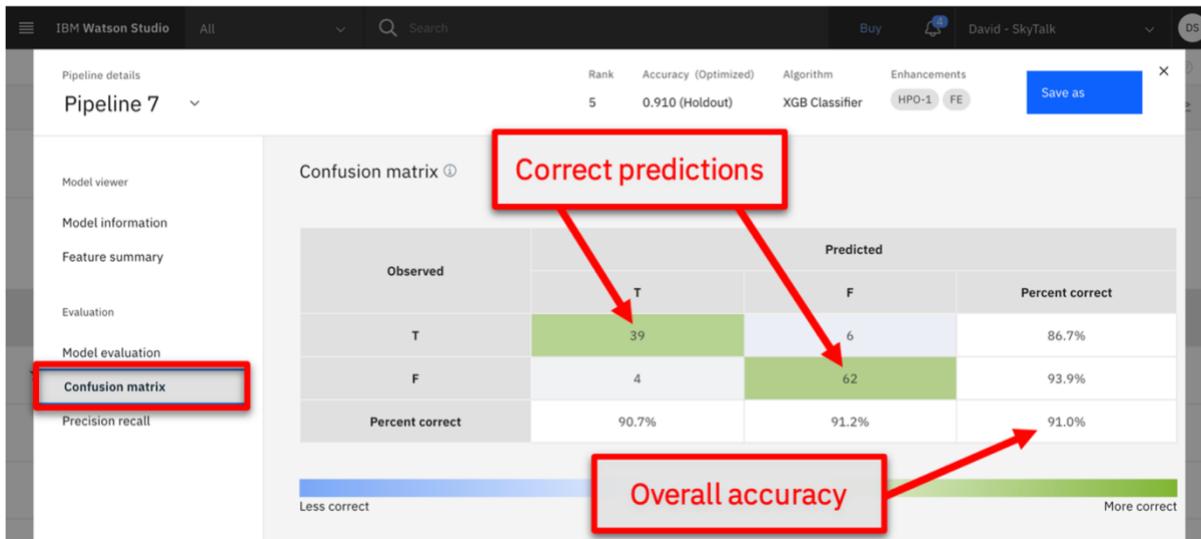
Earlier in the demo, we looked at how customer churn is indicated in SkyTalk’s data as T (true) for customers that closed their account and F (false) for customers that remained with SkyTalk.

Correct predictions in the ‘Confusion matrix’ below are indicated in the green T/T and F/F boxes. There were 39 T/T results and 62 F/F results. Summarizing those results shows us that Pipeline 7 made 101 correct predictions. The six T/F and four F/T represent ten incorrect predictions.

Therefore, Pipeline 7 made 101 correct predictions out of 111 chances. This translates to 91% accuracy, which is displayed in the bottom right box of the matrix.

Action 3.2.4

- Click the **Confusion matrix** tab.

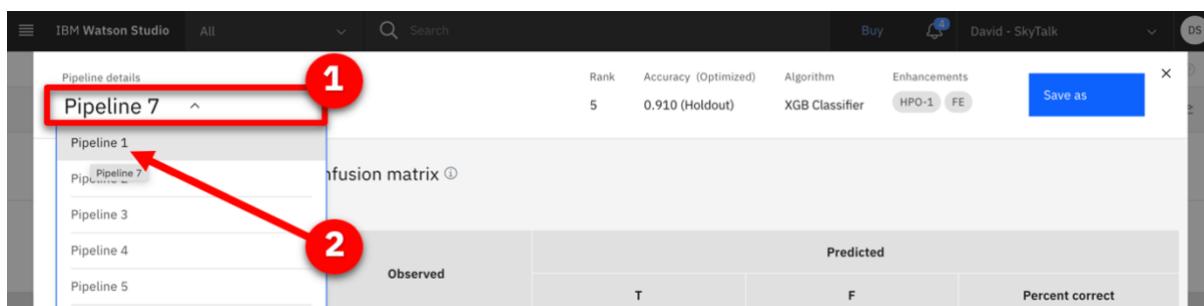


Narration

The analyst compares Pipelines 1 and 7 to understand why Pipeline 1 is rated the best overall.

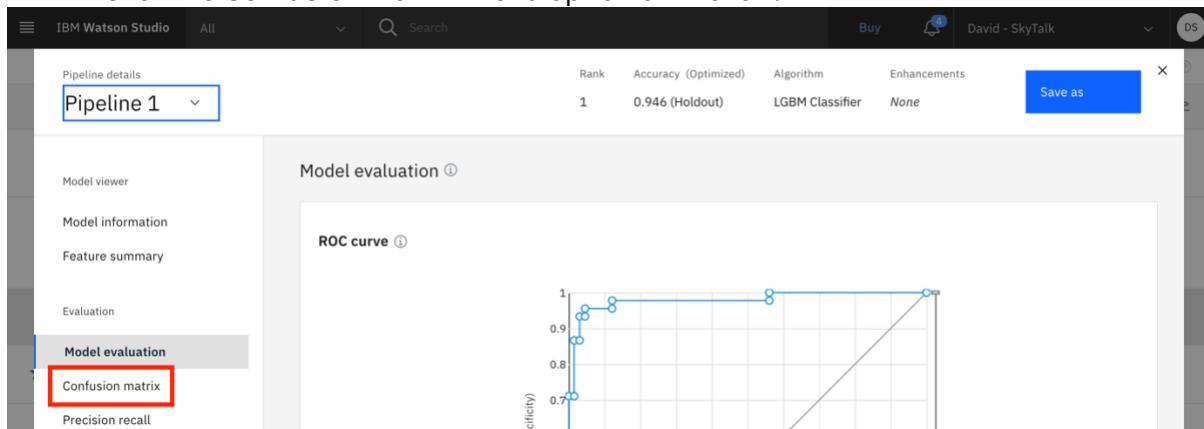
Action 3.2.5

- Click the **Pipeline details** drop-down list (1) and select **Pipeline 1** (2).



Action 3.2.6

- Click the **Confusion matrix** menu option on the left.



Action 3.2.7

- Review the **Confusion matrix**.
- Highlight the fact that the overall correct percentage is higher using Pipeline 1.

The screenshot shows the IBM Watson Studio interface with the Pipeline details view for Pipeline 1. The navigation bar at the top includes 'IBM Watson Studio', 'All', 'Search', 'Buy', 'David - SkyTalk', and a 'DS' icon. Below the navigation is a summary row for Pipeline 1: Rank 1, Accuracy (Optimized) 0.946 (Holdout), Algorithm LGBM Classifier, Enhancements None, and a 'Save as' button. On the left, a sidebar lists 'Model viewer', 'Model information', 'Feature summary', 'Evaluation', 'Model evaluation', 'Confusion matrix' (which is selected and highlighted with a blue border), and 'Precision recall'. The main content area displays a 'Confusion matrix' table:

Observed	Predicted		
	T	F	Percent correct
T	41	4	91.1%
F	2	64	97.0%
Percent correct	95.3%	94.1%	94.6%

A horizontal bar at the bottom indicates the range from 'Less correct' to 'More correct', with the 94.6% value positioned near the 'More correct' end. A red box highlights the '94.6%' value in the bottom right corner of the confusion matrix table.

Narration

Pipeline 1 has a 94.6% accuracy, which is higher than Pipeline 7's 91.0%. The analyst chooses Pipeline 1 as the model to deploy in production.

Action 3.2.8

- Click the **x** on the upper right corner to close the **Pipeline details** view.

The screenshot shows the Pipeline details view for Pipeline 1. The top navigation bar and summary row are identical to the previous screenshot. A red box highlights the close 'x' button located in the top right corner of the Pipeline details view window.

Action 3.2.9

- Click **Save as** on the right side of the **Pipeline 1** row.

The screenshot shows the Pipeline comparison view. The top navigation bar includes 'IBM Watson Studio', 'All', 'Search', 'Buy', 'David - SkyTalk', and a 'DS' icon. The main content area displays a 'Pipeline leaderboard' table:

Rank	Name	Algorithm	Accuracy (Optimized) Cross Validation	Enhancements	Build time	Actions
★ 1	Pipeline 1	LGBM Classifier	0.938	None	00:00:01	Save as

A red box highlights the 'Save as' button in the bottom right corner of the Pipeline 1 row.

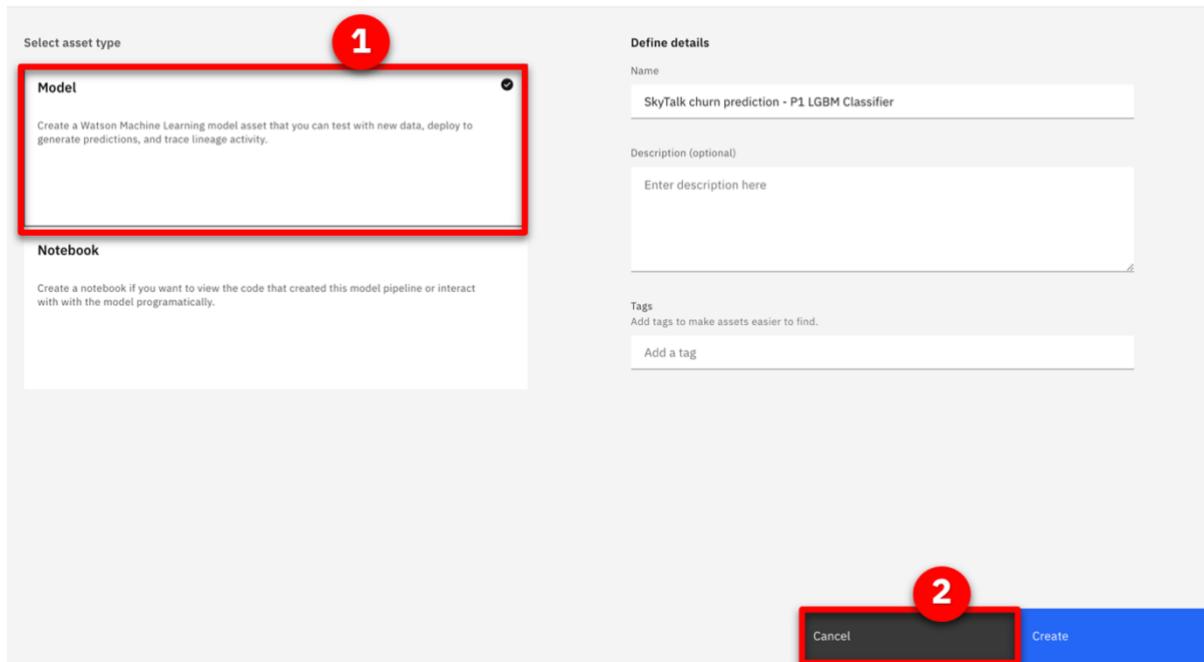
Narration

The analyst can now generate a machine learning model using the pipeline from the AutoAI experiment. We will click cancel and review the model that was previously created.

Action 3.2.10

- Select **Model** (1) and click **Cancel** (2).

Save as



Action 3.2.11

- Click **SkyTalk customer retention** project in the breadcrumb navigation bar.

The screenshot shows the IBM Watson Studio interface. The top navigation bar includes the 'IBM Watson Studio' logo, a search bar, and user information ('Buy', 'David - SkyTalk'). Below the navigation bar is a breadcrumb navigation bar with three items: 'Projects', 'SkyTalk customer retention' (which is highlighted with a red box), and 'SkyTalk churn prediction'. Underneath the breadcrumb bar is a 'Pipeline comparison' card showing four pipelines with their respective accuracy scores: P1 (0.9315), P2 (0.927), P3 (0.914), and P4 (0.914). Below this is a 'Pipeline leaderboard' table. A green toast notification is visible on the right side of the screen, stating 'Saved model successfully. SkyTalk churn prediction - P1 LGBM Classifier was successfully saved to SkyTalk customer retention.' with a 'View in project' link. The table has columns for Rank, Name, Algorithm, Accuracy (Optimized), Enhancements, and Build time. Pipeline 1 is ranked 1st with an accuracy of 0.938 and no enhancements. Pipeline 2 is ranked 2nd with an accuracy of 0.938 and one enhancement (HPO-1).

Rank	Name	Algorithm	Accuracy (Optimized)	Enhancements	Build time
1	Pipeline 1	LGBM Classifier	0.938	None	00:00:01
2	Pipeline 2	LGBM Classifier	0.938	HPO-1	00:00:16

3.3 - Prepare the churn prediction model for production use

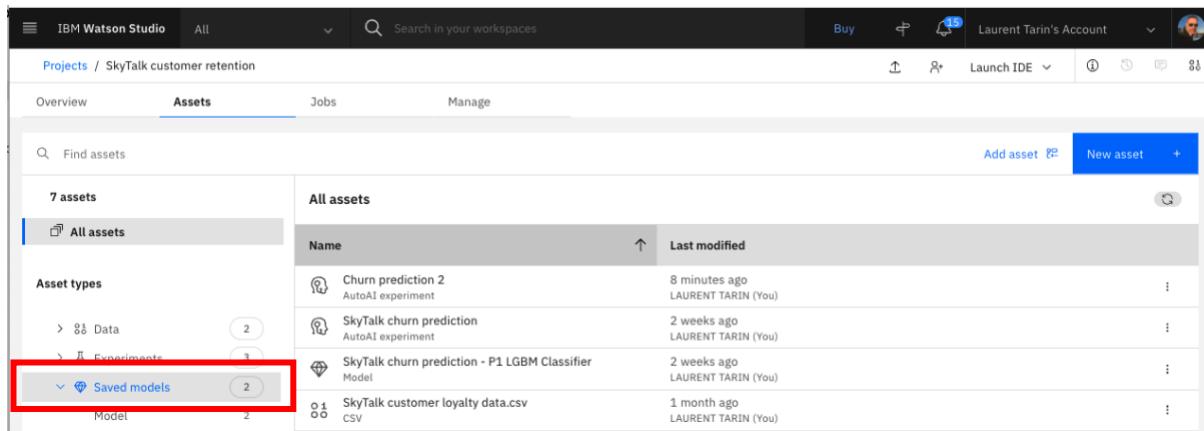
Narration

The analyst has created a churn prediction service for the model. Then, an AutoAI experiment was invoked to automatically generate pipeline options for the churn prediction service. The analyst chose a pipeline for production use and saved it as a churn prediction model in the SkyTalk's customer retention project.

In Watson AI, promoting a prediction model to a production space makes it available for use in production. Let's complete this final step to make SkyTalk's new churn prediction model available in the SkyTalk production space.

Action 3.3.1

- Click **Saved Models**.



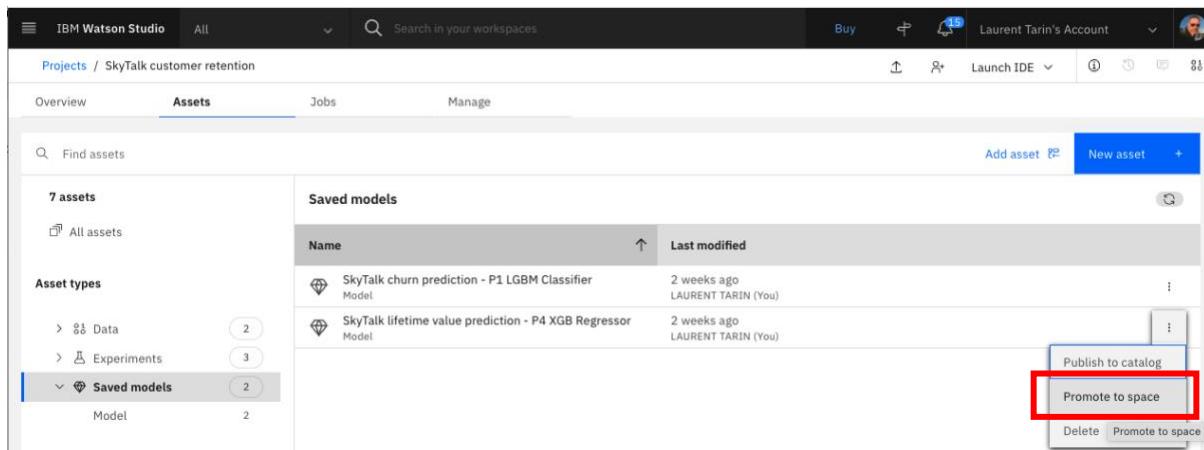
This screenshot shows the IBM Watson Studio interface with the 'Assets' tab selected. On the left, there is a sidebar with sections for Overview, Assets (which is currently selected), Jobs, and Manage. Below the sidebar, there is a search bar labeled 'Find assets'. The main area displays a table titled 'All assets' with columns for 'Name' and 'Last modified'. There are five items listed:

Name	Last modified
Churn prediction 2 AutoAI experiment	8 minutes ago LAURENT TARIN (You)
SkyTalk churn prediction AutoAI experiment	2 weeks ago LAURENT TARIN (You)
SkyTalk churn prediction - P1 LGBM Classifier Model	2 weeks ago LAURENT TARIN (You)
SkyTalk customer loyalty data.csv CSV	1 month ago LAURENT TARIN (You)

The 'Saved models' section in the sidebar is highlighted with a red box. The table also has a red box around its first column header 'Name'.

Action 3.3.2

- Display the menu on the right side of one of the models and click **Promote to space**.



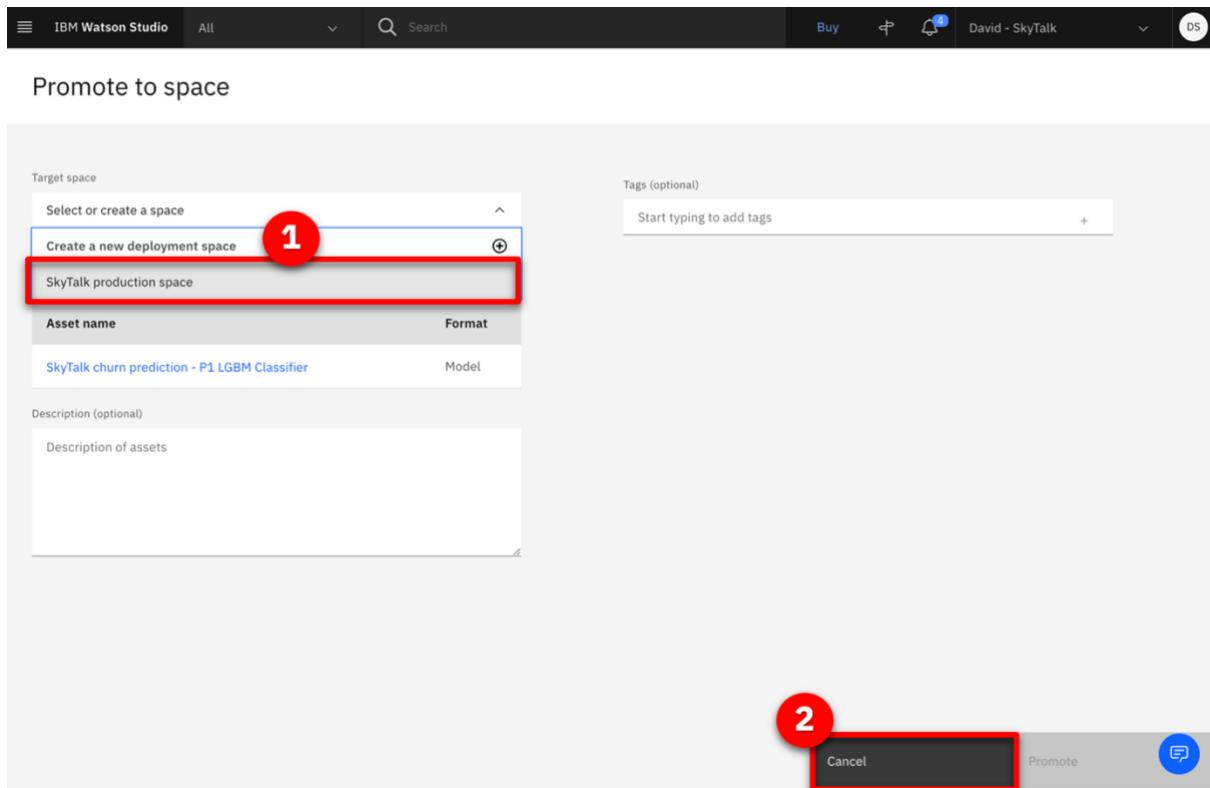
This screenshot shows the same IBM Watson Studio interface as the previous one, but with a context menu open over the 'SkyTalk churn prediction - P1 LGBM Classifier Model' row in the 'Saved models' table. The context menu has several options: 'Publish to catalog', 'Promote to space' (which is highlighted with a red box), and 'Delete'.

Narration

In practice, the analyst would promote the churn model to the deployment environment here. For our demo, it has already been promoted.

Action 3.3.3

- Show the **Skytalk production space** (1) option.
- Click **Cancel** (2) to avoid promoting the model.
- **NOTE:** Do NOT click **Promote**.

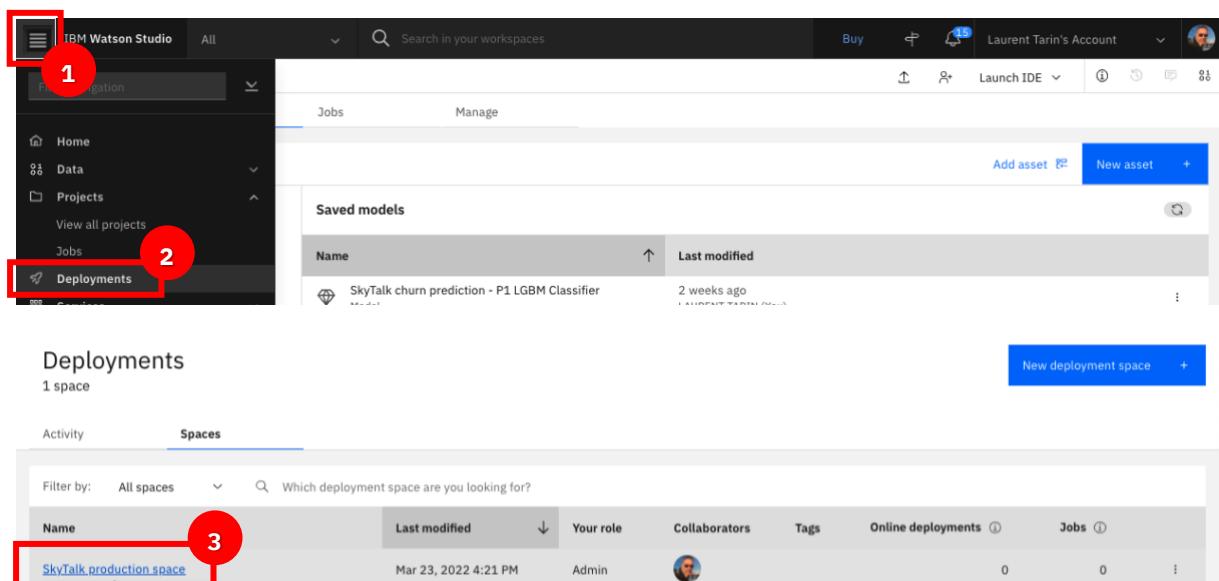


Narration

The two prediction services are now ready for deployment.

Action 3.3.4

- Click the **IBM Watson Studio** menu (1), click **Deployments** (2), and then click the **SkyTalk production space** (3).



Action 3.3.5

- Click the **Deployments** tab.

The screenshot shows the IBM Watson Studio interface with the title bar "IBM Watson Studio" and "Upgrade". Below the title bar, there is a search bar and a "Deployments /" breadcrumb. On the right side, there are "Add to space" and "+" buttons. The main content area is titled "SkyTalk production space". Below the title, there is a navigation bar with tabs: "Overview", "Assets", "Deployments" (which is highlighted with a red box), "Jobs", and "Manage".

Narration

The two services have been deployed.

Copy and save the service endpoint URL. It will be required to configure a machine learning provider that will establish the link between Watson Studio and Cloud Pak later in the demo.

Action 3.3.6

- Click the **churn** service.

The screenshot shows the IBM Watson Studio interface with the title bar "IBM Watson Studio" and "Upgrade". Below the title bar, there is a search bar and a "Deployments /" breadcrumb. On the right side, there are "Add to space" and "+" buttons. The main content area is titled "SkyTalk production space". Below the title, there is a navigation bar with tabs: "Overview", "Assets", "Deployments" (which is highlighted with a blue underline), "Jobs", and "Manage". A search bar below the navigation bar contains the placeholder "What deployments are you looking for?". The main content area is titled "Deployments (2)". A table lists two deployments:

Name	Type	Status	Asset	Tags	Last modified
Lifetime value	Online	Deployed	SkyTalk lifetime value prediction - P1 XGB Regressor		Oct 19, 2021 5:26 PM
churn	Online	Deployed	SkyTalk churn prediction - P1 LGBM Classifier		Oct 19, 2021 5:25 PM

Action 3.3.7

- Keep the first portion of the **endpoint URL** to use later in the demo. Only highlight from the beginning to 'v4,' as shown in the image.

The screenshot shows the "churn" service details page. At the top, it says "churn" with status "Deployed" and "Online". Below that, there are tabs for "API reference" (which is selected) and "Test". Under "API reference", there is a "Direct link" section. In the "Endpoint" field, the URL is partially highlighted with a red box, showing "https://eu-de.ml.cloud.ibm.com/ml/v4/deployments/caede6e5-86a8-4443-897a-edb3ee834dff/predictions?version=1". To the right of the URL, there is a "Bearer <token>" button and an "IAM" button.

Narration

The deployment space identifier will also be required to configure the machine learning provider.

Action 3.3.8

- Click the **SkyTalk production space** in the breadcrumb navigation bar.

The screenshot shows the IBM Watson Studio interface. The top navigation bar includes 'IBM Watson Studio', 'All', a search bar, and user information 'David - SkyTalk'. Below the navigation bar, the breadcrumb path 'Deployments / SkyTalk production space / SkyTalk churn prediction - P1 LG...' is visible. A red box highlights the 'SkyTalk production space' link. On the right side of the screen, there is a deployment card for 'churn' with status 'Deployed Online', an API reference section, and a note indicating it was created on Nov 15, 2021, at 2:52 PM.

Action 3.3.9

- Click the **Manage** tab (1) and keep the **Space GUID** (2) to use later in the demo.

The screenshot shows the 'SkyTalk production space' management page. At the top, there is a header with tabs for 'Overview', 'Assets', 'Deployments', and 'Jobs'. A red box highlights the 'Manage' tab. To the right of the tabs, there is a file upload area with a dashed box and the instruction 'Drop files here or browse for files to upload.' Below the tabs, there are sections for 'Space Details' and 'Cloud Object Storage'. The 'Space Details' section shows the name 'SkyTalk production space', a description 'No description provided.', and a 'Space GUID' field containing 'ee74f617-8907-4e2e-b006-97822d727...'. The 'Cloud Object Storage' section shows storage usage of '177.13 KB used' and details for a bucket named 'Cloud Object Storage-io'. A red box highlights the 'Space GUID' field. A note on the right says 'Stay on the page until upload completes. Incomplete uploads are cancelled.'

4 - Calling the prediction services from the business rules

4.1 - Configure the customer retention decision service to use the new predictive services

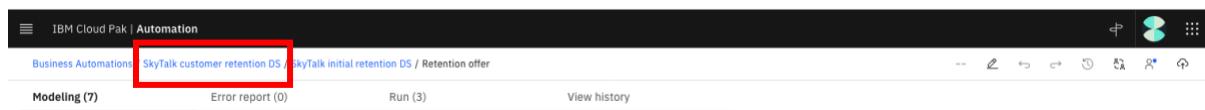
Narration

The ‘Retention budget’ sub-decision uses the ‘churn’ and ‘lifetime value’ predictive services. A machine learning provider establishes the link between the sub-decision and the predictive services.

The business analyst has set up a machine learning provider for the SkyTalk ‘customer retention decision service.’

Action 4.1.1

- Return to the **SkyTalk customer retention DS** using the breadcrumb navigation menu.



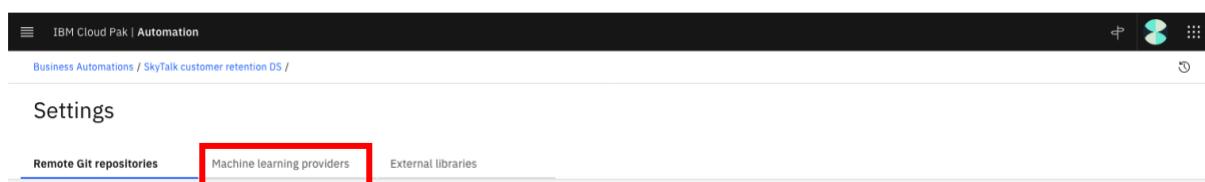
Action 4.1.2

- Open the **Settings** menu.



Action 4.1.3

- Click the **Machine learning providers** tab.



Action 4.1.4

- Click **Edit** on the right side of the **SkyTalk ML Provider** box.

The screenshot shows the 'Machine learning providers' tab selected in the navigation bar. A list of providers is displayed, with 'SkyTalk ML Provider' selected. A context menu is open next to the provider's entry, containing options: 'Edit' (highlighted with a red box), 'Copy', and 'Delete'. The provider details shown are: Type: Watson ML, Status: running.

Action 4.1.5

- Show the **API key** (1), the **Space ID** (2), and the endpoint **URL** (3) obtained during the demo preparation instruction (step 5.8).
- NOTE:** The Space GUID saved earlier in the demo is called the **Space ID** on this interface.

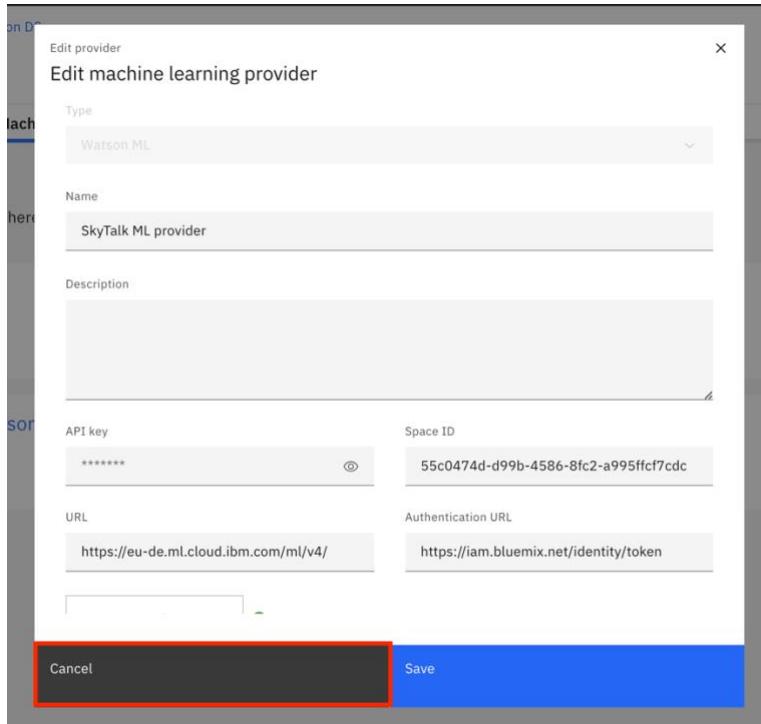
The dialog box is titled 'Edit provider' and 'Edit machine learning provider'. It contains fields for Type (Watson ML), Name (SkyTalk ML provider), and Description. At the bottom, three fields are highlighted with red boxes and circled numbers: 1. API key (containing '*****'), 2. Space ID ('55c0474d-d99b-4586-8fc2-a995ffcf7cdc'), and 3. URL ('https://eu-de.ml.cloud.ibm.com/ml/v4/').

Narration

Now that the interface between the Cloud Pak and Watson Studio is set up, the analyst can create two predictive models and make the predictions available for use within business rules.

Action 4.1.6

- Click **Cancel** and explain that the provider has been pre-configured during the demo preparation.



Action 4.1.7

- Return to the **SkyTalk customer retention DS** using the breadcrumb navigation.

Action 4.1.8

- Click the **SkyTalk initial retention DS** tile.

Action 4.1.9

- Click **Create**.

The screenshot shows the IBM Cloud Pak | Automation interface. At the top, there's a navigation bar with the title 'IBM Cloud Pak | Automation'. Below it, a breadcrumb trail reads 'Business Automations / SkyTalk customer retention DS / SkyTalk initial retention DS'. The main area is titled 'Models' and contains tabs for 'Data and libraries' and 'Decision operations'. There's a search bar and filters for 'All models' and 'Sort by name'. In the bottom right corner of the main area, there's a blue 'Create' button with a '+' icon, which is highlighted with a red box.

Narration

The business analyst creates a predictive model to map the customer churn prediction parameters.

Action 4.1.10

- Select **Predictive model** (1) and name it '**Customer Churn**' (2).
- Click **Create** (3).

The screenshot shows a 'Create model' dialog box. At the top, it says 'Decision service 'SkyTalk initial retention DS'' and 'Create model'. Below that, it says 'Select model type'. There are three options: 'Decision model', 'Task model', and 'Predictive model'. The 'Predictive model' option is selected and highlighted with a red box and a red circle labeled '1'. In the 'Name' field, the text 'Customer Churn' is entered, and this field is also highlighted with a red box and a red circle labeled '2'. At the bottom, there's a 'Description (optional)' text area with placeholder text 'What is specific to this model?' and a 'Create' button. The 'Create' button is highlighted with a red box and a red circle labeled '3'.

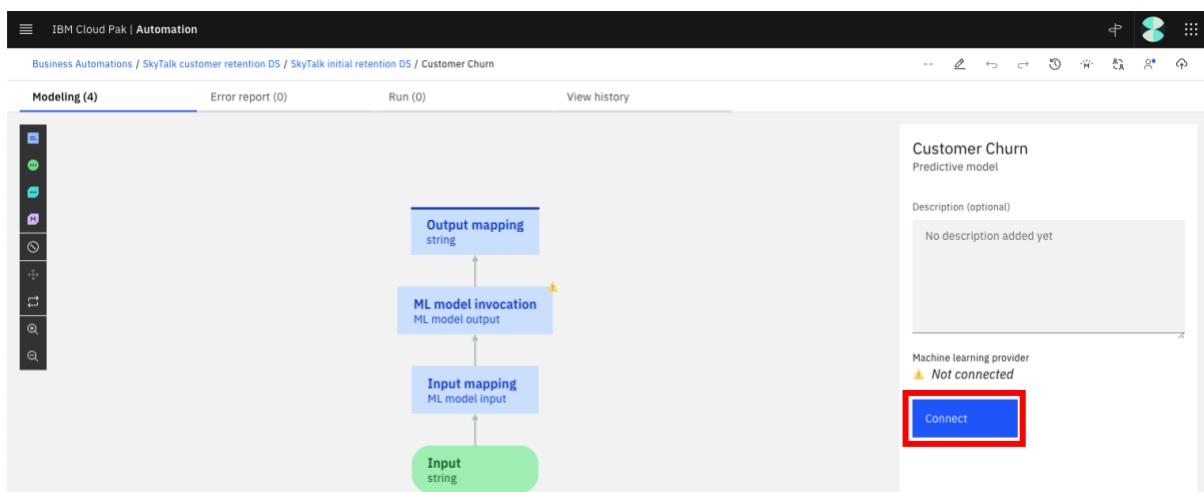
4.2 - Map the predictive service to the predictive model

Narration

A new predictive model is automatically created. This model needs to be configured to map the churn prediction parameters.

Action 4.2.1

- Click **Connect**.

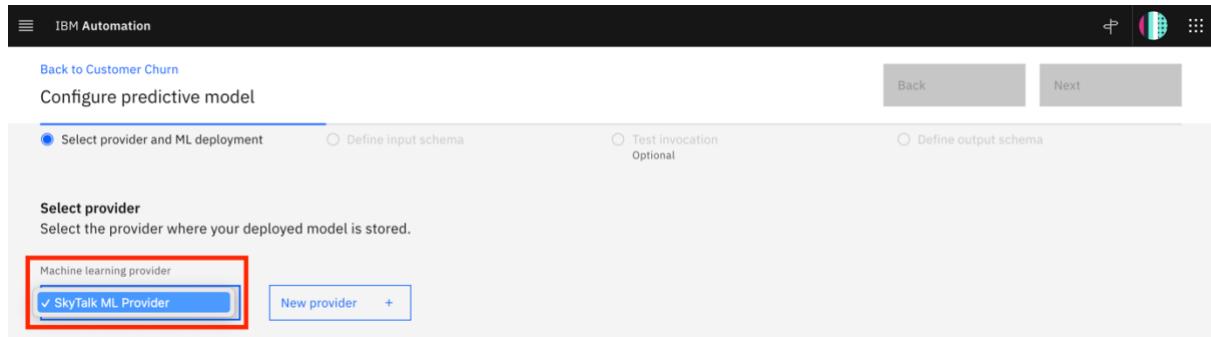


Narration

The analyst selects the SkyTalk machine learning provider to establish the link to the deployed prediction service.

Action 4.2.2

- Select the **SkyTalk ML Provider**.



IBM Automation

Back to Customer Churn

Configure predictive model

Select provider and ML deployment

Define input schema

Test invocation
Optional

Define output schema

Select provider

Select the provider where your deployed model is stored.

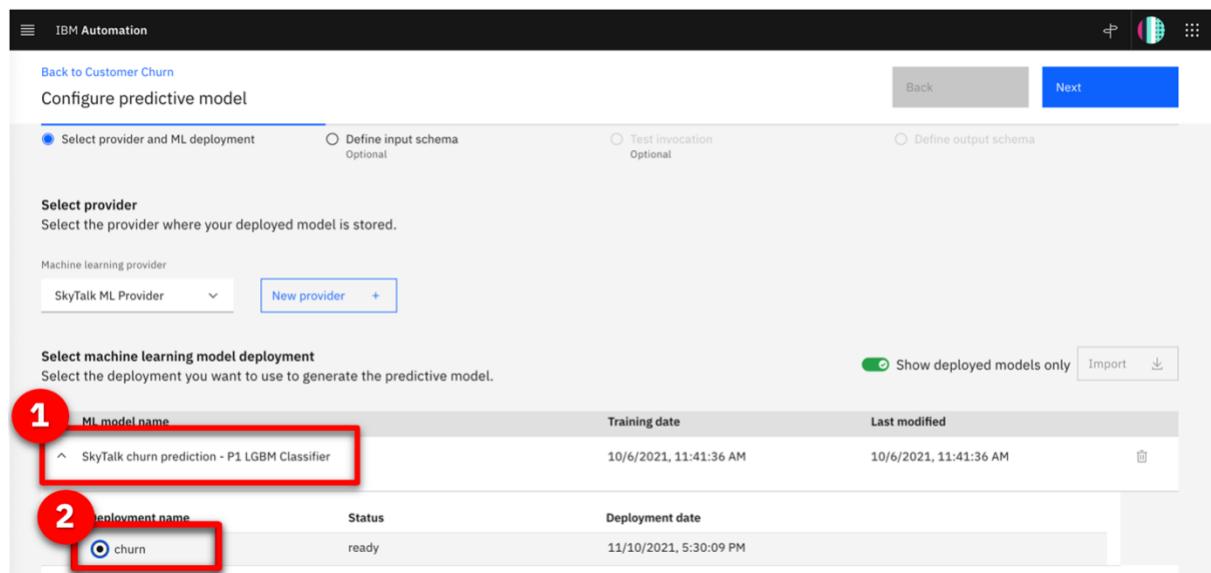
Machine learning provider

SkyTalk ML Provider

New provider +

Action 4.2.3

- Expand the **SkyTalk churn prediction – P1 LGBM Classifier** machine learning model (1). Select the **churn** deployment name (2).
- The prediction is now connected to the customer lifetime value.



IBM Automation

Back to Customer Churn

Configure predictive model

Select provider and ML deployment

Define input schema

Test invocation
Optional

Define output schema

Select provider

Select the provider where your deployed model is stored.

Machine learning provider

SkyTalk ML Provider

New provider +

Select machine learning model deployment

Select the deployment you want to use to generate the predictive model.

Show deployed models only Import

ML model name	Training date	Last modified
SkyTalk churn prediction - P1 LGBM Classifier	10/6/2021, 11:41:36 AM	10/6/2021, 11:41:36 AM
Deployment name	Status	Deployment date
churn	ready	11/10/2021, 5:30:09 PM

Narration

Now we will complete the predictive model. A wizard is used to complete the mapping.

Action 4.2.4

- Click **Next**.

The screenshot shows the 'IBM Automation' interface with the title 'Back to Customer Churn' and 'Configure predictive model'. There are four tabs at the top: 'Select provider and ML deployment' (selected), 'Define input schema' (Optional), 'Test invocation' (Optional), and 'Define output schema'. Below the tabs, there is a section for 'Test invocation' with the note 'Use test data to make sure the model works as expected.' A 'Run' button is located on the right side of this section, with a red box highlighting it.

Action 4.2.5

- Click **Next** again.

The screenshot shows the 'IBM Automation' interface with the title 'Back to Customer Churn 2' and 'Configure predictive model'. The 'Test invocation' tab is selected. The 'Run' button is highlighted with a red box.

Narration

The input data structure is automatically created.

Action 4.2.6

- Click **Run**.

The screenshot shows the 'IBM Automation' interface with the title 'Back to Customer Churn 2' and 'Configure predictive model'. The 'Test invocation' tab is selected. The 'Run' button is highlighted with a red box.

Narration

The connection is tested to ensure the predictive service is working.

Action 4.2.7

- Click **Next**.

The screenshot shows the 'IBM Automation' interface with the title 'Back to Customer Churn 2' and 'Configure predictive model'. The 'Test invocation' tab is selected. The 'Next' button is highlighted with a red box.

Action 4.2.8

- Click **Generate from test output**.

The screenshot shows the 'IBM Automation' interface with the title 'Back to Customer Churn 2' and 'Configure predictive model'. The 'Test invocation' tab is selected. The 'Generate from test output' button is highlighted with a red box.

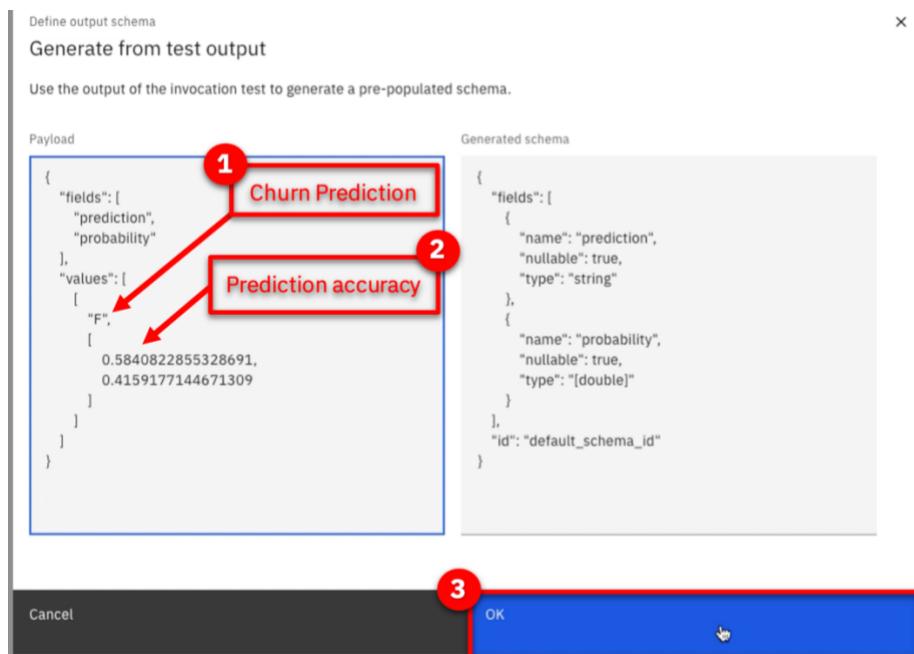
Narration

The churn predictive service returns true or false and the prediction accuracy. In this example, the prediction result is F (false), meaning the customer will not leave SkyTalk. The prediction accuracy results a probability out of 1. It is shown below the prediction. In this case the accuracy is 58.4% for this model.

This is working as expected. The predictive model is now mapping the input and output parameters of the 'Retention budget' sub-decision.

Action 4.2.9

- Show the **F** (false) prediction (1) and the **probability that the prediction is correct** (2) in the prediction output. Click **OK** (3).



Action 4.2.10

- Click **Apply**.



Narration

Now let's return to the **SkyTalk initial retention DS** using the breadcrumb navigation.

Action 4.2.11

- Click **SkyTalk initial retention DS** using the breadcrumb navigation menu.



4.3 - Assign the predictive model to the ‘Retention budget’ sub-decision

Narration

Let’s improve the ‘Retention budget’ sub-decision by using the churn predictive model.

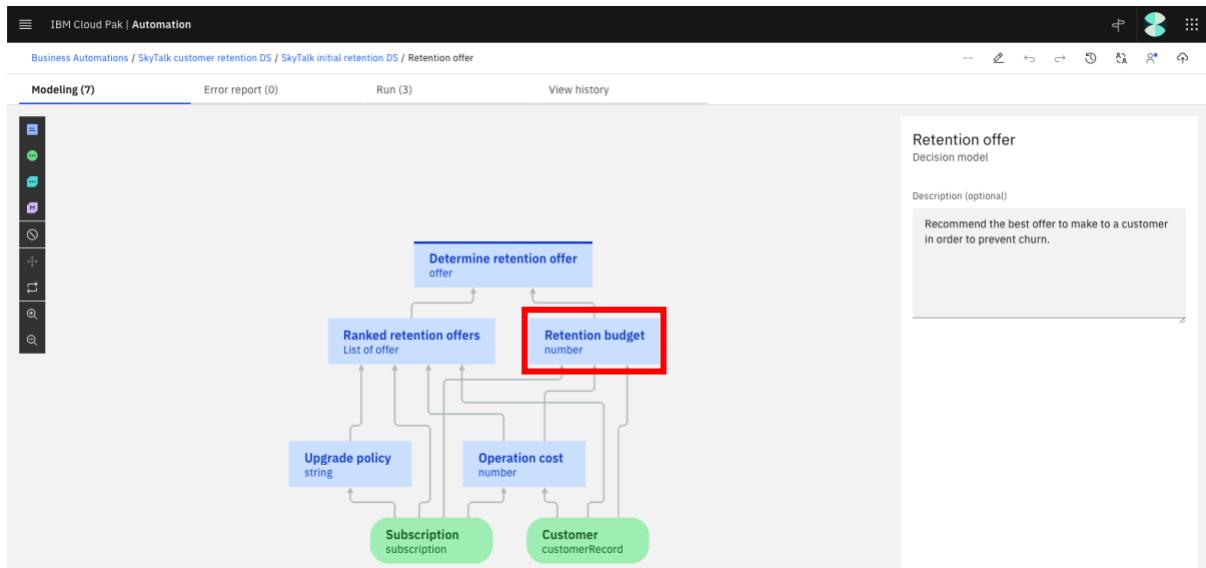
Action 4.3.1

- Click **Retention offer**.

The screenshot shows the IBM Cloud Pak | Automation interface. The top navigation bar includes 'IBM Cloud Pak | Automation', a search bar, and various icons. Below the navigation is a breadcrumb trail: 'Business Automations / SkyTalk customer retention DS / SkyTalk initial retention DS'. The main area is titled 'Models' and displays a list of models. The 'Retention offer' model is highlighted with a red box. A tooltip for this model states: 'Recommend the best offer to make to a customer in order to prevent churn.' The table columns include 'Name', 'Last updated by', and 'Last updated at'. The 'Retention offer' row shows 'Me' under 'Last updated by' and 'Never shared' under 'Last updated at'. At the bottom of the table, there are pagination controls: 'Items per page: 100', '1–2 of 2 items', and '1 1 of 1 pages'.

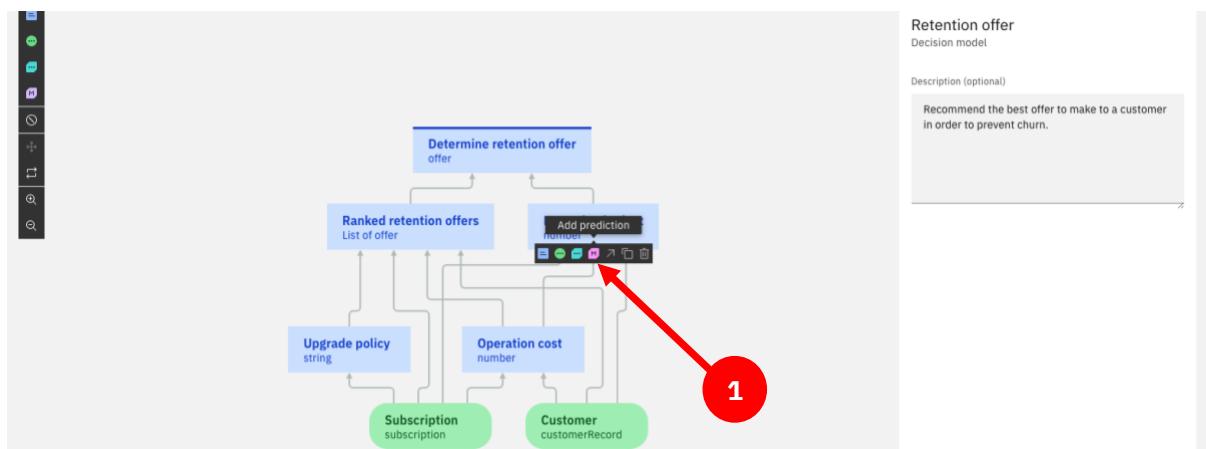
Action 4.3.2

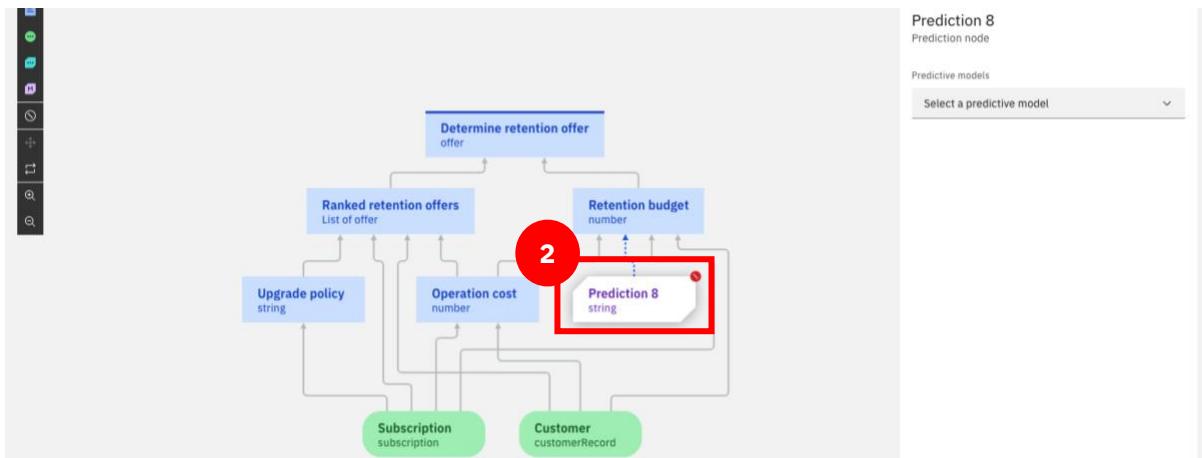
- Hover the mouse over the **Retention budget** decision box on the screen.



Action 4.3.3

- A black choice box appears over the **Retention budget** decision box. Click the **purple box** to **Add prediction** (1). **Prediction 8** (2) will be added to your model.



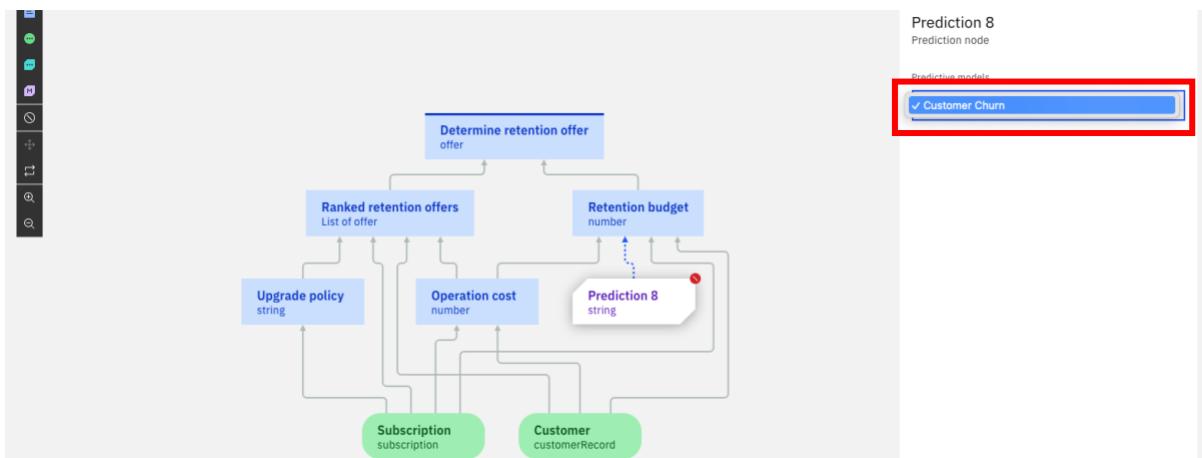


Narration

The analyst assigns the churn predictive model to the newly-created predictive node.

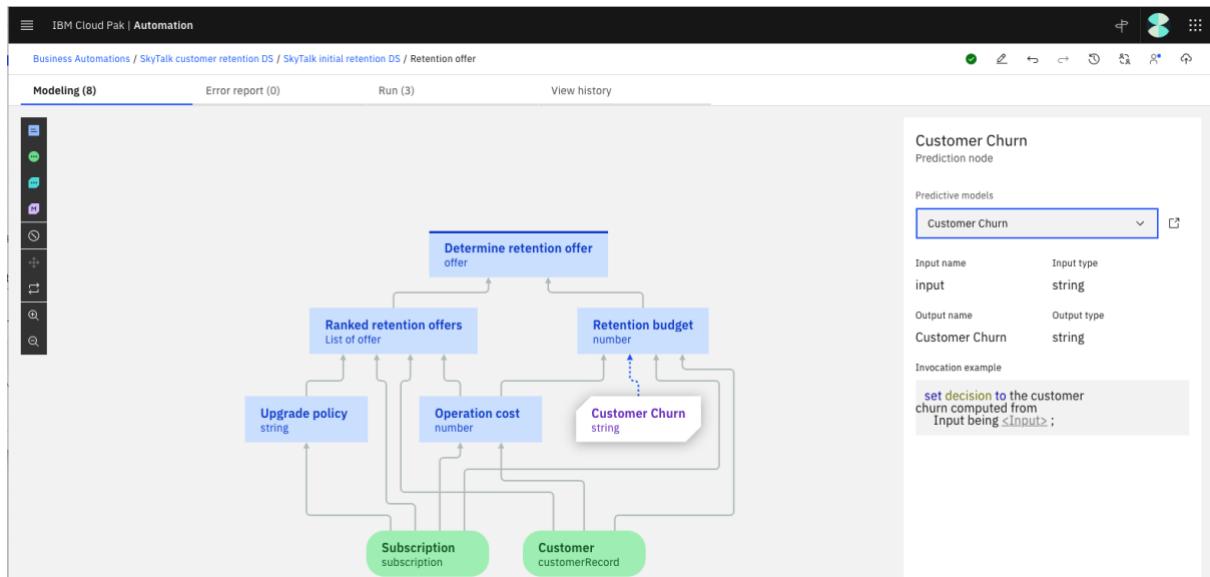
Action 4.3.4

- Select the **Prediction 8** node (1) and then select the **Customer churn** predictive model (2).



Action 4.3.5

- Review the **SkyTalk initial retention DS** decision model that opens.



Narration

In practice, the same steps would be repeated to create another prediction service for the customer lifetime value predictive model. For our demo, this has already been created.

Let's look at the final decision model.

Action 4.3.6

- Return to **SkyTalk customer retention DS** using the breadcrumb navigation menu.

The screenshot shows the breadcrumb navigation menu in the top left corner. The path "Business Automations / SkyTalk customer retention DS / SkyTalk initial retention DS / Retention offer" is displayed. The "SkyTalk customer retention DS" part is highlighted with a red box.

Action 4.3.7

- Click the **SkyTalk retention DS** tile.
- NOTE:** The **SkyTalk initial retention DS** tile will not be used anymore in the demo.

The screenshot shows the "Decision services" section in the IBM Cloud Pak | Automation interface. It lists two decision services: "SkyTalk initial retenti..." and "SkyTalk retention DS". The "SkyTalk retention DS" tile is highlighted with a red box. Both tiles have a note indicating they need to be connected to two ML models. Below each tile are "Sample" and "Machine learning customer loyalty" buttons.

Action 4.3.8

- Click **Retention offer**.

Name	Last updated by	Last updated at
Customer Churn	Me	Never shared
Customer Lifetime Value	Me	Never shared
Retention offer	Me	Never shared

Narration

The analyst can now review the ‘Retention offer’ business logic.

Action 4.3.9

- Click the **Retention budget** box.

Narration

The retention budget is calculated using the three sequential rules that will be applied in the order shown in the dropdown menu.

Action 4.3.10

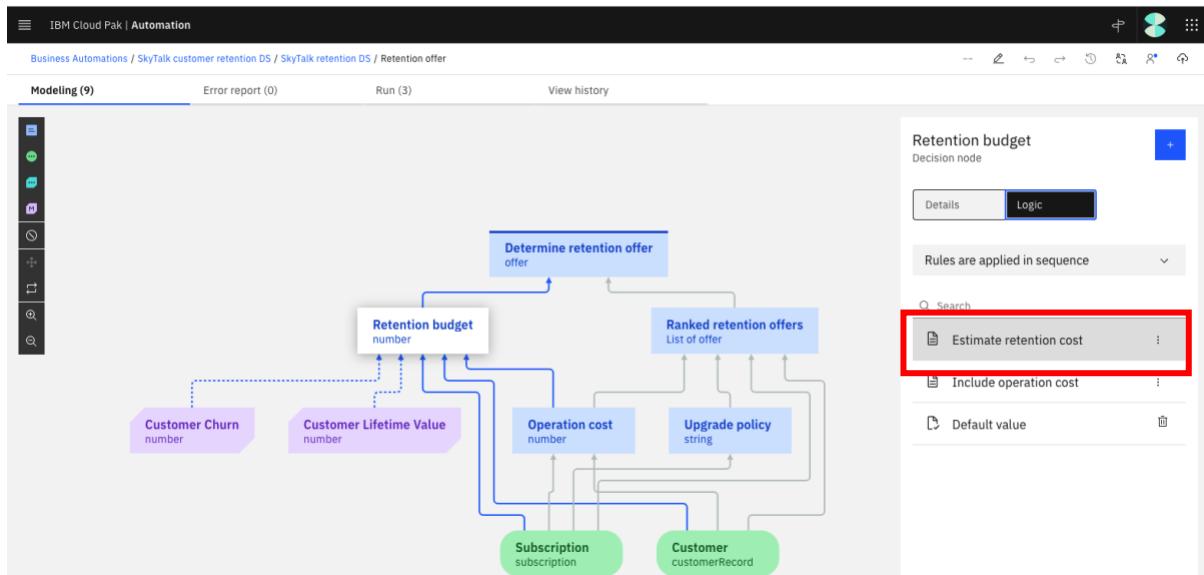
- Select the **Logic** tab.

Narration

The ‘Estimated retention cost’ rule calculates how much we are willing to spend to keep this customer.

Action 4.3.11

- Click **Estimated retention cost** to review the retention budget rule.



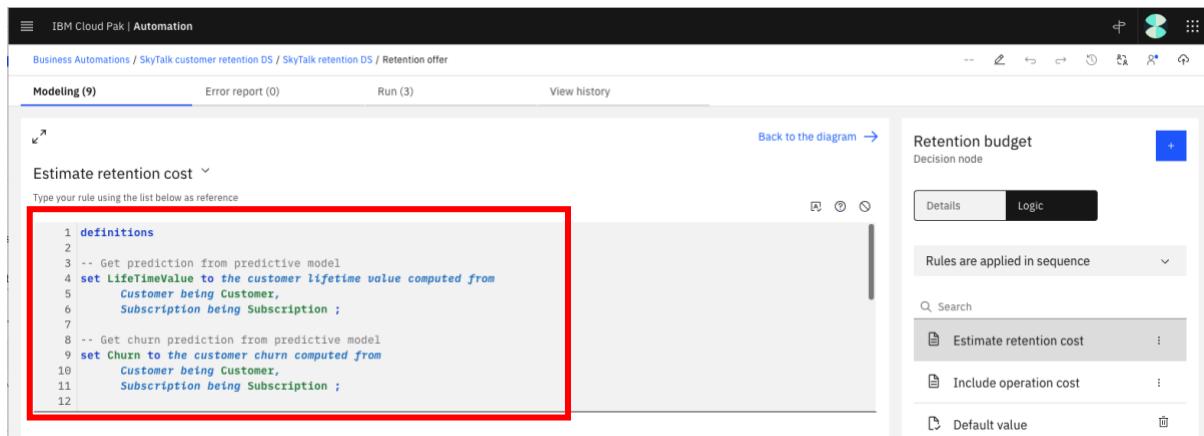
Narration

These are the business rules used to calculate the retention cost.

At the start of the rules the definition of the ‘LifeTimeValue’ variable, which is used in many calculation rules below, includes invoking the customer lifetime value predictive service. Similarly, the Churn variable definition includes invoking the churn predictive service.

Action 4.3.12

- Review the **Estimated retention cost** business rule.



Narration

Scrolling further down in the definition, the analyst can review how the results are calculated using the predictions.

Action 4.3.13

- Scroll down in the business rule to show more detail.

```
18 --integrate margin
19 if Churn is less than 0.7 then
20     -- The retention budget cannot exceed 50% of the monthly customer value
21     set decision to 'adjusted value' * 0.5;
22     print "Lifetime value: ">LifeTimeValue;
23     print "Churn: "+Churn;
24
25
26     -- The retention budget cannot exceed 75% of the monthly customer value
27 else set decision to 'adjusted value'* 0.75;
28     print "Lifetime value: ">LifeTimeValue;
29     print "Churn: "+Churn;
```

Narration

Before deployment, the decision logic can be tested to ensure the results are as expected.

4.4 - Testing the decision services

Narration

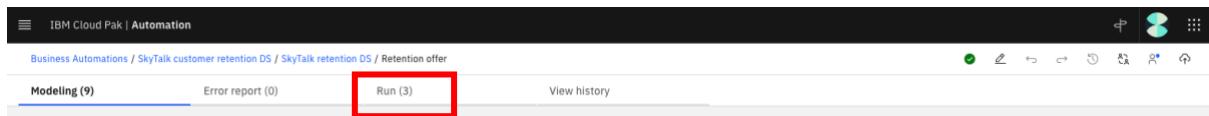
The retention budget is based on the customer probability to churn and the customer estimated lifetime value.

To validate the retention budget decision, three pre-defined customer profiles are used.

The first one is a low value profile. It corresponds to the customers on which SkyTalk is not willing to spend a big retention budget.

Action 4.4.1

- Click the **Run (3)** tab.



Action 4.4.2

- Select **Low value profile** (1) and click **Run** (2).
- Click **Show more** (3) when the result is displayed.

A screenshot of the IBM Cloud Pak | Automation interface. The 'Run (3)' tab is selected. In the 'Test data' section, a dropdown menu is open, showing 'Low value profile' (marked with a red box and circled with '1'). Below it, there are fields for 'Customer': gender (M), location (urban), name (John), estimated income (56000), car owner (checked), and age (2). At the bottom of the 'Test data' section, there is a blue 'Run' button (marked with a red box and circled with '2'). In the main content area, under 'Low value profile' (4/12/2022, 2:14:40 PM), there is a 'Decision output' section with a 'Node Name' table. One row shows 'Determine retention offer' with a 'Result' JSON object: {"estimated_cost":0.0,"message":"Send John a customer satisfaction survey."}. Below it is a 'Messages' section with a table showing lifetime value, retention budget, and maximum retention budget. At the bottom is a 'Run history' section with a table showing the run details, including the node 'Determine retention offer', rules (2), rule interaction (Sequence), and output (the same JSON result). A 'Show more' link is located at the bottom right of the 'Result' section (marked with a red box and circled with '3').

Narration

The decision works as expected. SkyTalk will spend no retention budget for this customer and will just send a satisfaction survey. This is due to a limited estimated lifetime value of \$4,134 and a low churn probability of 5.9%.

The same decision is now tested against Medium Value profiles. SkyTalk is willing to spend a limited budget to retain these customers.

Action 4.4.3

- Select **Low medium profile** (1) and click **Run** (2).
- Click **Show more** (3) when the result is displayed.

Test data
Run your model with test data.

Medium value profile
4/12/2022, 2:15:38 PM

Decision output

Node Name	Result
Determine retention offer	{"estimated_cost":8.0,"message":"Offer Peter a 10% discount on his current lifetime value."}

Messages

Message	Node name	Rule name
Lifetime value: 901.8674926757812	Retention budget	Estimate retention cost
Churn: 0.9292239274550297	Retention budget	Estimate retention cost
Maximum retention budget: 9.427914602867359	Retention budget	Include operation cost

Run history

Node	Rules	Rule Interaction	Output
Determine retention offer	2	Sequence	{"estimated_cost":8.0,"message":"Offer Peter a 10% discount on his current lifetime value."}

Narration

Here again, the decision works as expected.

Only \$8 are spent to offer a 10% discount to this customer having an 89% propensity to churn. Finally, the decision is tested on the high value profiles on which SkyTalk is willing to invest retention money.

Action 4.4.4

- Select **High value profile** (1) and click **Run** (2).
- Click **Show more** (3) when the result is displayed.

Narration

The retention budget is higher to retain this customer having a high lifetime value and a very high propensity to churn.

The decision works as expected in the three situations. It can now be deployed and used in the customer call center application.

Let's see it in action.

5 - Using the automated call center application

5.1 - Generate a real-time retention offer that best allocates SkyTalk's retention budget

Narration

SkyTalk developed an automated call center application. The application provides agents with customer-specific retention offers in real time.

Let's look at how an agent now handles a customer call using this application.

Action 5.1.1

- Show the **SkyTalk – Call Center application** preview window, which was opened during the demo preparation (see step 10 in the demo preparation instructions).

Action 5.1.2

- Enter “Peter Carter” in the **Search customer** field (1), and click **Search** (2).



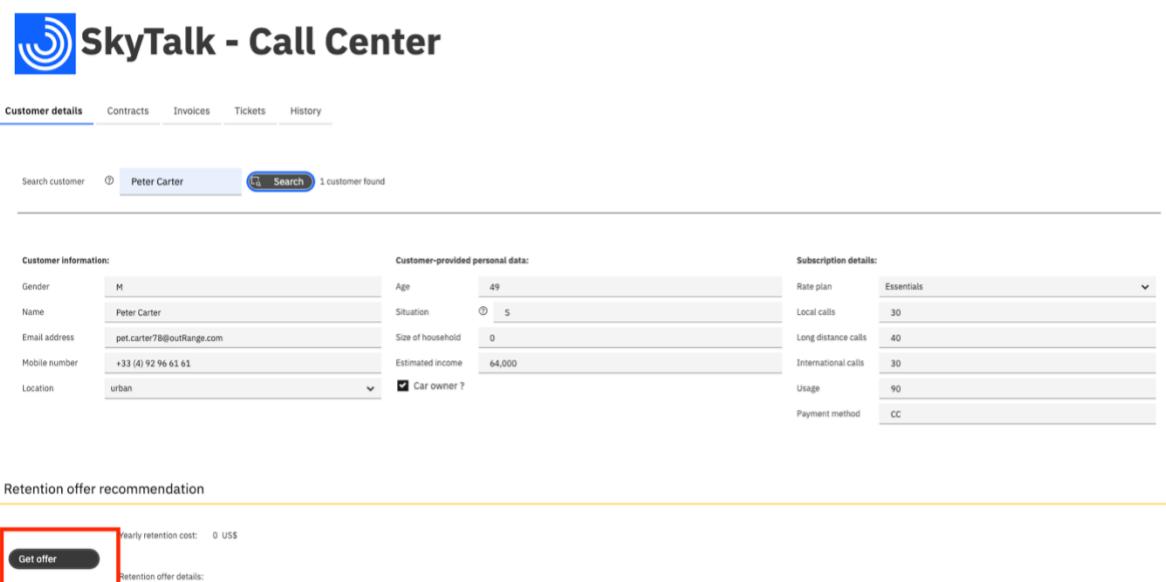
The screenshot shows the SkyTalk - Call Center application interface. At the top, there is a navigation bar with tabs: Customer details, Contracts, Invoices, Tickets, and History. Below the navigation bar, there is a search bar with the placeholder "Search customer". A red circle labeled "1" is placed over the search input field, which contains the text "Peter Carter". To the right of the search input field is a search button labeled "Search". A red circle labeled "2" is placed over this search button. Below the search bar, a message "No customer found" is displayed.

Narration

A customer-specific retention offer is displayed. The agent suggests this offer to the customer in real time.

Action 5.1.3

- Click **Get offer**.



The screenshot shows the SkyTalk - Call Center application interface. At the top, there is a navigation bar with tabs: Customer details, Contracts, Invoices, Tickets, and History. Below the navigation bar, there is a search bar with the placeholder "Search customer". A red box highlights the search input field, which contains the text "Peter Carter". To the right of the search input field is a search button labeled "Search". A message "1 customer found" is displayed below the search button. The main content area displays a customer profile for Peter Carter. The profile includes sections for Customer information (Gender: M, Name: Peter Carter, Email address: pet.carter78@outRanga.com, Mobile number: +33 (4) 92 96 61 61, Location: urban), Customer-provided personal data (Age: 49, Situation: S, Size of household: 0, Estimated income: 64,000, Car owner?: checked), and Subscription details (Rate plan: Essentials, Local calls: 30, Long distance calls: 40, International calls: 30, Usage: 90, Payment method: CC). Below the profile, there is a section titled "Retention offer recommendation" with a "Get offer" button highlighted by a red box. The button has the text "early retention cost: 0 US\$". Below the button, there is a link "Retention offer details:".

Summary

In this demo, I showed how business users can easily build business rules that incorporate predictive decisions. The predictions help retain SkyTalk's profitable customers by providing customized offers at the lowest cost to SkyTalk.

The new retention process also improved productivity by eliminating manual procedures. Customer satisfaction will increase with speedier and more relevant service.

Thank you for attending today's presentation.

Note - After the demonstration

When you are done with your demonstration, don't forget to proceed with the instructions in the **After each demo** of the **Demo preparation**.

These instructions will explain you how to un-deploy the two ML services to suspend the billing process and save your free Watson ML Lite quota.

